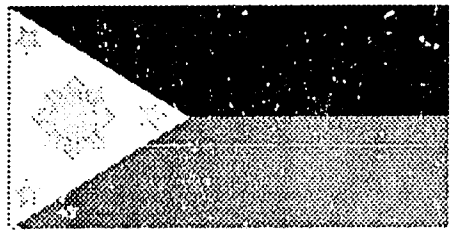

Private Power Development in the Philippines

prepared for

National Power Corporation
Republic of the Philippines

a report of the

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and
the Philippines Mission

prepared by

Energy Technology Innovation Project
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Glossary

ADB – Asian Development Bank

BOO – Build – own – operate

BOT – Build – operate – transfer

BTO – Build – transfer – operate

ECA – Export credit agency

ENDESA – Empresa Nacional de Electricidad, S.A. – national utility in Spain

FERC – Federal Energy Regulatory Commission (USA)

IFC – International Finance Corporation

IFI – International financing institution

LDC – Less developed country

LIBOR – London InterBank Offered Rate – variable rate loan index

MIGA – Multilateral Insurance Guarantee Agency – investment insurance source

NAPOCOR – National Power Corporation of the Phillipines

OECD – Organization for Economic Cooperation and Development

OPIC – Overseas Private Investment Corporation

Order 215 – Executive Order 215 – EO 215 – Philippine government action to authorize private sector participation in power generation, July 1987

PIA – Project Implementation Agreement

PIM – Preliminary Information Memorandum – financing requirement

PPA – Power Purchase Agreement

PSEDF – Private Sector Energy Development Fund – World Bank

PURPA – Public Utility Regulatory Policy Act (USA, November, 1978)

REDESA – Red Electrica de Espana – utility agency in Spain

SO4 – Standard Offer #4

TDP – Trade and Development Program

USXM – The Export-Import Bank of the United States

Section 1 Introduction

Private sector participation in power generation in the Philippines was authorized by Executive Order 215 in 1987. Since that time the National Power Corporation (NAPOCOR) has successfully developed private sector ownership, and operation of the Navotas project and other projects are planned for which NAPOCOR has solicited proposals for build-operate-transfer (BOT) contracts. Other strategies have been considered as well.

NAPOCOR requested United States Agency for International Development (USAID) assistance, through USAID's contractor, Bechtel Corporation. The overall objective of this assistance was to provide technical support to NAPOCOR in increasing private-sector participation in the power supply industry. This effort was cosponsored by the USAID Mission in Manila and the USAID Office of Energy and was performed by Bechtel under direction of the Energy Technology Innovation Project.

A number of configurations of private participation in the power sector are possible, some of which have been already implemented in the Philippines. These include:

- Private development and construction of NAPOCOR-planned projects
- Private development, construction, and operation of NAPOCOR-planned projects, as in BOT schemes
- Encouragement of third-party power arrangements in which the primary agreements are between a non-NAPOCOR developer and a customer, with NAPOCOR playing only a supporting (but critical) role
- Sale of existing NAPOCOR assets to the private sector

It should be noted that privatization necessarily means increased competition. Even so, technical constraints and the amounts of investment capital required often limit competition, and monopolies can be privately owned. It is a fundamental premise of this analysis that the goal of privatization is to achieve efficiencies in power production and delivery through the influence of competition.

Given the limited private power experience in the Philippines, it is difficult to generalize a formula for project success. The consultant's findings and recommendations are based on extensive experience with other less developed country (LDC) private power programs, on first hand observations of the Philippines program, and on discussion with Philippine public and private sector program

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participants. The nature of the study does not lend itself to quantitative validation; the recommendations are offered as the opinions of the consultant. The consultant has attempted to remain objective in the execution of this assignment.

This report contains four sections and a separate appendices volume. Section 1 is this introduction. Section 2, Power Sector Restructuring, describes experiences of other countries in power sector privatization and deregulation. Privatization is a worldwide trend, taking place against a backdrop of unique national and regional circumstances. The key characteristics of developing economies that must be considered when extrapolating these experiences to the Philippines are discussed in this section along with the universal policies necessary to encourage private investment in the power sector.

The key characteristics of a successful privatization program are discussed in Section 3, Elements of a Power BOT Program. This section focuses on the BOT option, but is applicable to a number of other options as well. The overall structure of a power BOT arrangement, the contractual documents defining the relationship between the key participants, and the perspectives of nonutility participants, from project sponsors to commercial banks to fuel suppliers, are discussed.

Section 4, Prescription for Success, uses the previously developed Power BOT Framework to assess the current Philippine BOT program. The program is assessed for its implications in attaining government power sector objectives. Where necessary, suggested program modifications are recommended.

Section 5, Recommendations, summarizes proposed modifications to the government's private power program and includes a process for program implementation.

Supporting documents and analysis are presented in Appendices A to O:

Appendix A contains Standard Power Sales Agreements which typify terms and conditions in the startup phase of a country private power program.

Appendix B is an Environmental Permitting Guide which typifies the environmental permitting assistance offered to private power developers.

Appendices C to H provide methodologies and supporting analysis for the calculation of wheeling rates, backup power rates, and avoided capacity and energy costs.

Appendix I includes current lender evaluations of the Philippines lending risk.

Appendix J displays a typical table of contents for a Project Information Memorandum which would need to be completed as the basis for obtaining firm lending commitments for a BOT project.

Appendix K contains a proposed revised NAPOCOR Request for Proposals for a BOT power project.

For comparison purposes typical power RFPs from the U.S. private power market are included as Appendices L and M.

Appendix N contains an audit of the Mindanao RFP process.

Appendix O uses the Power Privatization Framework to assess privatization of NAPOCOR's existing power generation assets.

Section 2 Power Sector Restructuring

There is a great variation in the structure of power sectors around the world, from national ownership of generation, transmission, and distribution to private ownership of all of these functions. Nevertheless, until the 1980s these structures were similar in that even privately owned utilities largely escaped competitive pressures. This changed in the U.S. with the encouragement of nonutility generation and was paralleled by privatization of the power sector in Great Britain and Malaysia where national utilities had existed. This section discusses some of the key aspects of the trend toward privatization/deregulation, some of the key factors affecting the establishment of similar trends in less developed countries (LDCs), and the relevant policies that have encouraged private power development elsewhere and have application in the Philippines.

2.1 NONUTILITY POWER PROGRAM IMPLEMENTATION: A U.S. CASE STUDY

Approximately 75 percent of the U.S. electric load is served by 213 privately owned companies. These companies are vertically integrated into all three main functions – generation, transmission, and distribution. The remaining 25 percent of load is served by over 2,000 publicly owned and consumer-owned utilities, about half of which provide only retail distribution.

Thus, private power is well established in the U.S. Relevant to this discussion is not power privatization in the U.S., but deregulation through increased nonutility generation. Historically, power generation in the U.S. has been based on regulated monopolies. Nonutility generation in the U.S. represented an insignificant component of total utility generation. It was generally developed in response to a utility's:

- Inability to serve isolated demand
- Inability to provide competitive power vis-a-vis low cost customer generation, e.g., generation from wood-waste fuels from lumber mills or off-gas from refineries
- Inability to provide reliable generation

However, the seeds for dramatic change were sown with implementation of the Public Utility Regulatory Policy Act (PURPA) in November 1978. PURPA instructed the Federal Energy Regulatory Commission (FERC) to develop rules encouraging cogeneration and small power production. The motivation for this legislation was largely energy conservation.

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PURPA required electric utilities to purchase power from cogeneration and small power production facilities at a rate no greater than the incremental cost of alternative electric energy generation. Furthermore, utilities had to provide services to these facilities at nondiscriminatory, just, and reasonable rates. Utilities were required to:

- Purchase power from qualifying facilities and small power production facilities at a rate not to exceed the avoided cost of alternative power generation. It was anticipated that such a rate would encourage private power development while protecting ratepayer interests.
- Provide backup power to these facilities at non-discriminatory rates.

2.1.1 Beginning of the PG&E Program

It was left to each state to implement PURPA in accordance with the FERC rules. Unlike many state regulatory bodies, the California Public Utility Commission (CPUC) was a progressive advocate for energy conservation and alternative energy development. It communicated this quite strongly to utilities within its jurisdiction when it penalized Pacific Gas and Electric Company (PG&E) by reducing PG&E's authorized return on ratebase for failure to aggressively pursue alternative energy development.

Although skeptical, and philosophically opposed to private power development, PG&E implemented an aggressive alternative energy marketing program targeted at potential developers and project sponsors. The key to the success of this program was an understanding of what the project sponsor required in order to commit limited equity to a "high risk," long-term development prospect.

PG&E's program was communicated through standard power purchase agreements (PPAs) for the purchase of power from qualifying cogeneration and small power production facilities (see Appendix A). Each of the four standard offer contracts limited ratepayer exposure while simultaneously addressing key commercial and financial concerns of project participants.

The PPAs were sales tools for encouraging private power development in the PG&E service territory, and they catered to the unique requirements of limited recourse financings (the project structure of choice for most private power projects). Many developers were thinly capitalized or start-up companies with an inadequate balance sheet to support a full recourse financing. The

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PPAs addressed the key concerns of project developers and sponsors, including:

- Long-term committed power offtake
- Predictable power pricing:
  - A fixed capacity payment over the life of the contract based on PG&E's avoided marginal generation resource (gas-fired combined cycle) and avoided fixed operation and maintenance.
  - A prescribed formula for energy payments (PG&E's system incremental heat rate multiplied by the marginal fuel cost). The standard offer #4 (SO4) contract specified the incremental heat rate for a 10-year period so that the only pricing risk for the first 10 years was the cost of PG&E's incremental fuel. This alleviated much of the uncontrollable risk over the first 10 years of the contract.
- Adequate debt service coverages in the early project years were accommodated through a levelized capacity payment. However, since this put ratepayers at risk as to future recovery of early year overpayments, there were penalties for failure to provide contractual capacity commitments.

2.1.2 Financing and Development

Limited recourse financings tend to be highly leveraged transactions with lenders generally providing from 70 to 90 percent of the total financing. While a long-term power offtake at predictable prices is a key element in attracting limited recourse financing, all other contractual documents must also support a limited recourse undertaking. Before signing loan agreements, i.e., financial close, lenders will require that all contract documents be finalized, including fixed price/schedule turnkey construction contracts, operations and maintenance agreements, power sales agreements, steam sales agreements (for cogeneration projects) and fuel supply agreements. (See Figure 2-1). All governmental permitting including environmental permitting must also be approved.

The inherent contractual complexity of limited recourse financing translates into a difficult development process for project developers. Under the best of circumstances assuming the full cooperation of all participants, project development may take over a year.

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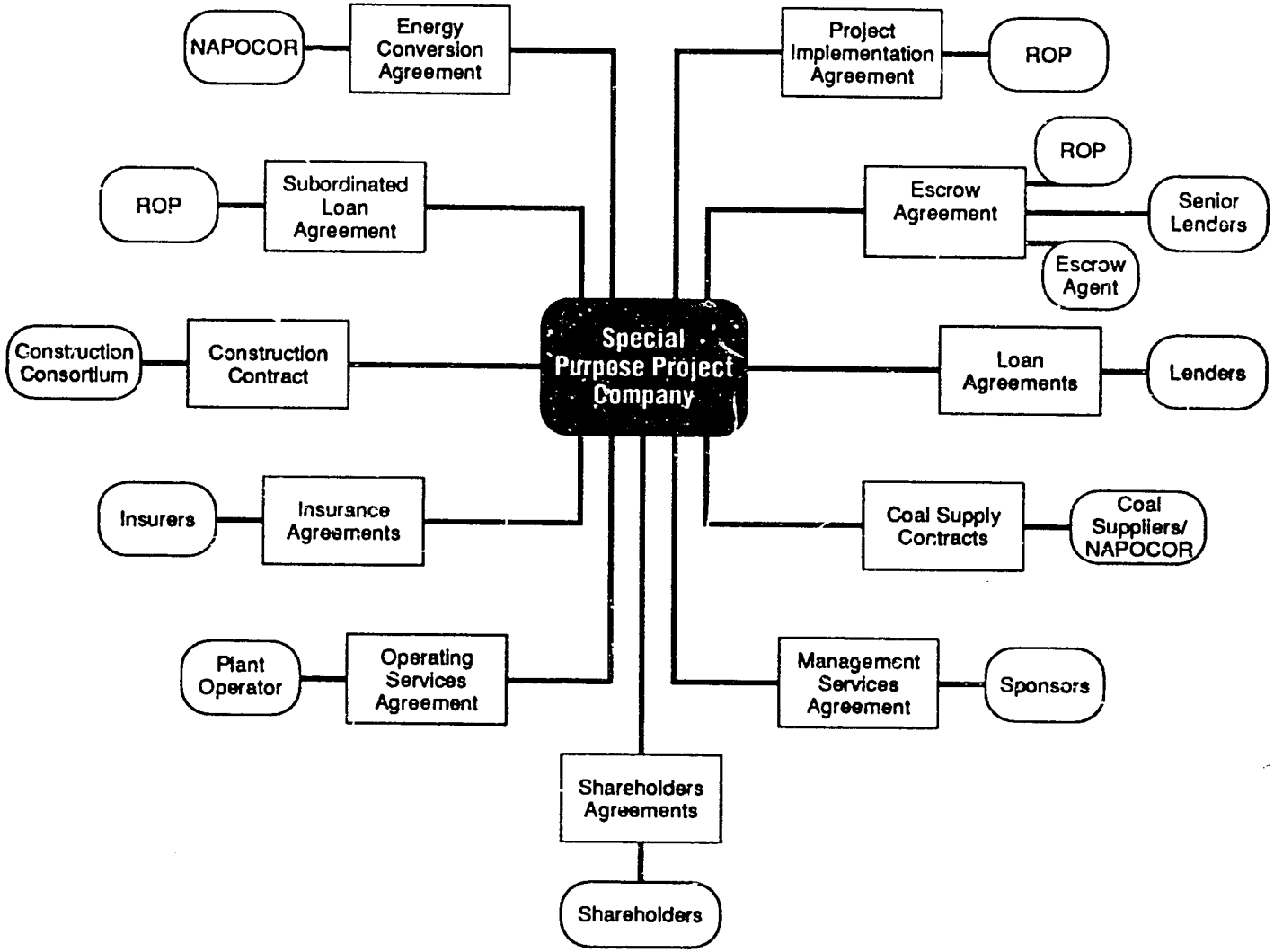

Figure 2-1 Components Needed to Close Financing

2.1.3 Early Implementation Successes and Problems

In California and many other states, there was a common perception that utilities were using their superior bargaining position to derail the development process. PG&E sought to counter this view by providing a "roadmap" to guide developers through the development process, including utility review and approval. Additionally, PG&E sought the assistance of an environmental consultant to develop the *Environmental Permitting Handbook* to guide developers through one of the most difficult aspects of project development in California. (Similar material developed by Boston Edison in support of its cogeneration program is included in Appendix B).

PG&E was able to successfully implement a private power program within its service territory by tailoring its program to the requirements of the private sector. Its program was directed at creating a commercially and financially viable development opportunity within the constraints established by PURPA.

As an example, rates to be paid by California utilities for generation under SO4 contracts were a function of a complex analysis that reflected 10-year projections of natural gas prices and system demand. Actual experience has differed substantially from those forecasts with the result that the prices embedded in the early standard contracts have exceeded actual avoided costs. This has resulted in the general perception by many that California ratepayers have experienced a loss from the purchase of nonutility generation.

The overestimate of capacity needs compounded this problem by increasing the number of contracts that were let with this pricing formula. However, the result was very supportive of the development of nonutility generation and many have argued that this has served the long-term public good.

2.1.4 Market Evolution

The market has evolved considerably from its early years when an aggressive marketing approach was needed to induce developers and financiers to undertake private power projects. Private power is a proven concept with many developers pursuing project opportunities. Utilities have redesigned their approaches to minimize risks to ratepayers while preserving the key elements of commercial and financial viability.

In general, most utilities solicit competitive bids to fill capacity and energy blocks. In a relatively deep market where the total megawatts bid greatly exceeds the megawatt block to be filled, it can

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be safely assumed that the highest power price that is successfully bid is the de facto avoided cost. This approach obviates the need to establish an avoided cost, although most utilities limit the successful bid price to less than or equal to the calculated avoided cost price on a net present value basis. Presumably, the utility could build the plant and produce power at the avoided cost power price.

This approach is not without problems. In a competitive bid situation where projects are awarded based on the lowest cost of power generation, inexperienced developers may be at a decided advantage. However, there is no assurance that these developers can actually develop (and finance) a project as bid. In fact, inexperienced developers may bid a low power price, believing the project can be developed as bid. During actual development, underbidding becomes obvious when remaining tasks cannot be financed with remaining funds.

Early experience with a competitive bid approach in the U.S. showed that poorly conceived, low cost bids drive out credible bids. Many utilities experienced first-hand the frustration of awarding bids to fill a demand block only to have the developer fail to deliver. Consequently, in today's competitive bidding, each proposal is scored for nonquantifiable elements including the credibility of the proposal as evidenced by preliminary engineering drawings, environmental permits, milestone schedules and development plans, financing plans, equity financing commitments, and development experience.

2.1.5 Strides Made Under PURPA

The U.S. private power industry has made tremendous strides since its genesis in the PURPA legislation. In fact most utilities now plan to accommodate some form of private power generation within their systems. Furthermore, many utilities have created their own unregulated subsidiary companies to pursue private power development. (Most public utility commissions limit a utility's pursuit of private power opportunities within its own electric system to avoid conflict of interest.)

Utility policy has accommodated this move towards deregulation for many reasons, including:

- Private power development is best suited to incremental resource additions. Incremental additions to electric generation provide for a better matching of electric supply and demand.

- Utilities are realizing that the allowed returns on equity are not adequately compensating shareholders for the risk the utility faces in developing its own resources. Prudency hearings and sizable disallowances from rate bases cast "safe" utility returns in a new light: utility shareholders are taking risks similar to those taken by private power developers, but are being limited in return on equity. Utilities that have their own unregulated private power development subsidiaries are able to let shareholders realize an appropriate risk-compensated return on equity.
- Private power has demonstrated its ability to meet or exceed utility operational and reliability requirements. Much of the early skepticism has evaporated in the face of substantial positive operating experience.
- Requests for Proposals (RFPs) can be tailored to ensure that utility preferences (fuel source, technology, etc.) are weighted. However, it is left to the creativity of the developer to trade off utility preferences against power price and other project elements.

The growth in the U.S. private power industry has generated tremendous competition among project developers. With fewer identifiable opportunities in the U.S. market, many experienced developers are looking to pursue work offshore. While offshore markets represent tremendous opportunities, they have unique attendant risks. The LDC markets present an especially challenging project environment (as evidenced by the limited success in developing international power BOT projects and their variants).

2.2 UNIQUE ASPECTS OF LDC MARKETS

Based on the success of private power development in the U.S., many LDCs have attempted to import U.S. models for private power development. Unfortunately, this ignores the unique requirements of a start-up industry as well country-specific factors affecting private power development. While each U.S. utility has approached private power on its own terms, the U.S. market has common roots in PURPA legislation. Furthermore, U.S. projects are underpinned by a common legal, accounting, and regulatory framework. This is not necessarily so overseas, and international private power development must be approached on a country-by-country basis.

BOT models have been developed to satisfy a number of country objectives but generally have not recognized the limitations inherent in LDC markets. Enabling legislation and follow-on policy

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guidelines have not fully recognized the needs of private sector participants. The starting point for prospective developers are the privatization models that have been successful in Organization for Economic Cooperation and Development (OECD) countries. These models must be adapted to prevailing legislative frameworks and country-specific constraints. These constraints can be categorized as either external constraints (beyond the immediate control of BOT policymakers) and internal constraints imposed as part of the BOT program or a broader country investment program. External constraints may include:

- Limited commercial bank capacity for country risk financing due to:
  - Unattractive risk profile for financiers limiting ability to syndicate
  - Banking regulations that specify substantial reserves for sovereign borrowings when country is currently rescheduling debt
- Political instability and inability to sustain long-term economic program and policy direction
- Limited availability of foreign exchange
- Offshore investments being perceived as riskier investments and therefore needing to produce higher returns for project developers
- Poorly developed capital markets limiting the ability to raise financing onshore

Policy constraints may include:

- Government-imposed limits on lender security structures, such as requirements that preclude any form of direct sovereign guarantee:
  - Many international financial institutions will only lend on a sovereign credit basis
  - The local utility may not represent an adequate credit for the project
- Foreign ownership limitations
- Limits on foreign exchange repatriation and/or free convertibility (managed exchange rates)

- Requirements that disputes be resolved within the local legal system, when that system does not adhere to minimal international standards
- Lack of clearly defined procedure for continuing payments while disputes are pending
- Need for power price to be competitive with current subsidized power prices
- Utility policy on wheeling/backup power that renders projects uneconomic
- Allowable returns inconsistent with level of risk supported by private sector

Such constraints will limit the range of options in structuring commercially and financially viable project development opportunities. If project proponents hope to elicit broad private sector interest in developing private power opportunities, they must recognize limitations in existing policy.

2.3 POLICIES THAT ACCOMMODATE PRIVATE POWER GENERATION

The worldwide movement toward privatization and deregulation has taken place against the backdrop of unique national and regional circumstances. For this reason, experience in other countries must be viewed in context before drawing lessons for the Philippines. Nonetheless, certain universal accommodative policies are necessary to encourage private investment in the power sector. These include:

- Predictable pricing mechanisms
- Access to the market
- Mechanisms to facilitate cooperation between different and possibly competing suppliers
- Provisions for adequate lender security
- Provision of a balanced risk/reward profile

In the U.S., FERC's rules implementing the PURPA legislation accommodated the needs of private power developers. These rules were subsequently interpreted by utilities in a manner that supported their own private power objectives. The key assumptions were that power must be purchased at avoided cost prices and utilities must offer utility services to private power projects at just and reasonable rates.

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In the U.S. and other OECD countries, enabling legislation is sufficient for the development of an active private power market. These countries can presuppose a stable political environment, developed capital markets, and an impartial legal system for mediating disputes. In many LDCs, policy initiatives will have to address deficiencies in these areas.

2.3.1 Predictable Pricing Mechanisms

A variety of power pricing mechanisms have been applied throughout the world, from cost-based rates in the U.S. to long-range marginal cost tariffs in Europe. The success of any of these in the private sector depends on whether the return to the investor matches risk. If the return is too low the investor will invest money elsewhere; if it is too high the consumer will pay too much and, in a deregulated environment, market share will decline.

The rates resulting from these pricing mechanisms require frequent revision to reflect changes in fuel and labor costs, the addition of new capacity to the system, and variations in exchange rates due to the significant foreign presence in most power sector investments.

At the heart of utility regulation is providing adequate service at prices that are fair and reasonable to both the ratepayer and the utility. The concept of avoided cost pricing adheres to this. It establishes a price for power purchases from nonutility projects that is no greater than what the ratepayer would have paid had a utility project been built in its place: the price paid to nonutility generators is based on the cost the utility avoids by not having to build its own facility. On the basis of power pricing, the ratepayer/consumer is indifferent to utility versus nonutility ownership. Table 2-1 examines the elements of power pricing in support of nonutility generators' competitive advantage.

U.S. utilities have interpreted ratepayer indifference implied in avoided cost pricing as a test to be applied over the life of the power sales agreement: the net present value power payments over the term of the power sales agreement cannot exceed the net present value of avoided costs over the same term. This is a key element in private power project financeability in that it enables utilities to pay higher power costs in the early project years to better match nonutility project debt service costs. Utilities have approached this in a number of ways, but generally have offered to pay levelized capacity (fixed charge payments over the contract term). However, utilities have also acknowledged the attendant ratepayer risk (ratepayers overpay for power in the early contract years and

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Table 2-1
Utility vs. Nonutility Power Generation
Comparison of Power Pricing

Competitive Advantage	Explanation
Financing	
Cost of capital	Although financing costs are generally lower for utilities than for nonutilities, this difference is substantially mitigated by nonutilities' use of higher financial leverage in structuring their projects. A utility may have 50 percent equity at a cost of 14 percent and 50 percent debt at a cost of 10 percent for a weighted average cost of capital of 12 percent; a nonutility may have 20 percent equity at a cost of 20 percent and 80 percent debt at a cost of 11 percent for a weighted average cost of capital of 12.8 percent.
Longer loan repayment terms	Utilities generally finance over a much longer term than is possible for nonutility generators who ordinarily finance on a limited recourse basis. This generally means that nonutility generators will require higher early-year power prices to cover higher early-year principle repayments. However, later-year power prices will be correspondingly lower.
Aggressive financial management	One of the basic tenets of privatization is that because the private sector has a vested interest in the success of a project it aggressively manages the project to ensure its good performance and continued profitability. In general, private sector nonutility generators will institute an aggressive program of currency hedging/swapping and interest rate management (including refinancing) to increase profitability.
Operations	
Heat rate, availability, operations and maintenance	Because nonutility operators have a vested interest in operating as efficiently as possible they generally are able to achieve better operating performance than utility operators.

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Table 2-1 (Cont'd)

Competitive Advantage	Explanation
Incentive Structure	
Construction, operations, fuel	In private power projects the private sector contracts for all plant services, including plant construction, operations and maintenance, and fuel management. The private sector owners of the project are able and willing to structure incentives (and penalties) for better-than-expected performance in to all contracts. The people with day-to-day responsibility for the project have their compensation tied to those elements of plant performance that are within their control.
Coordinated Approach	
	To compete successfully in the private power market, project sponsors must be able to provide competitively priced, reliable power while earning adequate returns to compensate investors. The best way to achieve this is through a coordinated program that involves the contractor and plant operator. This helps to provide the lowest cost consistent with reliable operation. (Because the contractor does not have a vested interest in the successful operation of utility-owned projects, this teaming approach is not usually used for such projects.)
Risk/Reward Profile	
	Because private power project profitability increases with better-than-expected performance there are strong incentives for efficient operation. This contrasts with many utilities where better-than-expected performance results in lower costs to consumers but does not benefit the utility (or its employees) directly.

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underpay in later years) by imposing penalties on nonutility generators for failure to meet contract deliveries and requiring security for any overpayments by the utility.

Utilities' avoided cost policy offers concessions to the unique requirements of power privatization. These include:

- Utility power payments better match private power project expenses
- A balanced risk/reward profile where private sector profitability increase with better-than-expected performance and decreases with worse-than-expected performance
- Long-term committed power off-take at prices that offer the opportunity for private sector returns commensurate with the risks

This accommodative avoided cost policy has been to the benefit of private power developers and consumers. The policy dispels the myth of the "natural monopoly" of power generation and holds utilities to a higher standard of performance by subjecting them to competition.

This does not mean that utilities will no longer have a role in power generation, but that they will be held to new and higher standards. There will be a continuing obligation to serve the public with increasing privatization. To the extent that the required rates may be prohibitive for essential services for some customers, it may be necessary for the government to subsidize these customers or to provide a mechanism for "lifeline" rates for these essential services.

An example application of avoided cost pricing for Luzon is included in Appendix C. As discussed later, wheeling analysis is included in Appendix D, backup power analysis in Appendix E, model description in Appendix F, input data in Appendix G, and supporting output reports in Appendix H.

2.3.2 Access to the Market

The transmission system provides power producers with market access. If competition is to be encouraged it is critical to provide mechanisms for obtaining market access. At the same time, reliable operation of the system must be ensured and adequate compensation must be provided by system users to operate and expand the system. The key factors that must be addressed include:

- Establishing wheeling rates that adequately compensate the owner of the transmission system and encourage investment in transmission system additions and maintenance
- Establishing access charges for essential services such as control and dispatching facilities, backup generation facilities, maintenance crews, and engineers and operators
- Establishing priorities and contingency procedures for limiting nonessential wheeling in emergencies
- Providing indemnification from, or insurance for, damages that might result from massive failure on the grid
- Establishing procedures for engineering review of wheeling and backup power transactions to ensure orderly access to the grid

A number of solutions exist, including guaranteeing transmission access to projects exhibiting a required set of characteristics, such as "qualifying facilities" (QFs) in the U.S.; allowing power to be purchased from suppliers other than the local utility as in the U.K.; having a national transmission grid owned and operated by an entity not involved in power generation as in Spain; or a combination of the above. These are discussed in more detail below. A methodology for the development of wheeling rates in the Philippines is presented in Appendix D.

United States

Prior to the passage of PURPA in the U.S., transmission access was granted voluntarily, if at all, by the owners of the transmission facilities. PURPA created a new class of generators – the qualified facility – and gave this class certain benefits. PURPA removed utilities' authority to refuse to purchase energy from QFs by requiring that they purchase electricity from generators that meet the characteristics spelled out in the regulation implementing the law. This provided transmission access to QFs, although utilities maintained a middleman role since QFs do not directly market their power to customers.

The 1980s were a period of excess capacity for most parts of the U.S. and significant economic benefits existed for economy energy transactions between utilities. This led to a significant increase in the amount of wheeled power between traditional utilities using voluntary wheeling.

Many proponents of increased competition in the power sector are advocating greater transmission access for customers who want to

shop for power and for competitive generators who want to enlarge their market. Legislation has been introduced that would require greater access (H.R. 2224). Opponents of greater transmission access cite potential reliability problems that could arise with greater transmission access and the need for incentives to invest in transmission equipment.

United Kingdom

In the U.K., the formerly government-owned Central Electricity Generating Board and its associated area boards have been broken up into several parts to be sold to private investors. The 12 regional distribution companies were sold on the London Stock Exchange in December 1990. Two of the three generating companies will be privatized during 1991. The third company, Nuclear Electric, will continue to be owned by the government.

The regional electricity companies are obliged to offer electricity supply to all customers in their designated areas. However, they do not have the monopoly right to do so. Other suppliers, such as a generating company, another regional company, or Scottish or French companies, may purchase electricity through the new wholesale market and supply customers in a particular regional company's area. Such a supplier would pay the local company for use of its transmission wires, the charge for which must be set on a nondiscriminatory basis, so that the regional company is paid the same amount for distribution regardless of whether it does the business itself or whether the customer buys from a third party.

Spain

In Spain approximately 80 percent of the electricity is produced by 21 private companies with the remainder produced by the national utility Empresa Nacional de Electricidad, S.A. (ENDESA), which has mixed state and private ownership. ENDESA generates approximately one-third of the country's electricity, which it sells wholesale, and produces approximately 40 percent of Spanish coal.

The high voltage transmission network is owned and operated by Red Electrica de Espana (REDESA), which performs system dispatch and controls the import and export of electricity. REDESA is 50 percent owned by ENDESA, 49 percent by private utilities, and 1 percent by the government.

The dispatch of the system is presently conducted so as to meet a number of goals including maintaining a certain level of employment in the coal mining industry. This results in a dispatch

preference for local over imported coal-fired units even in instances where short-run marginal cost would dictate the opposite.

2.3.3 Cooperative Arrangements

Backup power pricing and availability is well understood by most utilities, who had to develop policies to accommodate the needs of the captive power market within their electric system. However, what had been a limited demand for backup power before 1978 grew significantly after 1978, coincident with the tremendous growth in the cogeneration and alternative energy market.

Many cogeneration projects have been structured as captive power projects, where total or partial electric power output is consumed by a single industrial host entity. Although captive power projects had been a part of most electric systems before PURPA, the post-PURPA boom in captive power was occasioned by the need of many private power developers to offer to supply power and steam to industrial host companies in return for siting privileges. (Because the genesis of PURPA was energy conservation, special treatment was accorded cogeneration projects, where steam is used sequentially for thermal and electric energy purposes.) However, host customers wanted to be protected from private power forced outages by having backup power available from the local utility. Additionally, many private power developers could improve project profitability by selling power to industrial host companies at a rate that exceeded what the utility would pay for similar power but which was less than the current industrial rate being paid by the host.

PURPA anticipated utilities' ability to limit private power market penetration through backup power supply and pricing decisions. PURPA accommodated the needs of private power developers by requiring utilities to provide backup power at just and nondiscriminatory rates. Utilities have elected to price backup services similarly to how they price other electric services. The pricing formula is contained in tariff schedules, approved by regulators, and which specify the rates, charges, rules, and conditions under which backup power is to be provided.

As with demands for firm service, backup power services reflect fixed charge costs associated with the service whether or not any power is actually provided by the utility. However, the energy component of the tariff reflects fuel and other variable costs of providing electric energy and is paid only if the utility actually makes deliveries.

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By anticipating the need for an accommodative backup power supply policy, PURPA facilitated market penetration by private power projects. A methodology for the development of backup power rates in the Philippines is presented in Appendix E.

2.3.4 Adequate Lender Security

The private power market evolved in OECD countries having well developed capital markets and legal systems that facilitated project development. Additionally, private power markets in these countries originated at a time when there was tremendous competition among banks to provide project financing with aggressive lending terms. Today's LDC private power projects originate in a much more hostile lending environment, in countries that generally must rely on offshore financing.

Financing availability is the determinant of project success, and a project structuring exercise must start with a structure that can attract the necessary financing. Even in the U.S., lenders have been retrenching as they face deteriorating balance sheets and higher capital adequacy requirements. But even in this more difficult financing environment good projects are able to attract the necessary financing by accommodating the needs of the lenders. Because a limited recourse financing looks to project cash flow rather than to creditworthiness of the borrower for ultimate loan repayment, lenders must satisfy themselves that adequate assurance of loan repayment exists under plausible downside scenarios. Because lenders provide from 70 to 90 percent of the financing for a project and because the project cannot be implemented until all the financing is in place, financiers become de facto parties to every contract agreement. Their ultimate goal is to assure themselves of loan repayment. Accommodative privatization policies that recognize lender limitations will facilitate successful project implementation.

U.S. policies accommodate lender needs by:

- Committing utilities to purchase power at predictable prices
- Modifying power payments to better match project expenses and to provide lenders more cushion against unexpected downside risks
- Requiring long-term contracts so they extend beyond the loan repayment terms
- Allowing assignment of the power sales agreement (and all other contract agreements) to the lenders, giving them the assurance that they (or their nominees) could operate the

project to generate revenues for loan repayment should the project sponsor default

- Allowing project assets to be secured by a mortgage in favor of the lenders to enable them to ultimately liquidate or otherwise dispose of the assets if needed

LDC markets pose daunting challenges for private power project developers in their efforts to raise financing, including:

- The need for cross-border financing with its attendant cross-border risk
- Limited bank capacity for country risk financing in many LDC countries
- The need to include the export credit agencies in most financing plans although they will lend on a project credit basis only under very limited circumstances (and generally won't consider taking project completion risk)
- The fact that projects generate local currency revenues but must service hard currency financing expenses
- High early year project expenses that require high early power prices

Private power policies will have to address these issues. At a minimum, policies will have to insulate investors and lenders from foreign exchange risk and guarantee the performance of the power offtaker (assuming it is a state utility). Furthermore, policies may have to accommodate the need for a limited sovereign guarantee to attract the necessary financiers to the project.

2.3.5 Balanced Risk/ Reward Profile

PURPA regulations were silent on the issue of risk and reward, although the avoided cost pricing concept implied that project developer fortunes were to rise and fall with performance in order to preserve ratepayer indifference. Another key risk/reward principle implied in PURPA was the idea of compensatory pricing, i.e., a power price that adequately compensates investors for their project risks.

Most PPAs encourage efficient performance by allocating controllable risks to the project sponsors. Allocating unmanageable risks or commercially extraordinary risks to the private sector would discourage credible project sponsors without having any positive effect on performance.

In the U.S. market, power pricing is generally divided into two components: a capacity component and an energy component. The utility commits to make fixed capacity payments for contractually committed capacity, which is presumed to be available unless proven otherwise by performance test or failure to deliver when dispatched; capacity payments continue to be made even under instances of force majeure.

Energy payments, on the other hand, are only made for kilowatt-hours delivered to the utility grid. The energy price includes fuel and other variable production costs. Since the energy price is usually developed based on expected plant heat rate and fuel heating value under assumed operating conditions, there is a strong incentive for the project sponsor to perform at least as well as contractually committed.

In general, private sector producers are penalized for failure to deliver contractually committed capacity. These penalties reflect overpayment of capacity payments if capacity payments are on a levelized basis, as well as reflecting the utility's cost to obtain replacement power in the amount of the shortfall. (Capacity is usually evaluated on a rolling average basis over a suitably long evaluation period. This allows for some variation in output without unduly penalizing the project sponsor. Shortfall penalties reflect the fact that there has been a determination that the capacity has been judged unreliable, i.e., not capacity, in the amount of the shortfall.) Punitive penalties with no basis in cost have generally been overruled by utility commissions; otherwise they would represent a commercially unacceptable risk which would preclude potential project sponsors from pursuing private power opportunities.

While there is considerable variation among utilities regarding issues of risk and reward, power sales agreements generally accommodate project sponsors' needs for an equitable return and insulate them from risks outside their control.

2.4 SUMMARY

The trend toward power sector privatization/deregulation provides elements of a program that can be applied to the Philippines. Critical to such a program are:

- Predictable pricing mechanisms
- Transmission access and mechanisms for fair compensation for transmission services

- Other cooperative arrangements, such as the provision of backup power to independent power producers
- Adequate lender security
- A balance between risk and reward for the various power sector participants

Section 3 Elements of a Power BOT Program

The paucity of operational BOT power projects is testimony to the complexity of structuring limited recourse financing involving numerous project participants in a dynamic, often contentious negotiating environment. Further complicating the process is the nature of power projects: local cost revenues must cover substantial offshore hard currency financing. Given these difficulties, few credible project developers will seriously pursue a BOT power development prospect which fails the viability test: compelling economic rationale and demonstrated financial and commercial feasibility.

Project developers approach BOT projects expecting to invest $3 to $10 million, which will be recovered only if project financing is successfully closed. Developers can then expect to invest substantially more term equity which will be recovered only if the project is successfully operated over the BOT contract term. Project developers must satisfy themselves that the probability of development success is consistent with the level of development expenditures and the rewards of successful project development are consistent with the attendant risks.

Because BOT projects involve many project participants, each with a unique perspective, a lead developer must know also what constitutes an acceptable project structure for other project participants. BOT project developers evaluate a "country BOT model," i.e., the BOT policy and program advocated by the government, for commercial and financial viability by reviewing its explicit and implicit risk allocations and contractual terms against what constitutes acceptable terms for each project participant. Because credible developers will pursue only projects that can attract other key participants, the government must build its BOT program accordingly.

This section discusses the key elements of a successful BOT project, the network of participants, the contractual documents defining their relationship, and an analysis of the perspective of each of the nonutility participants.

3.1 KEY ELEMENTS

Any project must first of all be credible. Lenders are reluctant to loan funds for LDC projects that are uneconomic or unnecessary. While a compelling economic rationale is a sufficient condition for financing and constructing many LDC project opportunities, BOT project credibility also depends on commercial and financial viability, and the development process.

3.1.1 Economic Rationale

Prudent lenders make project loans based on economic justifications, recognizing that a compelling economic rationale is the best guarantee of loan repayment. Projects that are an integral part of a country's economic program are much more likely to receive continued support in difficult situations. Project sponsors know that this also protects their interests as project shareholders. To assess economic rationale, sponsors will ask themselves these questions:

- Is there a current and continuing need for additional power?
- Will this project be given a high priority against competing needs for foreign exchange?
- Will this project produce competitively priced electricity?

If these questions can be answered in the affirmative, sponsors can feel comfortable with the prospects for continued governmental support through the operating period.

Lenders often look to standard financial measures in assessing the economic rationale of an LDC project. These include:

- **Economic Rate of Return.** This assesses the contribution that the project makes to the domestic economy. A compelling argument can be made for power development in the Philippines when the economic cost of unmet demand is factored into the analysis with its attendant multiplier effects.
- **Net Present Value of Direct Foreign Exchange Benefits.** There will be a net foreign exchange outflow from power projects, although the availability of reliable, competitively priced power may attract unrelated foreign investment.

3.1.2 Financial Feasibility

A financially viable project has the commercial structure (including government guarantees) capable of attracting the necessary amount of financing for project completion. As the size of the project increases so will the likely number of project financiers. A generic assessment of the financial feasibility of a BOT program is meaningless – each program must be assessed in view of the specific project lenders.

In today's finance-driven project environment, financeability and feasibility are almost synonymous. Financial impediments to program implementation may include country, policy, or program

limitations (these are discussed more fully in Section 3.3 on lender decision models). Financial considerations in BOT project development include:

- Power projects in LDC countries will have significant import content most likely financed by export credit agencies (ECAs). Consensus terms permit ECAs to provide financing for up to 85 percent of qualifying export content. ECAs will be the key financiers for LDC financings, their participation conditional on development of an adequate senior lender security package.
- At a minimum, the government will need to guarantee the performance of all governmental agencies, including NAPOCOR, and guarantee the availability of foreign exchange.
- ECAs traditionally lend on a sovereign credit basis and are inexperienced project credit lenders. Their participation in project financing depends on participation of other lenders (in particular IFC) and a thorough project assessment.
- Projects that do not produce a product that can be exported to earn sufficient hard currency for debt repayment present more difficult project financings, because insulating the project from country problems by placing hard currency earnings in offshore escrow accounts is impossible.
- Commercial banks or project sponsors will have to guarantee ECAs against completion risk, since ECAs are willing to take limited commercial risk (project risk), but not completion risk at this time.
- There is limited commercial bank appetite for project risk, particularly project risk in LDC countries. The project size and implied financing plan must be consistent with the available commercial bank capacity including any need to cover ECA completion exposure during construction.
- Project size must be evaluated against single bank limitations for the Philippines. Increasing the number of commercial banks involved increases the difficulty and complexity of negotiations.
- Because of the limited availability of commercial bank financing, sponsors will want assurances regarding competition with other government projects for financing.

3.1.3 Commercial Feasibility

NAPOCOR's power sales agreement and supporting government policy define the risk which must be supported by the private sector in a Philippine power BOT project. Project risks not specifically absorbed by the government reside with the project sponsors. Generally, controllable risks are allocated to the party best able to control and support those risks, and uncontrollable risks reside with the government. With this in mind, the lead project sponsor will assess the following:

- Are equity returns consistent with the overall level of risk allocated to the private sector? If the anticipated equity return is inconsistent with the level of sponsor risk, allocating risk and reward among project participants cannot improve the situation.
- Will project participants be asked to take risks well beyond those taken in the ordinary course of their business, such as guaranteeing debt service? Unprecedented, and certainly unreasonable risk, will severely limit the number of credible project sponsors.
- Is there a balanced risk/reward profile? Project participants should expect to gain as much from better-than-expected performance as they loose from worse-than-expected performance. Punitive penalty structures discourage credible project participants and have only a limited effect on performance. In the absence of competition, the risk/reward profile can be balanced by reducing the level of performance guarantees. This will work to the government's disadvantage. In a competitive project environment only inexperienced sponsors will seriously pursue this type of project.

While a project may satisfy conditions of financial and commercial viability, there must also be a reasonable prospect of bid award in light of the prevailing competition.

3.1.4 Defined Development Process

Project sponsors approach a BOT power project knowing it will require a difficult, protracted, and expensive development effort. Success depends on closing the financing which requires satisfactory conclusion of all project agreements and permit applications. A successful, timely conclusion requires an experienced development group with perseverance and financial staying power.

While the process may take 2 or more years in more readily financeable OECD countries, the process may take 2 to 5 years in LDC countries, as evidenced by the Hub River project in Pakistan and the coal-fired projects in Turkey. Developers have learned that each country represents unique challenges. Given the monumental task of implementing BOT and its attendant high risk development equity financing requirement, developers will limit serious consideration to countries that display a clear understanding of their individual BOT limitations. Policy must bridge the gap between BOT theory and BOT practice if projects are to be successful.

Because project sponsors as developers invest considerable time and considerable amounts of high risk money in developing a BOT project, they are forced to selectively pursue these opportunities. Selection of projects is generally a by-product of an assessment of country/client factors, project/policy factors and the project competition. Specific considerations include:

- Country/client relationships and perception that negotiations will be pursued in good faith
- Broad-based government support for BOT
- Country's experience implementing private power projects
- Well defined development process, especially procedures for obtaining government approvals and permits

Figure 3-1 shows the typical elements of the development process.

The next section describes the overall relationship between the various BOT project participants and a generic decision model that will be applied to individual participants later in this section.

3.2 PRIVATE SECTOR DECISION PROCESS FOR BOT

A turnkey construction project casts project participants in traditional roles: the state utility as buyer or "customer" for a power plant or "product" to be provided by the contractor or "seller." BOT projects are fundamentally different: the host country must "sell" the contractor (and other project sponsors) on the idea of investing in a project opportunity in the host country. Two distinct types of investments are involved in a typical BOT project: high risk development equity from the sponsors, recovery of which depends on successful financial close, and lower risk term equity, recovery of which depends on successful project implementation.

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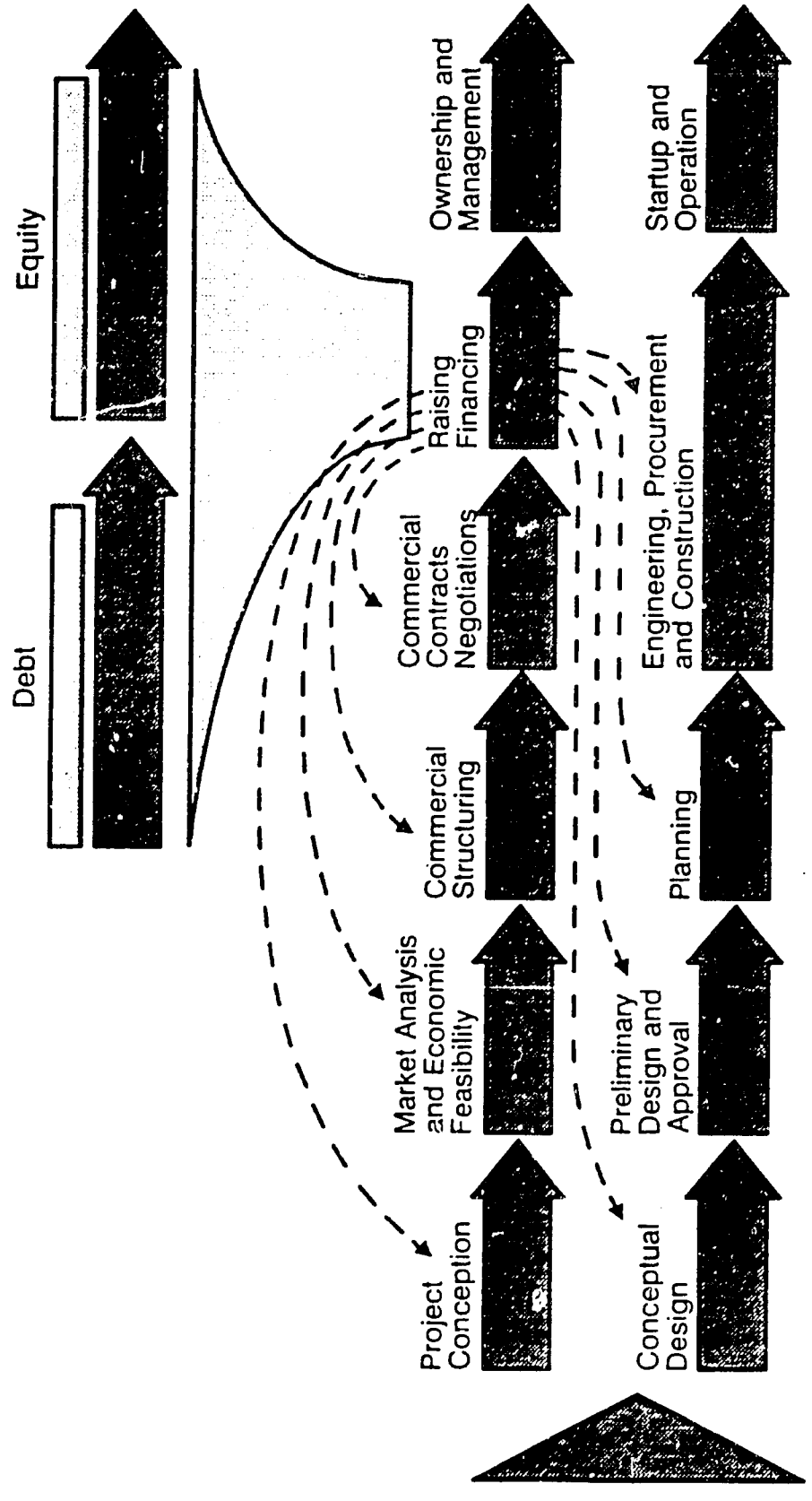

Figure 3-1 Typical Elements of the Development Process

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The government objective in the BOT program design must be to structure an attractive development opportunity for potential project sponsors. Most companies have systematic approaches for evaluating business opportunities. This approach can be formalized in an expected value model which attempts to quantify a justified level of business development expenditure in terms of its probable rewards. Expected profit is the basis for determining development expenditures and level of effort.

Companies guided by an expected value model in formulating strategy develop proposal budgets based on expected profit. This expected value model takes the following form:

Maximum Proposal Budget =
(Probability of Award) x (Expected Profit)

and

Expected Profit = $\sum$(Profit Associated with An Outcome)$_i$
x (Probability of Outcome)$_i$

For example, a contractor will develop a price for scope of services that provides adequate compensation for the perceived risk. The following simplified example calculates the contractor's expected profit as the basis for determining a price for scope of work:

Schedule	Present Value	Probability	Expected Value
1 Month Early	110.0	25.0%	27.5
On Schedule	100.0	50.0%	50.0
1 Month Delay	90.0	15.0%	13.5
2 Month Delay	80.0	5.0%	4.0
3 Month Delay	50.0	5.0%	2.5
Total		100.0%	97.5

The preceding example used a single event in isolation for its profit implications: contractor schedule guarantee. A comprehensive evaluation would use the expected value of a combination of events.

A proposal budget is prepared based on a preliminary assessment of the probability of project award and an assessment of the expected

profit. The expected value model concept is often distilled to a qualitative assessment of the attractiveness of a project opportunity based on corporate experience and knowledge.

A generalized form of the private sector decision model is shown in Figure 3-2. Key elements are described below.

3.2.1 Macro-Assessment

A macroassessment evaluates elements of a business opportunity unrelated to the specific project. In international project opportunities, country and client considerations are an integral part of any project evaluation. Philippine external constraints may be a limiting factor in eliciting significant interest in BOT opportunities.

3.2.2 Project Assessment

A project assessment includes elements of a business opportunity specific to the project proposed. These include policy and its implications for financial and commercial viability, and bid award and project development issues. Philippine policy and program design as communicated in its RFP will be the basis for conducting a project assessment.

3.2.3 Bidder Assessment

Any project opportunity must be priced in light of the competition. A competitive advantage translates into either a higher probability of award or a higher expected profit on award. Likewise, credible bidders cannot be successful against irresponsible competitors not held to commercially or financially viable terms.

3.3 BOT CONTRACTUAL DOCUMENTS

The BOT approach (and its permutations) has been developed as a limited recourse structure for financing capital projects in LDCs. The BOT model adheres to general principles of OECD limited recourse financings while addressing the limitations inherent in LDCs. As with other limited recourse financings, a special purpose project company is first established as the legal contracting entity for all project contracts under the laws of the host country. Figure 3-3 shows the key contractual documents. These are discussed below.

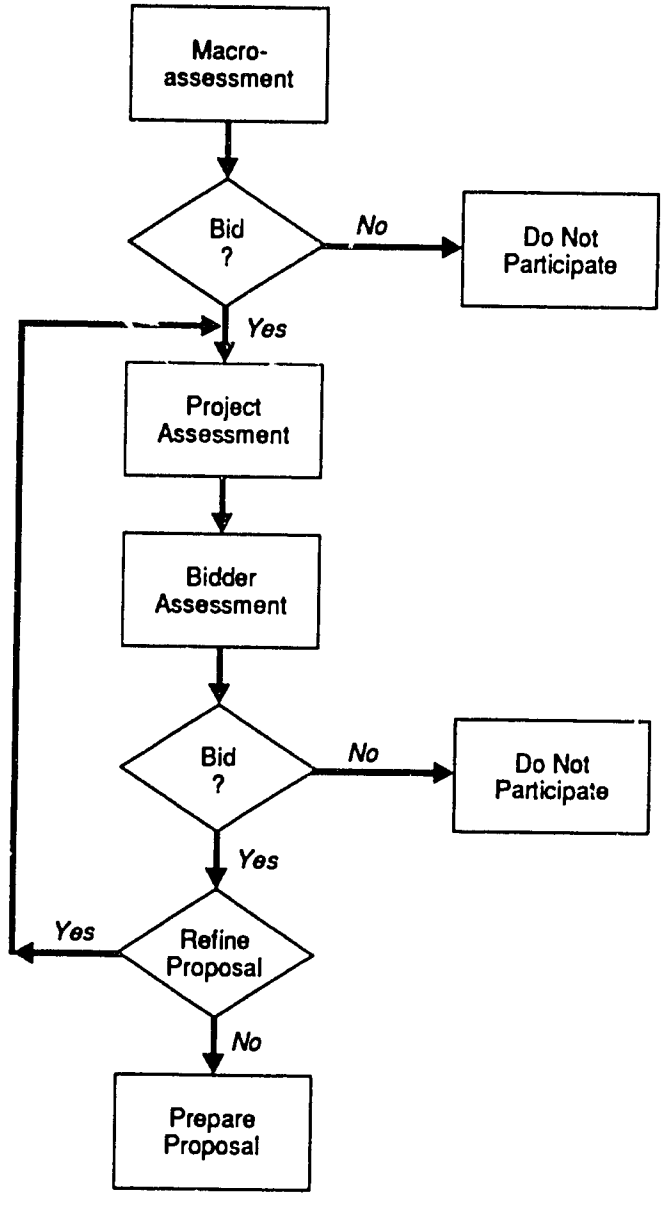

Figure 3-2 Private Sector Decision Model

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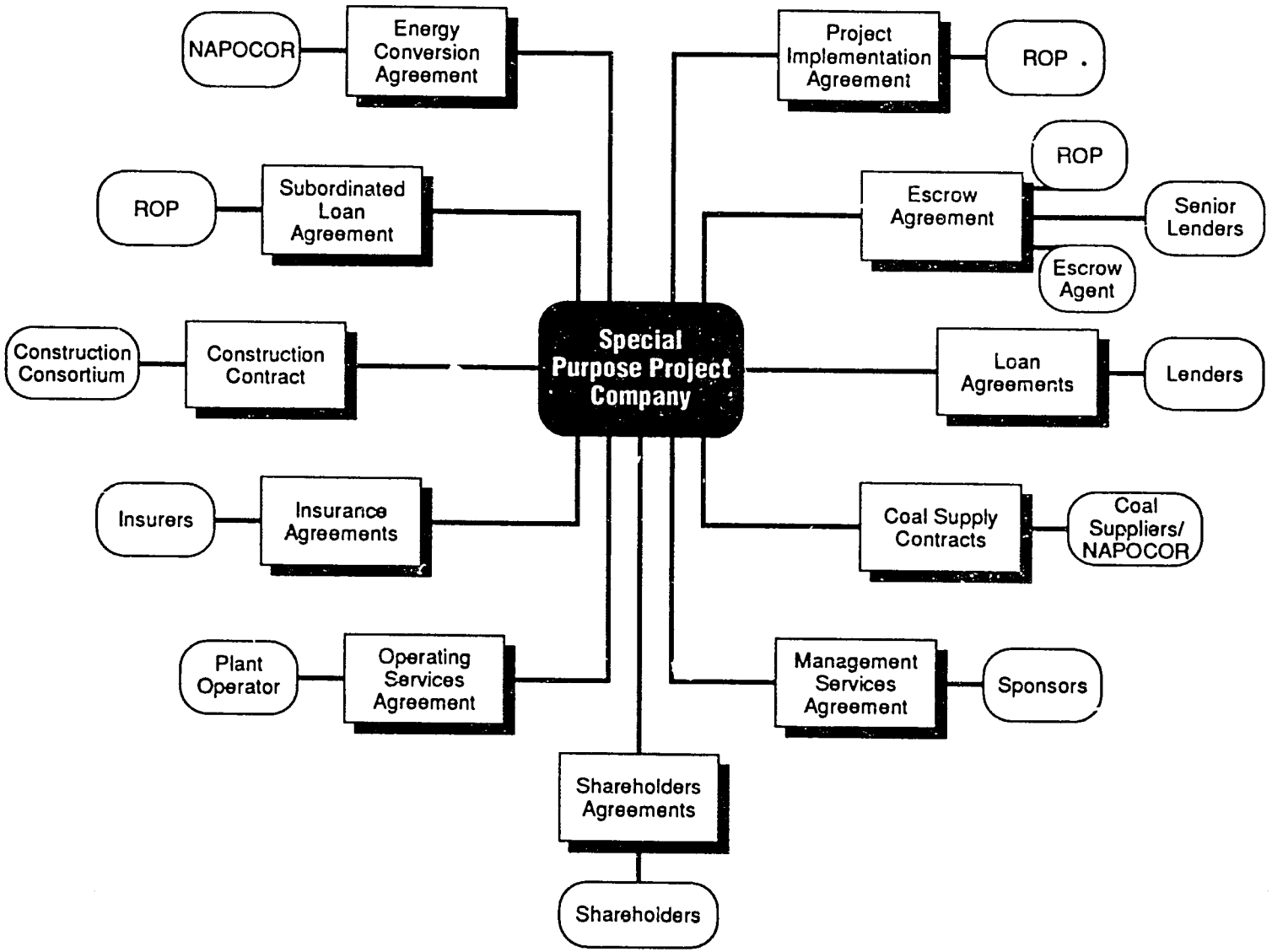

Figure 3-3 Key Contractual Documents

3.3.1 Power Sales Agreement

The power sales agreement addresses the key issue of market risk by committing the state utility to long term power off-take at predictable prices. At a minimum, the term of the agreement must equal the term of loan repayment, although banks usually request a longer term to accommodate loan restructuring. Regardless of the ultimate form the agreement takes, it must be structured to ensure adequate payments if power is available for delivery. The "take-if-available" structure protects investors and lenders.

The terms of the agreement must also insulate lenders from downside risk while providing attractive returns to project sponsors. This is generally accomplished through revenue and expense matching. As a first principle, the currencies of payments must match the currencies of expense. This requires either a commitment to pay in foreign currencies or convertibility of local currency into foreign currencies at prevailing (uncontrolled) exchange rates.

Power payments consist of fixed and variable portions. The fixed portion is structured to cover fixed charge payments including debt service (lenders may require variable rate loans be changed to fixed rate obligations), equity servicing charges, fixed O&M costs, taxes,and lender reserve payments. The variable portion is structured to cover variable operating costs including fuel costs and variable O&M (consumables).

Escalation risk is accommodated by indexing those components of the power tariff subject to escalation. To the extent that the turnkey construction contract allows cost increases/decreases (authorized change orders, interest rate changes, escalation, costs of delays beyond contractor control, etc.) these must be reflected in allowable tariff adjustments. The principle of risk/reward balance requires that investors receive an attractive return on their investment in the private power project. While a 15 to 20 percent after-tax return is deemed adequate for domestic projects, a 20 to 30 percent return may be required for projects in higher risk countries.

3.3.2 Subordinated Loan Agreement/Guarantee Agreement

In a limited recourse project structure, residual risks (which are not explicitly covered-off by other project participants) reside with project lenders. Evaluating these risks is different from evaluating the credit risk of a borrower. Many of the lenders essential to the success of limited recourse LDC financings have little or no experience in project lending.

In most LDC power project financings, export credit agencies will be the keys to financing success. Since their charter is to facilitate exports to low and middle income countries, they generally can lend on more advantageous terms than can commercial lenders, but have limited project lending experience. Hybrid credit structures have been developed to bridge the transition from project balance sheet lending to project lending.

Subordinated loan agreements provide lenders with assurance of loan repayment. A government's obligation to pay is triggered when escrowed funds are insufficient to make the next installment of debt service, for whatever reason. Government funds available in instances of sponsor default are subordinated loans that must be repaid from future sponsor equity servicing payments. Funds provided in instances of government default, force majeure, or during disputes under settlement are advances that will be absorbed by the government or passed through to consumers by way of higher power payments.

The subordinated loan mechanism of the subordinated loan agreement is in effect for a limited time, but generally gives lenders comfort during the riskier startup period. Once creditworthiness has been established through successful operation and buildup of sufficient reserves, the subordinated loan mechanism terminates.

The subordinated loan mechanism is one hybrid structure that enables export credit agencies to commit financing to BOT projects. Other approaches have included:

- The World Bank's Private Sector Energy Development Fund (PSEDF), used in Pakistan, and in which the World Bank committed to provide up to 30 percent of project financing on a subordinated basis. As with any new program, the PSEDF encountered significant difficulties in its initial application for the Hub River Project. While financial close is imminent, the approach has yet to be proven.
- A co-financing approach (International Finance Corporation [IFC], Asian Development Bank [ADB] or other) incorporating a commercial bank or sponsor guarantee of completion risk in favor of the export credit agencies. The success of this approach will depend on commercial bank capacity to book this exposure. (Sponsors will generally not provide completion guarantees exceeding what they would normally provide as liquidated damages.)

3.3.3 Construction Contract

In this type of financing, a contractor consortium makes a joint and several commitment for a lump-sum, fixed price project guaranteeing completion date and performance. It supports these guarantees with liquidated damages which may aggregate to as much as 20 percent of project cost. The contractor consortium partially absorbs completion and technology risk, since banks may be unwilling to absorb risk associated with untested technologies. Damages that exceed contractor liquidated damages are supported by investors, with residual damages borne by lenders. Because limited recourse financings are highly leveraged, banks can have a substantial residual liability in instances of contractor default. A credible, experienced contractor group is a key element in securing bank financing commitments and ensuring project success.

Construction contracts may be indexed for escalation and will provide for cost increases in instances of force majeure and government default. Allowable contract cost increases must be reflected in increases in the energy price, or be absorbed by the government.

3.3.4 Insurance Agreements

Project insurance agreements transfer risk from project investors and lenders to project insurers. Insurance may include builders all-risk insurance, comprehensive general liability insurance, business interruption insurance, employers liability insurance, investment insurance (e.g., Overseas Private Investment Corporation (OPIC), and Multilateral Insurance Guarantee Agency (MIGA)), political risk insurance, replacement value insurance and workers' compensation insurance.

Insurance must cover the full term of the power purchase agreement and when appropriate must be assignable to the lenders as security for the loans.

3.3.5 Operating Services Agreement

The plant operating agreement is an incentive-based contract tying operator compensation to plant output and efficiency. In general the operating contractor will be paid budgeted costs and a fee related to project performance. Consistent with the principle of balanced risk and reward, only the operator fee is at risk for poor operating performance. If the operator fee is inadequate to absorb cost increases from poor operating performance, then equity servicing charges will be diminished accordingly. Not only does this provide strong incentives for good operating performance, but it provides sponsor incentives for selecting an experienced plant operator.

Because technology transfer is central to the idea of BOT, the plant operator will be required to establish a comprehensive training program to permit maximum employment of local labor in plant operation.

3.3.6 Shareholders Agreement

The shareholders agreement prescribes the rights and obligations of shareholders in the project company. Introduction of private sector incentives into the public sector by giving the private sector a stake in the successful operation of public sector assets is fundamental to the BOT approach. Because equity cashflows are subordinated to all project debt service, equity investors have an incentive to control project costs and meet or exceed guaranteed performance.

This incentive mechanism can best be assured by requiring project sponsors to provide a substantial portion of the equity financing and by setting a minimum level of equity investment, e.g., the minimum level of equity financing is 15 percent and at least 60 percent of the equity will be provided by the sponsor group.

Because equity cashflows are subordinated to debt service, they protect lenders from unanticipated risks. Project lenders specify minimum debt service coverage ratios (cash available for debt service divided by the actual debt service) to test the adequacy of this cushion. The lower the equity capitalization or the lower the power pricing, the less protection for the lenders. Lenders generally require additional loan security in the form of escrow accounts that accumulate equity cashflows to a predetermined level (one year's debt service, or an amount equal to outstanding debt service).

3.3.7 Management Services Agreement

The project company requires experienced onsite managers and staff support to ensure efficient operations and real-time decisionmaking. While certain staff functions may be contracted, key managers will probably be seconded from sponsor companies to reinforce sponsor company control. Incentive-based compensation contracts will be provided for key managers consistent with the philosophy of privatization. These incentive-based contracts recognize that performance is a function of having the right people and the right incentives.

3.3.8 Fuel Supply Agreement

The fuel supply agreement is a key to mitigating project supply risk. Consistent with the concept of allocating controllable risks to those parties best able to control those risks, the contracts are generally structured on a supply-or-pay basis, with force majeure protection. In a supply-or-pay contract, the fuel supplier(s) commit to supplying fuel to agreed specifications, or to making the project company whole through cash payments. These cash payments may be compensation for additional fuel costs that the project company incurs in purchasing fuel from other suppliers, or cash compensation for deficits incurred because of the inability to deliver power.

To minimize fuel supply risk, project sponsors often diversify fuel supply among several suppliers (solid fuel) or provide for dual fuel capability. Lenders generally require the term of the fuel supply agreement to equal or exceed the term of loan repayment. Because suppliers must commit to fuel delivery, there is usually a corresponding take-or-pay obligation on the part of the project company, subject to future make-up for paid-for, but undelivered fuel.

Most long-term fuel supply contracts will have periodic contract reopeners and indexing provisions. Fuel price adjustments should be reflected in adjustments in the power tariff (the fuel portion of the tariff should be indexed and/or adjusted identically to the fuel price adjustments).

3.3.9 Loan Agreements

Loan agreements commit lenders to provide project loans under specified terms and conditions. Lenders generally provide 70 to 90 percent of project financing, which is secured through the payment provisions of the power sales agreement, equity cashflow escrow arrangements, and subordinated loan agreements and/or government guarantees which will include, at a minimum, a guarantee of the contractual performance of all government agencies. Additionally, all project assets are secured by a mortgage in favor of the lenders and all contracts are assignable to the lender.

To protect against unanticipated cost increases and ensure sufficient funds for project completion, lenders often commit to provide a standby financing facility in conjunction with equity investors (participation by some lenders, such as export credit agencies, may be limited in that their financing is tied to export content).

3.3.10 Escrow/Reserve Fund Agreement

Escrow agreements define power sales payment procedures as security for project lenders. All project revenues are paid into an offshore escrow account with subsequent payment to contractors and suppliers. The escrow agent is an offshore bank acceptable to the senior lenders. Surplus cash accumulates in the escrow account(s) up to a predetermined amount usually equal to one year's forward debt service or the outstanding principle balance. Escrow account payments in excess of the required balance are available for disbursement to project shareholders.

3.3.11 Project Implementation Agreement

The project implementation agreement (PIA) is an umbrella agreement defining project participants' mutual undertakings for project development and implementation. It includes term sheets for all project agreements and incorporates the project description, total project cost, financing plan, milestone schedule, energy tariff description, governmental obligations and form of government payment guarantee. The PIA also establishes any special treatment accorded the project including tax holidays and exemptions from import duties.

The PIA also specifies governing law and provides a mechanism for resolution of unresolvable disputes. While a PIA is not an essential project document, it ensures fundamental agreement on key terms and conditions before substantial development funds are expended in finalizing contract documents and closing the financing. The PIA constitutes a phased approach to project development ensuring agreement on key terms before project documents are final.

While many variations on the sponsor model are possible, the key precept is inviolable: tailor the commercial structure to the requirements of key project participants.

- Projects cannot proceed until all the financing is committed. Therefore, tailor the commercial structure to the needs of the lenders.
- Allocate controllable risks to the private sector and balance risks against rewards. Allocating uncontrollable risks or commercially unacceptable risks to the private sector discourages participation but does not improve performance.

3.4 NONUTILITY BOT PROJECT PARTICIPANTS

Figure 3-4 identifies key project participants for an LDC power BOT project. This discussion is limited to decision models for private sector participants. These participants include:

- Project sponsors/developers
- Project lenders
  - Commercial banks
  - Export credit agencies
  - Multilateral lenders
- Construction consortium
- Project operator
- Fuel supplier
- Insurers
- Shareholders

While government policy directly affects only project sponsors, lenders, and investors, the commercial requirements of all project participants have to be satisfied to execute the necessary BOT project contracts. Because the needs of other project participants are derivative and depend on reallocation of sponsor risks, the government must be cognizant of decision processes within these groups as well.

3.4.1 Project Sponsors

International BOT projects require companies to step beyond the traditional role of provider of project services and equipment, into the role of project developer and financier. The ability to induce participation of credible and experienced cosponsors requires an understanding of the basic tenets of limited recourse financing structures in LDC countries. Project participants must be convinced that significant investments of time and money will be repaid in project bid award and successful implementation. While each project participant conducts an individual project assessment, the project sponsor must be satisfied that the necessary financial agreements can be negotiated. The private sector decision model reflects this objective.

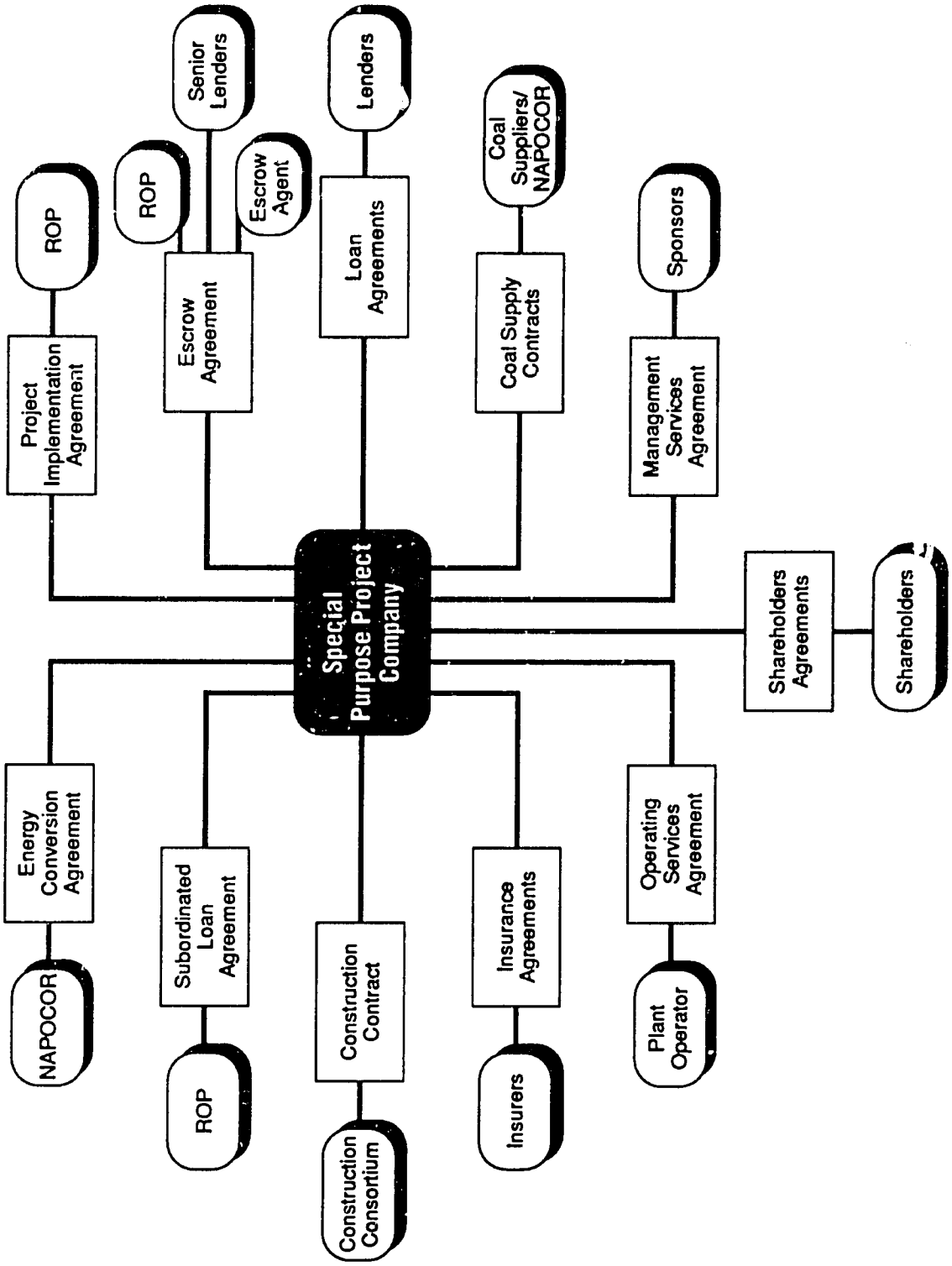

Figure 3-4 Key Participants

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Macro-Assessment

Project development is people-intensive, expensive and time consuming. The decision deserves serious consideration in its own right, and because of its effect on developer reputation and credibility.

Project sponsors may be comprised of developers, contractors, equipment suppliers, fuel suppliers, and/or project operators, each with a different BOT perspective. As a first step in evaluating an opportunity, each project sponsor must decide if private power development in the Philippines makes sense at this time. That decision will consider the following:

- What is the prevailing business and political climate and what are the prospects for future change? This assessment may be based on previous sponsor experience or may result from consultations with other sponsors or contacts. This is especially significant for BOT projects, since sponsors will be in-country for the duration of the private ownership term.
- Is there national policy that supports private sector participation in traditionally public sectors of the economy as evidenced by successful privatization efforts?
- Does the country have an open economy which permits and encourages foreign participation and ownership?
- Will projects be evaluated through a clear and objective evaluation process?
- Is there a strategic advantage for the country and region of the globe? Sponsors may view the Philippines as an opening to the private power market in Southeast Asia, projected to be one of the most dynamic global markets in the coming decades. Additionally, the Philippines may present follow-on opportunities for successful BOT project developers.
- What is the extent of existing client knowledge and relationships? A sponsor's comfort level increases as familiarity with the Philippines and NAPOCOR increases. If a member of the sponsor group knows negotiations with NAPOCOR and the government will be conducted productively, professionally, and in good faith, flaws in underlying policy or project structure may be perceived less negatively.
- Is there a strong local partner who can give the project a "local flavor?" A local partner provides local contacts,

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resources, and understanding of regulations and local customs, to the project team and can contribute to the local content of the project, reducing hard currency requirements.

- What is the nature of the project (size/technology/structure) and the match with a sponsor's experience? Project sponsors have niche markets which present them with unusually attractive business opportunities, in that there is a strong value added perception. For example, it may take a certain project size or technology (with its associated cost implications) to provide the necessary profit inducement for some sponsors. Other sponsors are more concerned with selling equipment; equipment sales may be the primary motivation.

BOT opportunities which pass this initial screening must also demonstrate reasonable prospects for successful implementation.

Project Assessment

Sponsor interest is stimulated by the right project in the right country. However, project opportunities must also be financially and commercially feasible, and likely to close financially.

Given the time and expense of international development, developers cannot afford to seriously pursue opportunities with a low probability of success. This means the project sponsor must have a reasonable expectation of successfully negotiating each contract document prior to signing loan agreements. While an experienced and capable sponsor team increases the odds of development success, policy and program constraints that hinder negotiations may discourage such sponsors from participation.

A lead sponsor formulates a proposal strategy based on its perception of BOT program viability. Problem areas such as onerous procedures for approval of permits imply increased development time and expense and decreased probability of implementation success. Projects with high probabilities of success and well defined development processes elicit more serious sponsor interest and effort.

Each sponsor must evaluate the terms and conditions pertaining to its own scope of work as contractor, equipment supplier, operator, or fuel supplier. A sponsor must also assess the entire project, focusing on:

- The proposed lender security package and the expected level of development effort required to develop the project to the

point of receiving financing commitments (as opposed to conditional expressions of interest).

- The risk/reward balance and whether risks are consistent with those normally supported in the course of business.
- The nature of the risks being allocated to the private sector. Controllable risks should be allocated to the project participant best able to control and support the risk, with uncontrollable risks residing with the government.

Bidder Assessment

BOT projects take shape in an intensely competitive and dynamic environment. A key factor in a project sponsor's bid decision must be an assessment of competition. Competition manifests itself not only in pricing, but in willingness to accept risks not specifically supported by the government.

The end product of the bidder prequalification process will be a shortlist of interested bidders. Assessment of relative competitive strengths and pricing implications begins here. The sponsor group must consider:

- Inexperienced bidders will often times accept uncommercial, unfinanceable terms and conditions to the detriment of credible bidders.
- Most experienced, credible bidders will have similar risk appetites and project perception. The competition then turns on price and performance and not on a willingness to accept difficult and unfinanceable terms.
- Since large projects require the ability to access capital from the major financial markets including the U.S., Japan, and Europe, the ability to include project participants from these countries in the project sponsor group and use their banking relationships to facilitate project financing will be a major competitive advantage.
- Sponsors must assess other bidders' willingness to "buy" the project by offering below-market pricing to facilitate a long term BOT or Philippine strategy.

Summary

The key to unlocking the promise of BOT for the power sector is to attract broad project interest from credible project sponsors. This can happen only when country BOT programs adjust to the realities of the current and specific power project environment. A viable BOT concept is a starting point – there must also be a clearly defined process for its development and implementation. Credible, experienced project sponsors will actively pursue project opportunities when:

- A country demonstrates a stable, sustained move towards private sector participation in the economy (similar to Mexico, Chile, etc.).
- There is a clearly defined process for project approval and implementation. The prospect for bureaucratic entanglements must be minimized.
- The country BOT program reflects the realities of the marketplace. BOT policy must bridge the gap between theory and practice.
- The country BOT program is built around what is financeable.
- The country BOT program adheres to basic principles of risk/reward.

3.4.2 Commercial Banks

The BOT concept as advocated by most project proponents envisions a commercial structure without direct governmental credit support and with limited support from other project participants. This "limited recourse" project structure requires banks to take "residual risks" that are not contractually allocated to other project participants. While most multilateral and bilateral lenders have traditionally lent against a sovereign guarantee of repayment, limited recourse financings look to project cash flows and project assets for repayment assurance. Therefore, limited recourse project financings are the natural domain of commercial banks that have developed extensive experience evaluating "project" credits. In today's lending environment, financing availability is the predominant limiting factor in project implementation and is predicated on banking relationships.

Macro-Assessment

As with any other lending transaction, the bank's primary objective is assurance of loan repayment. A bank determines the probability of repayment by assessing the host country, the project's credit structure, and relationship with the borrower. Relationship banking may be the key to accessing the limited financing available.

Although credit support in a project financing is through contracts with project participants and collateral from project assets, project credit assessment is inseparable from evaluation of the prevailing and projected political, economic and social conditions in a country.

While statutory single borrower limitations prescribe the maximum exposure a bank can book for a particular borrower, portfolio considerations determine the actual amount of exposure the bank is willing to book. A bank constructs an international portfolio by comparing and ranking risks among different countries and determining a prudent level of risk for each country. The portfolio approach allows a bank to diversify the country risk. Country risk also reflects an assessment of loan spreads, size of a country, strategic fit for the bank, and bank country knowledge and comfort level.

Political and social stability assessments are key determinants of country risk, including:

- The prevailing political system's demonstrated ability to accommodate change
- Adherence to traditional values supportive of authority
- Implications of regional geography on effective central authority control
- Presence of groups perceiving themselves as disadvantaged (economically, culturally or otherwise)

The economic component of country risk is primarily a country's ability to generate sufficient hard currencies to repay external loan obligations, including:

- The quality of economic management and economic policy
- The nature of a country's resource base
- The country's external financial position (balance of payments trends, external debt burden, level of international reserves, access to international finance; e.g., IMF, World Bank, regional development banks)

Industry practice is to assign a letter or numerical rating to a country consistent with the perception of relative country risk. The 1991 country risk rankings from *Euromoney* and *Institutional Investor* are included as Appendix I.

Project Assessment

Country risk considerations limit a commercial bank's country lending capacity: available capacity must be prudently deployed. Loans are made and priced based on a determination of credit risk. Project lenders generally do not take equity risk. They do not participate in the rewards of better-than-expected performance and attempt to insulate themselves from the effects of worse-than-expected performance. Because banks take the residual risks in limited recourse financings, loan repayment depends on banks' ability to identify project risks.

Section 3.3 discusses the major risk categories for a limited recourse financing and how these are contractually supported. Each contract is discussed below from the perspective of the commercial bank and what minimal contractual conditions will be required.

Power Sales Agreement (PSA). Key commercial bank concerns associated with the PSA are:

- Requires a Department of Finance (DOF) or comparable full faith and credit of the Philippines guarantee of NAPOCOR's performance under the terms of the project contracts to which it is a party.
- Provides for a committed power offtake (or payment in lieu thereof) by NAPOCOR. This may be structured in a number of ways, such as take-or-pay and pay-if-available. These methods require NAPOCOR to make payments if the project is capable of meeting its contractual delivery obligations regardless of whether NAPOCOR is capable of accepting delivery.
- Protects lenders against allowable construction cost increases. NAPOCOR approved change orders (or cost increases from force majeure events and interest rate changes) and resulting changes in project cost must result in an offsetting increase in the power tariff.
- Protects lenders from uncontrollable operating cost increases. Ideally, the power tariff is indexed and linked with underlying operating costs. The more accurate the linkage, the lower the operating margin has to be to provide the SPP and lenders adequate cushion from unexpected cost

increases. The largest component of operating cost is fuel. Because NAPOCOR generally provides fuel to the project at its cost, one of the primary sources of operating cost volatility is thereby effectively mitigated.

- Power payments are denominated in currencies of project cost or freely convertable into currencies of project cost at prevailing exchange rates.

Construction Agreement. Commercial bankers are concerned with the following features on the construction contract:

- Prescribes liquidated damages for schedule and performance shortfalls. An experienced, capable construction consortium assures lenders a project will be completed on time and budget. Contractor liquidated damages provide some additional protection to lenders but generally are limited to 15 to 25 percent of contract value. Clearly, the lenders' best protection against controllable completion risk is contractor performance.
- Commercial banks will take completion risk, unlike many international financial institutions. Key considerations in assuming this risk will be:
  - The experience of the construction consortium in building similar international projects
  - Existing banking relationships with members of the construction consortium
  - Construction consortium schedule and performance guarantees supported by liquidated damages
  - Significant equity financing which is contributed in proportion to debt financing on each loan draw
  - The availability of equity financing in the standby financing facility (this may be drawn down first if needed)
- Demonstrates that key technology has been amply demonstrated in similar applications. Technology risk will be allocated to contractors/suppliers or NAPOCOR.

Fuel Supply Agreement. Commercial banks want to be assured that adequate resources exist, although NAPOCOR or other supplier will have a supply-or-pay obligation. This goes back to the idea that the best assurances of repayment come from a properly operating project and not from supporting guarantees.

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Management Services Agreement. An experienced management team gives lenders assurance of successful operation.

Operating Services Agreement. An experienced plant operator gives lenders assurance of successful operation, and lenders will want to see an incentive-type contract that encourages efficient plant performance and high availability.

Shareholders Agreement. Commercial lenders will want to see shareholders with a sizeable stake in the project. Since equity returns are subordinated to debt service, this provides a cushion for lenders. The amount of cushion is a function of the percentage of equity, which must generally be 15 to 30 percent of total financed cost, and the target return on equity. Project sponsors will usually provide 55 to 60 percent of project equity reflecting that those parties responsible for project success have the largest equity stake in the project.

The project should present an attractive commercial opportunity for investors with an equitable and balanced allocation of risk and reward. Active shareholders will commit to fund their pro-rata share of cost overruns. This is generally not true of passive shareholders.

Insurance Agreements. A comprehensive insurance package will be required encompassing both construction and operating periods. The insurance will be assignable to the lenders as security for the loans.

Escrow/Reserve Fund Agreement. This agreement requires that an offshore escrow account be established with an international commercial bank. It stipulates that all project revenues flow through the escrow account. Because many loan covenants restrict a borrower's ability to preferentially pledge funds (as would be required in this instance), such escrow mechanisms may require existing creditor approval. From first loan drawdown, the escrow fund will at all times hold 1 year's forward debt service.

Commercial Loan Agreements. Commercial banks will require that loan agreements:

- Secure agreement by mortgage against physical assets and through assignability of project contracts
- Specify controlling body of law for resolving disputes

- Specify negative pledges and convenants which limit the government's ability to diminish lender security without prior lender approval.
- Standby financing commitment is funded jointly by commercial banks and sponsors to cover unanticipated cost increases and ensure project completion. There may be a requirement that the equity component of the standby facility be used first to meet cost overruns.

Bidder Assessment

Bank pricing may be negotiated or bid competitively. A competitive bid presupposes an oversubscribed commercial bank facility. This is unlikely to be the situation for a project financing in a difficult LDC country. In all likelihood, loan pricing and terms will adjust to accommodate the last borrower required to complete the financing.

Commercial Bank Summary

In today's finance driven project environment, NAPOCOR's BOT program design and implementation program must begin with an understanding of the financiers' perspective. In most BOT projects commercial lenders will play a significant role. NAPOCOR must select candidate BOT projects consistent with the available commercial bank capacity and further tailor the program to accommodate the minimum requirements of the lenders.

Although perceived country risk and its implications for country lending limits is beyond the immediate control of the government, there are several considerations to factor into the government BOT program design:

- Commercial bank reserve requirements may require provision for loans to projects in countries which have rescheduled their loans, making loans to these projects relatively less attractive.
- The prospects for loan repayment increase significantly if the project is perceived as a high priority for the country. A project which is not a high priority for the country and without a compelling economic rationale presents a higher risk in the eyes of the lender. NAPOCOR's BOT power projects are high priority projects with a compelling economic rationale (if one factors in the high economic cost of Philippine power shortages), increasing the appeal to lenders.
- The lower the bank lending limits, the greater the number of banks required to finance a given project. Project financing

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plans which include a large commercial bank country risk financing component are more difficult to finance, since the financing cannot be closed until the terms of the most difficult lender are met. Additionally, there may be insufficient commercial bank capacity to finance very large projects.

- Because there is a limited commercial bank capacity for country risk, the odds of success for any one project diminish if many projects are simultaneously competing for the same sources of funding. NAPOCOR's BOT program should concentrate on the sequential implementation of projects rather than simultaneous implementation, especially for the larger project financings.
- By co-financing with an international financing institution (IFI), commercial banks may reduce country risk. Because IFI participating country agreements generally exclude IFI loans from any rescheduling, commercial banks can avail themselves of the IFI "umbrella" and be accorded similar protection from reschedulings.
- Commercial banks are often more willing to participate in the country risk component of financing if they are also offered participation in an associated export credit agency guarantee facility (which represents OECD country risk and carries a zero risk rating). By offering a single London Interbank Offered Rate (LIBOR) spread for the combined facility, commercial banks effectively increase the spread on the country-risk portion making it a more attractive lending opportunity.

The Philippine government and NAPOCOR must tailor the BOT program to successfully attract the necessary commercial lenders. In addition to accommodating the minimum contractual requirements identified previously, NAPOCOR can increase the chances for successful implementation by being aware of the following:

- Lender repayment will ultimately depend on the successful implementation and operation of the BOT power project. An experienced, credible sponsor group increases the odds of project success and increases the project appeal to lenders.
- Limited finance availability means that a project will have to access financing from the major financial markets: U.S., Europe, and Japan. Financiers are most likely to provide financing in support of companies with which they have

established a banking relationship. International sponsor consortiums which can effectively tap each of the key financial markets based on existing banking relationships are the ideal approach.

- Commercial banks, through an independent consulting engineer, will assess base case project economics and downside economic scenarios. Unrealistic schedule and performance guarantees will be discounted by lenders in assessing project risk and loan repayment prospects. Unrealistic guarantees may require reduced project leverage (with higher resulting power prices) absent unconditional repayment guarantees by the government or project sponsors.
- Firm power pricing is generally not possible without firm financing commitments, although formulaic approaches which define the power price in terms of the underlying project costs are possible. NAPOCOR can limit the sponsor's ability to make unjustified price changes after the bid award by identifying the underlying costs within control of the sponsor group. Given the level of bidder effort and expense which NAPOCOR contemplates, it is unrealistic to expect firm financing commitments from bidders. Similarly, firm power price bids must be viewed with suspicion and cannot be made without significant contingency.

3.4.3 Export Credit Agencies

Export credit agencies (ECAs) were created in response to OECD countries' need to facilitate export transactions with low and middle income countries in the face of limited commercial bank appetite for country risk financing. Traditionally, the ECA role has been to provide coverage against political risk, foreign currency transfer and convertibility risk, and governmental contract frustration risk. ECAs are belated converts to the idea of limited recourse financings and project risk. However, this is changing in recognition of the essential role of ECAs in low and middle income country financings and in response to a growing demand for limited recourse financings in these countries. While many ECAs will not consider project risk, those that do prefer to join with more experienced project lenders such as the International Finance Corporation (IFC). Additionally, the presence of other lenders spreads residual project risk among other substantial project participants.

Similar to other lenders, ECAs' primary objective is loan repayment. Loan repayment is ensured by adherence to the same basic project financing tenets for commercial banks. Although country risk considerations are not as limiting a factor as for commercial banks, the lender security package is preeminent in determining financing availability.

Because ECA financing is critical to the success of LDC project financing, the requirements of ECAs must be addressed in the government's design of its BOT program. While each ECA is likely to take a unique approach to limited recourse financing, the U.S. Export-Import Bank (USXM) requirements are probably typical for those banks willing to consider limited recourse financing. The U.S. Export Import Bank decision model is presented below.

3.4.4 The Export-Import Bank of the United States (USXM)

Macro-Assessment

USXM has traditionally supported U.S. exports to LDC countries by providing either direct loans or guarantees for up to 85 percent of U.S. export content. USXM guarantees can be for either political risk only, or comprehensive risk coverage covering both commercial and political risk. USXM makes loans to creditworthy entities in countries eligible for USXM financing generally supported by a guarantee of repayment from the host government. The exposure fee or "insurance premium" for this risk coverage is a function of perceived country risk. These fees are increased for limited recourse financing structures. Currently, the exposure fee for comprehensive coverage in the Philippines is 5%. This would be increased to as much as 12% for limited recourse financing.

Because USXM has traditionally lent against guarantee of repayment, it has limited experience and staff to support the kind of evaluations required for a limited recourse financing. USXM will generally commit to a limited recourse structure only in association with other experienced lenders.

Project Assessment

While an indication of interest by USXM is a mere formality for projects in USXM eligible countries, a formal preliminary commitment is a Board-level decision requiring a preliminary information memorandum (PIM). Appendix J includes USXM's

project financing application procedure and a typical PIM which would be completed as required to obtain a formal preliminary USXM commitment for the project. As indicated in Appendix J, the project must be at a stage of development where key project participants have been identified. The contractual structure, in particular the lender security package, must also be well developed. The PIM enables USXM to assess:

- Project rationale and how the project fits in to a broader country development strategy
- Project sponsor experience
- The probability of project success
- Project risks including availability of foreign exchange (USXM has a preference for projects which generate sufficient foreign exchange to cover project requirements)
- Envisaged senior lender security package

USXM contractual concerns are analogous to those of commercial banks with exceptions as noted below.

Construction Agreement. USXM views completion risk as fundamentally different in nature and magnitude from other project risks which generally involve an assessment of project cashflows. Completion risk involves an assessment of the probability that the construction consortium will be able to complete the project within budget and schedule and will able to adequately finance cost overruns. USXM addressed completion risk in the coal-fired BOT projects in Turkey by requiring the government of Turkey to unconditionally guarantee loan repayment through the first three operating years of the project. This position has been modified somewhat for post-completion risk, but remains fundamentally unchanged during construction. USXM requires an unconditional guarantee of repayment up to project completion.

Consistent with the philosophy of BOT projects, the guarantee generally will come from the private sector, as either a sponsor or commercial bank guarantee of the ECA against completion risk, with ECAs continuing to take "political risk" during construction.

Residual completion risk is something that commercial banks regularly take for limited recourse financings in OECD countries and which should be available assuming USXM provides political risk cover. However, this generally requires an expanded commercial bank group, increasing the difficulties in successfully

closing projects. (This is why a realistic assessment of the commercial bank capacity for the Philippines is so important. The chances of a successful financial close decrease in proportion to the number of the banks in the process.)

Escrow/Reserve Fund Agreement. As a risk mitigation device in limited recourse projects, USXM prefers projects which generate sufficient hard currencies to cover project foreign exchange obligations. These types of projects will generally involve production of a saleable export product, sales revenues from which can be held in offshore escrow accounts for payment of foreign currency project costs. Projects that meet this test are "self-liquidating," i.e., generate sufficient hard currencies to pay debt service.

Power project financings are relatively less attractive to USXM given their local currency revenue stream and the need for governmental allocations of foreign currency for loan repayment. Power project limited recourse financings require a sovereign guarantee of foreign exchange availability during the debt repayment term.

Bidder Assessment. Export credit consensus guidelines limit ECAs' ability to compete on commercial terms. However, lead sponsors frequently drive ECAs to the limits of what is permissible under the guidelines by seeking multicountry procurement of the same equipment or services.

Rather than compete, many ECAs prefer cooperation with other ECAs, both to spread risk and limit competitive aspects of ECA financings. The U.S. and Japan have signed a cooperation protocol for projects requiring procurement from both countries.

Export Credit Agency Summary. The availability of ECA financing is a key determinant of the success of a limited recourse financing structure in LDC countries. Although projects with low financing requirements may be successful without ECA financing, for larger projects ECA financing will be essential. ECA financing facilitates successful BOT implementation by:

- Providing political risk coverage for participating commercial banks
- Providing a more attractive reward/risk profile as an inducement for commercial bank participation

- Providing longer loan tenors, thereby reducing the break-even power price in early project years (this makes BOT projects more palatable vis-a-vis public sector projects)

While ECA participation is not essential for successful BOT implementation (NAPOCOR's Navotas project), it is necessary for the successful implementation of larger project financings and in fact will be the key determinant of BOT success in LDC countries. Since a precondition for ECA participation will be the participation of IFC or experienced commercial project lenders, the commercial bank BOT decision model can suffice for the ECAs with the following caveats:

- Most limited recourse project financings allocate residual completion risk to lenders (after contractor liquidated damages and calls on equity standby financing). However, most ECAs will require a completion guarantee. The most likely source for this guarantee is the commercial banks (which ordinarily take this risk for OECD limited recourse financings). In the absence of a commercial bank guarantee, the government may need to provide a completion guarantee.
- While export-oriented BOT projects generate sufficient foreign exchange to liquidate project loans, this is not the case for power projects generating revenue in local currencies. This implies that the project must compete against other government foreign exchange payment obligations. At a minimum, the government will have to guarantee availability of foreign exchange over the loan repayment term as per the commercial bank BOT model.

  ECAs may impose more onerous conditions for non-foreign exchange earning projects in countries where foreign exchange availability may be a problem. The BOT security structure in Turkey that USXM proposed may be a more realistic model in these circumstances. In Tekirdag the government of Turkey provided a cash deficiency guarantee to provide funds to meet project expenses, regardless of cause, until "project creditworthiness" was reached.

3.4.5 Multilateral Lenders

The charters of multilateral financing institutions prescribe the allowable extent of participation in private sector initiatives. While most charters specify that funds be provided on a government-to-government basis, that of the International Finance Corporation (IFC) is to support private sector initiatives in furtherance of development objectives. In addition to the IFC, multilateral financiers now have programs specifically targeting the private sector. Given the long involvement of IFC in LDC private sector development and its central role in attracting bilateral lenders, the IFC decision model will be used as a proxy for other multilateral lenders.

IFC provides debt and equity financing in support of private sector development. By providing financing and advisory services, it acts as catalyst in mobilizing other private sector resources to participate in such initiatives in LDC countries. Because of its depth of experience in advising, structuring and participating in limited recourse financings, its participation in LDC limited recourse financings can induce the participation of other multilateral and bilateral lending institutions. In general, IFC limits total participation (debt and equity) to the lesser of $50 million or 25 percent of project cost (underscoring its role as catalyst).

In addition to the "comfort factor" afforded other project financiers by virtue of IFC participation, cofinancing under the IFC umbrella provides additional inducement for lender participation as protection from future reschedulings.

Of potential project lenders, IFC is likely to require the least restrictive terms, relying instead upon a detailed project appraisal report (similar to the Preliminary Project Information Memorandum in Appendix J) and commercial/financial structuring experience for assurance of loan repayment.

Project Assessment

In these roles of facilitator and catalyst, IFC's preeminent concerns are the appropriateness of the commercial and financial terms and the project's contribution to the economic development of the host country. In contrast to bilateral lenders, IFC projects must be construed as true private sector projects rather than loosely disguised government projects backed by sovereign credits. IFC's decision model incorporates the following considerations as reflected in its project appraisal report:

- Project participants and their experience in constructing and operating similar projects.
- Government private power policy and regulations
- Government foreign investment legislation
- A detailed project description:
  - Project technology
  - Project site
  - Project schedule
  - Project cost
  - Contractual arrangements
  - Fuel supply
  - Environmental considerations
- A detailed financing plan
- Energy pricing and comparison to true economic cost of Philippine power
- Financial statements and financial projections
- Economic rate of return, return to foreign capital and domestic economy, and direct foreign exchange effects

Bidder Assessment

IFC also provides financing where private sector financing might not otherwise be available. Competitive considerations generally do not enter into the lending decision.

Multilateral Lender Summary

In most LDC project financings, IFC and other multilateral private sector lenders will be critical ingredients for project success. In addition to its critical role of inducing participation by other lenders, its financing is often a critical component of the project financing plan in today's difficult project financing environment.

Although IFC's charter is to support private sector initiatives in LDC countries, its project assessment process closely parallels that of commercial banks: although not constrained by country risk considerations, its lending decisions are based on a prudent assessment and covering-off of project risk.

3.4.6 Construction Consortium

BOT Models generally cast members of the construction consortium in two roles: project contractor/supplier and project equity investor. The purpose is twofold: to provide lenders the additional comfort of an equity incentive mechanism for active project participants; and to facilitate project financing by requiring those participants which will profit from project success to provide equity as a condition of project participation. In general, the investment decision is made independent of the decision to bid, although the size of a contractor's investment will be a function of expected profitability. Once the level of investment is determined it must meet the tests of risk/reward and compare favorably to other similar investments. (Competitive pricing considerations limit a contractor from padding a bid to offset equity investment requirements.) The following discussion will develop a decision model for a contractor in the role of project builder.

Macro-Assessment

In most BOT project proposals each member of the sponsor group, including members of the construction consortium, are asked to carry their respective costs for proposal preparation. Additionally, upon bid award, each member of the sponsor group will be asked to carry a pro-rata portion of development expenditures up to financial close. Each project sponsor must assess the project's prospects for success as part of the bid/no-bid decision. Additionally each contractor must evaluate proposed commercial terms in pricing its own scope of services.

Many aspects of a contractor's macro-assessment would apply regardless of project financing. The bid decision process is initiated with the receipt of bid packages. The RFP generally requests bidders to provide a qualifications package as the basis for shortlisting bidders. Shortlisted bidders must then submit a technical and commercial proposal. Considerations for submitting a qualifications package include:

- Prevailing business climate and its implications for project success
- Country and sector strategic fit
- Local presence and/or the availability of strong local partners
- Unacceptable "deal-killer" commercial terms

If the RFP fails the initial screening, a qualifications package is not submitted for short-listing.

Project Assessment

In addition to a competitor analysis, the RFP is subjected to a preliminary commercial evaluation to assess project viability, as follows:

- Construction risk assessment and possible mitigation measures
- Contractual guarantees
  - Price
  - Schedule
  - Performance
- Rewards/penalties
  - Liquidated damages
  - Reperformance
  - Early completion bonuses
  - Maximum credible loss (corporate exposure)
- Assessment of commercial/financial viability (will be determined in conjunction with other project sponsors/financiers)

If the RFP passes this initial screening process, it is subjected to a more rigorous evaluation. Otherwise a bidder may withdraw from the bid competition or allocate a minimal proposal budget to develop a high cost, high contingency proposal (or a proposal designed to be attractive to NAPOCOR while preserving the option of raising prices during negotiations).

A formal bid price is developed as part of a comprehensive contractor risk assessment focused on quantifying risk and its implications for project profitability. The commercial terms that NAPOCOR includes in its RFP in combination with project-specific factors will determine the project risks.

In BOT power projects, competitive advantage is achieved by proposing commercial terms which decrease the cost of power, such as project cost, plant heat rate, plant availability, construction schedule (for its effect on cost escalation and interest expense). A BOT construction contract will be negotiated between the special purpose project company and the construction consortium as constrained by NAPOCOR-specified terms and conditions; e.g., schedule, liquidated damage provisions, and bond requirements or

other project guarantees as the competitive situation dictates (there is generally a performance/cost tradeoff). Pricing will always involve a tradeoff between the need to remain competitive and the need to receive adequate return for risk. However, some NAPOCOR-specified terms may be uncommercial and form the basis for a no-bid decision, such as contractor completion guarantee.

Based on an initial assessment, the contractor will develop competitive proposal terms, then calculate an expected profit based on its assessment of the probabilities for different project outcomes.

Bidder Assessment

If a qualifications package is submitted and the bidder is short-listed, the bidder must evaluate its competitive advantages against other short-listed bidders. As the number of short-listed bidders increases, a bidder's prospects for bid award decreases. The inclusion of inexperienced, irresponsible bidders decreases the chances of bid award disproportionately – inexperienced, irresponsible bidders are much more likely to propose commercially unacceptable terms (unknowingly or in anticipation of renegotiating better terms later) or artificially low construction costs. The short-listing of inexperienced, poorly qualified bidders does not foster competition as much as dissuade qualified bidders from making a serious proposal effort. The RFP must also communicate an unbiased, transparent process for evaluating bids. A bid evaluation that can be manipulated reduces the probability of bidder success.

Construction Consortium Summary

The promise of power privatization is premised on substantial private sector participants actively competing for limited project opportunities. Substantial private sector interest will only develop in response to a well conceived, positive expected-value project opportunity. The following considerations will weigh heavily in a contractor's bid/no-bid decision process:

- Country knowledge and assessment of country business climate
- Strong local partner
- Probability of bid award as determined by the structure of the prequalification process
- Predictability of bid award as evidenced by a transparent bid evaluation process
- Commercially/financially viable project based on experience with similar projects as modified for the Philippines

- Consistency with typical commercial terms and conditions
  - Contractual guarantees
  - Liquidated damages
  - Bid/performance security
- Profit potential in relationship to the complexity of a BOT project
  - The complexity of BOT means a lower probability of success
  - Project participation can only be justified on the basis of greater profitability

3.4.7 Project Operators

Unlike other project sponsors, the project operator's scope of work will be performed during the BOT private ownership phase of operation. The requires the project operator to have a somewhat longer-term perspective than other participants.

A project operator with demonstrated experience operating projects similar to the one proposed (in LDC countries) gives lenders and investors the assurance of timely debt and equity servicing payments. Hence the ability to attract an experienced operator is fundamental to project success. Because project success hinges on the operator's ability to meet or exceed guaranteed performance, it is essential that contract incentives work towards this end.

Macro-Assessment

A project operator macro-assessment focuses on several key elements:

- The project operator's technology/country experience
- The project operator's experience with NAPOCOR (given the need to interface for the BOT private ownership term)
- The operator's perception of the Philippines and whether the project opportunity is part of a broader strategic vision for plant operating services in Asia
- The operator's perception of the current and projected Philippine business climate and whether it will be conducive to meeting contractual commitments over the private ownership period

Project Assessment

Operator risk is derivative. Lenders and NAPOCOR BOT program design will determine how much risk project sponsors must support. Sponsor risk is then reallocated to the project operator. A disproportionate allocation of risk to project operators will discourage experienced operators from project participation.

Project operator responsibilities include: ensuring that operations and maintenance costs are within budget; ensuring that plant availability equals or exceeds guaranteed performance; and ensuring that plant efficiency exceeds guaranteed performance. The operator may also have responsibility for training NAPOCOR operating personnel. As an inducement in achieving contractual budget and performance objectives, the operator receives a performance-based incentive fee. In general, only the fee is at risk for cost overruns and/or poor performance. If the revenue effect of operator performance was the basis for rewarding or penalizing project operators, the fee would have to be significantly greater. Most operators would be unwilling to take such risks even in consideration of a significantly lawyer fee.

Project operators are usually given responsibility for proposing an operations and maintenance budget which covers anticipated fixed charges in providing necessary operations and maintenance services. Costs are usually indexed to cover anticipated cost escalation. Variable costs are budgeted on an indexed unit cost basis with the annual budget being a function of actual power deliveries to NAPOCOR. To the extent that NAPOCOR's power sales agreement does not permit power tariff indexing, budgeted operating costs will have to reflect this contingency and/or project sponsors will have to absorb this risk. The project operator will also pick up its proportionate share of this risk in its role as project sponsor.

Operating performance guarantees are some of the primary means of gaining competitive advantage in driving down the cost of power. The sponsor group may commit to aggressive performance guarantees: the operator must fulfill these commitments.

The decision process guiding the operator in evaluating a project opportunity includes the following:

- Does the commercial structure adhere to basic principles of risk/reward? Is the operator risk limited to loss of fee?
- Is the operator protected from events outside its control?

- If the plant is dispatchable, are the additional costs of cold starts and ramp-ups recoverable from NAPOCOR or the sponsors?
- Are budgeted operating costs indexed for escalation? Are there contract cost reopeners?
- How is extra-budget maintenance accommodated? Is there a major maintenance reserve to fund periodic overhauls? To what extent is the plant operator responsible for these costs?
- To what extent can the operator compensate for lower than guaranteed performance? Is performance measured on a periodic, e.g., 3-month rolling average, basis?
- Do contractual guarantees adjust for expected performance degradation over the contract term?

To the extent that NAPOCOR accommodates reasonable operator requirements in its BOT program, it will be able to attract the experienced, credible operators essential to a project's success.

Project Operator Summary

An experienced plant operator is a critical ingredient in obtaining project financing commitments and in project operating success. Although the plant operator is largely responsible for operating success, its limited scope generally limits its willingness to take substantial project risk. In general, a plant operator will base its decision to participate on the following:

- Perception of the country and the ability to position itself for follow-on country and regional opportunities (an existing regional plant operating contract may give it a competitive cost advantage over new entrants to the region)
- Reputation of co-sponsors and the conviction that they can work together to incorporate operating concerns in to the project design
- Assessment of the risk/reward allocation and implication for the risks which the operator will be asked to take

3.4.8 Fuel Suppliers

The primary contractual document which defines NAPOCOR's BOT program is its fuel conversion agreement; i.e., the terms and conditions that NAPOCOR proposes for conversion of government fuel to power. Although the contract envisions the government as fuel supplier, the contract permits bidders to specify alternative sources. Similar to project operators, fuel supplier risk is derivative and is dependent on what risks are allocated to project sponsors and reallocated to the fuel supplier.

Macro-Assessment

A nongovernment fuel supplier will generally be a part of the sponsor group and will commit to provide a portion of project equity commensurate with its scope of supply. The fuel supplier macro-assessment will include the following considerations:

- Strategic fit
- Fuel availability and opportunity cost associated with fuel supply to the project
- Contract term and ability to secure long-term committed project offtake

Project Assessment

BOT power projects require project sponsors to commit to a unit fuel price per kilowatt-hour delivered to the power grid. This price in turn depends on fuel availability, base delivered fuel price, escalation of the base price, and fuel heating value. Since these elements of unit fuel price are within the control of the fuel supplier, it is generally assumed the fuel supplier will absorb these risks. As additional protection, lenders may require the project sponsors to diversify fuel supply among several suppliers. A fuel supplier's project assessment will consider the following elements of risk/reward allocation:

- The fuel supplier will commit to supply fuel within agreed specifications with price adjustments for nonconforming fuel.
- Fuel pricing will be based on an indexed base price formula with reopeners.
- The contract will be on a supply-or-pay basis where the fuel supplier will be charged any incremental cost increases arising from its inability to supply.
- The fuel supplier will commit to a date certain fuel delivery.

- The project will commit to a minimum fuel payment subject to future make-up for fuel which is paid for but cannot be used by the project.

Fuel Supplier Summary

Reliable fuel supplies for the term of the power sales agreement are a prerequisite for financeability. While fuel suppliers are looking for long-term supply commitments, they also know the historic volatility in fuel prices. There can be a tremendous opportunity cost for fuel suppliers if they must sell fuel on a long-term basis at below-market prices. The competitiveness in the fuel supply market translates in to a new flexibility in structuring fuel supply agreements subject to certain minimum protections for the suppliers.

3.4.9 Insurers

Insurance provides a means for project participants to transfer risk. Knowledge of insurance availability in the Philippines is important for what it implies about project sponsors' ability to transfer risk and for what it implies for residual risk to project lenders. Unlike many project participants, insurers are able to diversify risk among many different projects. Additionally, the occurrence of an insurable event is much less catastrophic for insurers than the insured. Consequently, insurers generally price such risks lower than would the insured party if it were to retain the risk.

Lenders will generally require a comprehensive insurance package including builders all-risk insurance, comprehensive general liability insurance, business interruption insurance, employers liability insurance, replacement value insurance, and workers compensation insurance. Project investors will protect their equity investments through investment insurance similar to Overseas Private Investment Corporation (OPIC) or Multilateral Insurance Guarantee Agency (MIGA) coverage.

3.4.10 Shareholders

Shareholders' primary motivation for investing in a company is its prospects for future earnings. For BOT power projects this breaks down somewhat differently between active shareholders (generally project sponsors), and passive shareholders (not active in project development). Project sponsors also have different exposures depending on when their scope of work is performed versus when their equity is contributed to the project. For example, unlike other project sponsors, substantially all of the operator scope will be performed during the operating period. Therefore the project

operator may have a different investment perspective than other participants (operator management may view this as a riskier investment).

Macro-Assessment

Most active shareholders are not in the business of investing equity in projects: their equity investments are contingent on project award. However, investments must make sense in their own right independent of business development considerations. In general, project sponsors will allocate their equity commitment among project participants in proportion to the size of the participants' scope. While profitability might be a better way of allocating equity commitments among project participants, it is impractical to do so. Additionally, each project participant will have its own internal corporate guidelines for determining the size of equity investment it will consider. Most project participants deploy equity in existing business operations and have limited equity available for ancillary opportunities. Hence, most project participants will attempt to minimize their required investment, and will limit their risk by constraining their equity investment to some fraction of expected profit. Table 3-1 provides an example of an equity financing plan for a large international power project.

Passive investors have no business-related investment motivation. They may invest for a number of reasons including fulfillment of corporate charter (international financing institutions), fulfillment of offset or counter purchase obligations, or attractiveness of investment opportunity (primarily local investors). Project investment opportunities are unique in that they usually are single asset greenfield projects with no demonstrated operating history. Investors must rely on the contractually committed performance of project participants to realize projected equity returns. Therefore, while the financing plan may contemplate public offerings, it generally will need to be financed on an interim basis until after project completion and demonstration of successful operations.

Many governments participate in BOT financings either on a permanent or interim basis. Interim government shareholdings may subsequently be sold through private placement or public offering to local investors.

Whether passive or active, investors will require equity returns commensurate with the level of risk. Furthermore, project sponsors' ability to obtain passive equity commitments will depend

Table 3-1 Equity Financial Plan (Example from Large International Power Project)

BOT POWER PROJECT
SHARE CAPITAL PLAN

SHAREHOLDERS	SCOPE OF SUPPLY 1/	SCOPE VALUE $MM	SCOPE VALUE % 2/	Currency 3/	SHARE CAPITAL PLAN Base 4/	Standby	Total	%
Contractor	EPCM	67.5	9.12%	US$	9.2	0.9	10.1	4.58%
Turbine Generator Supplier	Turbine-Generator	121.2	16.38%	DM	16.5	1.6	18.1	8.23%
Boiler Supplier	Boiler	164.6	22.25%	US$	22.4	2.2	24.6	11.18%
Civil Contractor	Civil Works	98.2	13.27%	US$	13.3	1.3	14.7	6.67%
Trading Company	Electrical/Mechanica	190.2	25.71%	Yen	25.8	2.6	28.4	12.91%
	Contingency	60.2	-	Mix	-	-	-	-
Subtotal: Consortium Members	-	701.9	86.74%		87.1	8.7	95.8	43.57%
Coal Terminal Supplier	Terminal	98.1	13.26%	US$	13.3	1.3	14.7	6.66%
Subtotal: Construction Participants	-	800.0	100.00%		100.5	10.0	110.5	50.23%
Coal Supplier	2/3 Coal Supply			US$	18.2	1.8	20.0	9.09%
Operator	Operation			US$	3.2	0.3	3.5	1.59%
Subtotal: Sponsor Group	-				121.8	12.2	134.0	60.91%
Passive Equity (Offsets)	Nil							
Government	Nil			US$	18.2	1.8	20.0	9.09%
				US$	60.0	6.0	66.0	30.00%
Subtotal: Non-Sponsors	-				78.2	7.8	86.0	39.09%
Total Share Capital	-				200.0	20.0	220.0	100.00%

1/ Spares Allocated to T/G and Boiler

2/ Scope/(Total Scope - Contingency)

3/ At ___, 19xx New York Closing exchange rates.

4/ Coal Supplier, Plant Operator and Passive Investor Share Capital (Equity) commitments (including standby) are contractually committed amounts ($20 MM, $3.5 and $20 MM respectively). Remaining Share Capital is

on how project returns compare with those involving similar risks. The starting point for assessing the required equity returns might be equity returns for publicly traded electric utility companies. Most U.S. utilities are receiving a return on equity of about 13 percent. The return must then be adjusted for both country risk and project specific risks. U.S. energy development companies are attracting a risk premium of from 30 to 60 percent (β = 1.3 - 1.6), implying a required return on equity of 17 to 21 percent. Country risk considerations (and single asset risk) may add an additional 5 percent risk premium.

Nondollar equity returns (for nondollar equity servicing payments) will be currency dependent. Required non-dollar returns can be roughly predicted as follows, using a purchasing power parity argument (assuming a long-term investment and continuing interest rate differential) as:

(Required Dollar Equity Return) x (Non-Dollar Interest Rate)/(Dollar Interest Rate)

For example, a Yen return on equity comparable to a 30 percent Dollar return on equity would be about 30 percent x (6 percent/ 8 percent) or about 22.5 percent.

Project Assessment

Power BOT projects are complex, high risk undertakings which can only attract sufficient private sector interest if allowable power tariffs compensate investors for these risks. Project investors decisions will consider the following:

- After-tax return on equity in comparison to returns on similar investments
- Lenders will want sponsors to maintain their equity investment for the term of the loan. Sponsors will generally want a minimum private ownership period consistent with the requirements of the lenders
- Project sponsors may accept an equity return which inadequately compensates them for risks for strategic positioning or business development reasons. However, passive investors do not have these motivations and will generally not accept a below market return. Sponsors which contemplate the use of passive equity in their financing plans may have limited flexibility in accepting below market returns (multiple classes of stock may be a possibility if this is permissible in the host country).

- Equity returns should be commensurate with equity risks. If the government prescribes an unbalanced risk/reward profile or punitive risks, credible project sponsors will decline participation. An unsatisfactory risk/reward profile diminishes the prospects for development success by limiting a project's appeal to passive equity investors. Additionally, a low equity return provides an unacceptably low debt service cushion for lenders and my make the project unfinanceable without a sovereign or sponsor guarantee.

Shareholder Summary

BOT projects have traditionally been financed through a combination of loans and sponsor equity contributions. Given sponsors' profit motivation in performing work for the project, many host governments have attempted to use this as leverage in getting project sponsors to accept below market returns.

Most sponsors are not in the business of making project investments. Any investment must stand on its own merits, regardless of ancillary business motivations. While it may be possible to get some sponsors to consider below market equity returns, the prospect of below market returns becomes much more difficult when all sponsors must agree. Given the limited availability of sponsor equity, many projects include passive equity in their financing plans. Passive equity commitments will only materialize if equity returns are comparable to returns for other similar risk investments.

Sponsors' willingness to proceed with project development given below market returns is no guarantee that the project can be financed.

Section 4 A Prescription for Success

4.1 A POWER BOT FRAMEWORK

BOT power projects in LDCs are immensely difficult undertakings. For them to succeed the Philippine power BOT program must reflect limitations specific to the Philippines as well as the perspective of key project participants. A prescription for BOT success must start with a viable project concept that is effectively marketed to potential project sponsors.

A power BOT framework is a tool for program success. It should be made up of a comprehensive and consistent set of policy and program guidelines that support government BOT objectives for the power sector. Insofar as these objectives must be achieved through the actions of private sector project participants, the Philippine BOT program must reflect private sector perceptions. This Power BOT Framework is shown in Figure 4-1.

The following sections examine the implications of Philippine power sector objectives in light of external constraints and the commercial perspective of potential project participants. Based on this examination, recommended revisions to standard BOT requests for proposals (RFPs) will be made.

4.1.1 Philippine Power Sector Objectives

Private sector project participants are the agents for effecting government power privatization objectives. However, external, policy, and program constraints may not support simultaneous attainment of all objectives. A hierarchical ranking of power sector objectives provides a starting point for assessing the BOT program in the Philippines.

Power sector objectives may be categorized as primary, secondary, or tertiary. Primary objectives are broad macroeconomic sectoral objectives, such as adequate supply of power at a competitive price. Secondary objectives are utility objectives, such as diversified resource mix or system reliability and stability. Tertiary objectives include such goals as introducing more competition to the power sector or minimizing government credit support for power projects. Table 4-1 is a possible prioritization of Philippine power sector objectives. While primary and secondary objectives are naturally integrated in the power planning process, tertiary objectives must be imposed through policy and implemented through program design.

The government implementation of its BOT program must be assessed for its effect on attainment of primary and secondary objectives as well as for its consistency with external constraints. In general, NAPOCOR's RFPs should be structured to require or

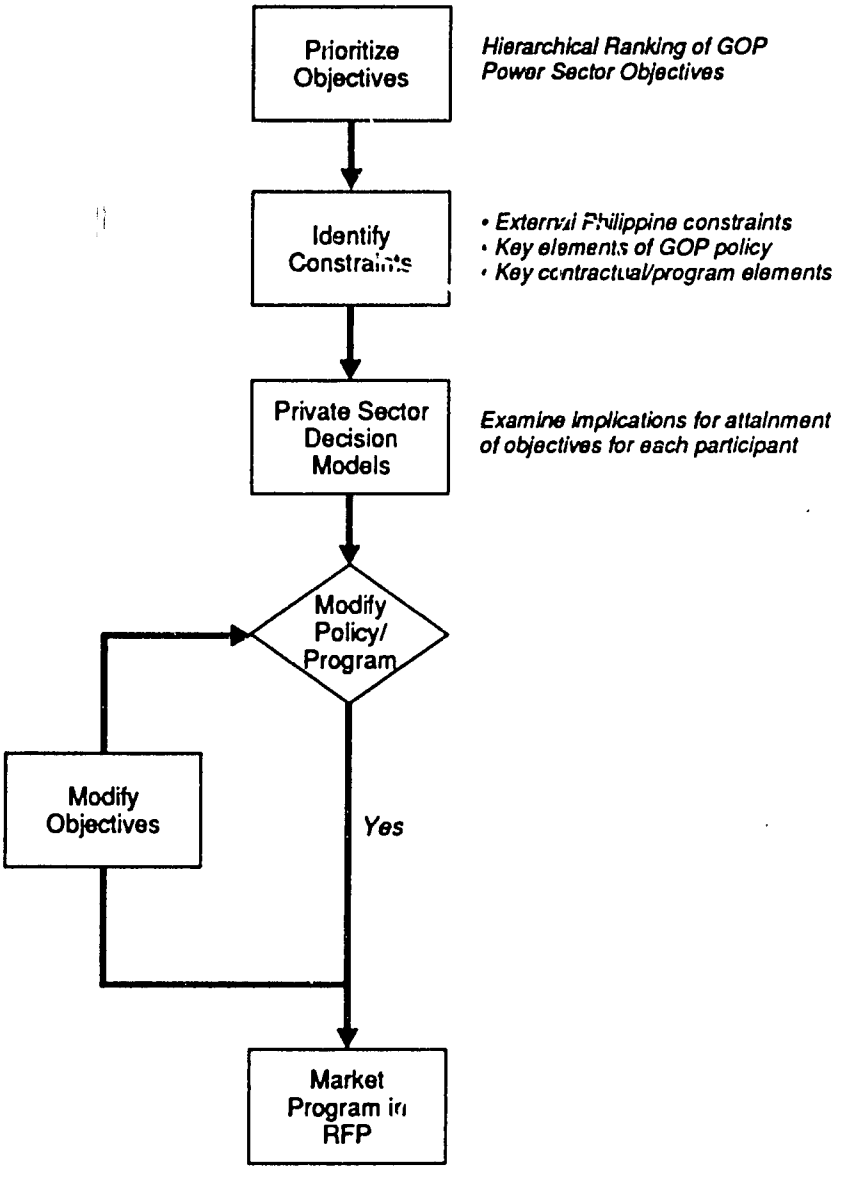

Figure 4-1 Power BOT Privatization Framework

Table 4-1
Hierarchical Ranking of Power Sector Objectives
(In Descending Order of Importance Within Each Category)

Primary Objectives	Secondary Objectives	Tertiary Objectives
1. Reliable supply	1. System stability	1. Rationalized power sector
2. Least cost power	2. Diversity of resource type	2. Competition in power generation
3. Price stability	3. Maximum use of indigenous fuels/renewable resources	3. Increase private sector participation
4. Minimum foreign exchange requirement	4. Replicability of units	4. BOT structure (limit GOP credit support)
	5. Established technology	5. Off-budget treatment for power sector
		6. Technology transfer

preferentially rank projects that satisfy primary and secondary objectives, e.g., present value power pricing not to exceed present value of NAPOCOR proxy plant power pricing or preferential bid scoring for indigenous fuel projects. If the BOT program design does not reflect the limitations imposed by external constraints, primary and secondary objectives may be compromised.

4.1.2 External Constraints

As discussed in Section 2.2, external constraints are beyond the immediate control of the government and reflect a general perception of the Philippine business and financing climate. The government must evaluate external constraints to redefine Philippine BOT objectives in terms of what is widely perceived as possible in today's project environment. This modified BOT program must then be supported with necessary accommodative policy and program design.

The Philippines is a lower middle-income country in which economic performance continues to seriously lag behind its more dynamic Southeast Asian neighbors. Recent projections forecast a modest improvement in economic performance. These projections assume a smooth transition of power following the May 1992 elections and a continuation of the economic liberalization program begun under the current administration.

In the near term, economic recovery is likely to be constrained. A projected economic recovery in the country's primary export markets and a firming of commodity prices will be offset by the constraints imposed by an IMF program on the government's ability to stimulate the economy through fiscal and monetary policies. This restraint on government borrowing, however, will result in lower corporate borrowing rates and a concomitant increase in corporate earnings.

The government will continue to incur a current account deficit which will be financed through a combination of bilateral, multilateral, and commercial bank sources (contingent on successful implementation of its IMF program). The current account deficit should decline from previous years as global economic recovery and renewed confidence in the Philippines produce higher tourism receipts and overseas worker remittances. Improving economic conditions in combination with new borrowings should permit a further build-up in the level of government reserves at a cost of slightly higher borrowings. Official reserves should be more than sufficient to cover 3 months of exports.

An implication of the IMF program may be a greater reliance on BOT and similar off-budget approaches to infrastructure development which minimize government credit support. (Power sector BOT projects also provide a means to rationalize the power sector through cost-based pricing and competition-induced efficiency improvements.) While BOT may be necessitated by limitations on new sovereign borrowings, its implementation will need to reflect the limited availability of commercial bank financing and private sector assessments of the general business climate.

The consensus of commercial banks is that the Philippines is currently a D credit, ranking in the lower middle third of country credit risk ratings (bottom 40 percent of rated countries). This ranking reflects a general perception of political instability and weak economic performance. Commercial bank capacity for new-money loans is very limited, but should improve pending a peaceful transition to the new administration in July 1992. Accessing available lending capacity will depend on the ability to package new-money commercial bank loans with export credit guarantee facilities.

Because of the limited commercial bank capacity for the Philippines, the government must limit the number of projects that are simultaneously in the market for Philippine risk financing.

(The government will need to evaluate its development program priorities and sequentially advance its projects consistent with the capacity of the market.) Having several projects, none of which can secure adequate financing commitments, ensures that no project financings will close.

By prioritizing projects within its development program, evaluating commercial bank lending capacity, and realistically limiting the number of underwriting banks, the government can develop a project structure consistent with external constraints for the Philippines.

Although the Philippines is currently viewed as a difficult place to do business in, recent positive developments (e.g., the new foreign ownership regulations and foreign exchange laws) indicate that a consensus government view may be developing that a competitive and dynamic Philippine economy requires economic liberalization. Such liberalization, however, cannot be effected in the short run. Many of the same considerations that affect banks' willingness to lend to the Philippines affect businesses willingness to pursue project development opportunities in the Philippines. The perceived lack of political stability, bureaucratic red tape, and opaque project selection process make the Philippines a relatively less attractive business environment than many of its neighboring countries. Most businesses are taking a wait-and-see attitude pending a successful transition of power following the May 1992 general elections. Assuming a peaceful transition and a continuation of its economic liberalization program, the government must address private sector concerns in designing its BOT program. Private sector concerns can be summarized as: "The Philippines is a difficult place to do business in so I cannot justify the time and expense of preparing a BOT proposal."

General business perceptions may be difficult to overcome in the short run, but it may be possible to address the key elements of the negative business perception, namely:

- The high cost of a responsive RFP
- The perception of bureaucratic red tape and its implications for a development schedule
- The perception of a bidder selection process that is susceptible to manipulation

4.1.3 Commercial Perspective: An Achievable BOT Program

The success of any BOT program must be measured by its ability to generate broad and sustained private sector participation in its implementation. By this measure, there have been no power sector BOT program successes. Many countries have not fully recognized the financial and commercial limitations of local project development in their power BOT programs. An achievable BOT program must explicitly recognize these often inherent limitations.

Commercial banks with available Philippines capacity will limit their participation to an average of about $10 million of country-risk financing. This will need to be packaged with about $30-$40 million of export credit financing to induce participation by about five to eight commercial banks (with syndication among a broader bank group). The greater the number of banks participating in loan negotiations, the more onerous the loan terms and conditions, since the terms of the most difficult lender must be accommodated. Experienced project developers know that projects requiring 10 or more underwriting banks in a difficult country are poor development prospects.

Example

Assumptions:	Maximum of five underwriting banks
	Maximum single bank Philippine capacity of $US 10 million
	Required export credit/Philippine risk gearing ratio of 4:1
Implied Structure:	5 banks @ $US 10 million Philippine risk financing = US$ 50 million
	5 banks @ $US 40 million export credit guarantee facility financing = $US 200 million
	Total commercial bank/guarantee financing = $US 250 million
	IFC @ maximum of $US 50 million
	Other multilateral @ maximum of $US 50 million

Total loans = US$ 350 million

Equity at 15% = (US$350/.85) x .15 = US$ 62 million

Total project cost = US$ 412 million

A competitive all-in price for internationally tendered pulverized coal power projects (including financing costs, reserve funds, working capital, and startup and testing) is about $1,300/kW, implying a maximum project size of about 300 MW. Since most power projects will have a high export (non-host country) content, they generally can support this level of export credit financing (limited to 85 percent of qualifying export content under OECD consensus terms).

This approach does not preclude the successful implementation of much larger projects. It simply means that most experienced project developers will regard the prospects for successful implementation as limited and will pursue other project opportunities.

Furthermore, banks will be reluctant to underwrite financing commitments with the knowledge that there will be other projects proceeding to market simultaneously with competing financing requirements. Given the tremendous need for power in the Philippines, NAPOCOR must pursue a parallel path project development approach which includes: (1) sequential development of BOT projects identified as part of NAPOCOR's resource plan, (2) development of least-cost NAPOCOR projects identified as part of its resource plan (which may be larger projects), and (3) unsolicited projects that are not part of NAPOCOR's resource plan but that commit to sell power below NAPOCOR's "avoided cost," e.g., captive power projects.

NAPOCOR's RFP (included in Appendix K) will be a performance-based RFP that enables bidders to minimize their proposal expenses by extrapolating cost data from existing projects. As such, technical specifications will be kept to a minimum, but takeoffs will need to be modified to reflect site-specific considerations. The RFP will include self-scoring worksheets that reflect NAPOCOR preferences but do not limit private sector innovation. This approach will minimize any perceived opportunity for manipulation. The government's bid evaluation and implementation milestone schedule will be included with the RFP.

4.1.4 Implications for Objectives

Redesigning the BOT program for consistency with external constraints has implications for the simultaneous attainment of government power sector objectives. Implementation of an achievable BOT program may compromise the government's primary and secondary objectives for the power sector, including least cost power and minimum foreign exchange.

Least Cost Power

The government's least cost power program may use large projects that capture scale economies to drive down the cost of power. An achievable BOT program will focus on smaller projects with higher costs of power. If the government chooses to solicit BOT bids for these larger projects, it must weigh potential benefits against the economic costs of delayed project implementation and less credible project competition. Underwriting banks will probably require higher loan spreads to facilitate a more difficult syndication effort. Rather than a least cost power program, BOT projects must strive for competitively priced power when measured against the NAPOCOR proxy plant.

Minimum Foreign Exchange

Export credit agencies will be the key financiers for most LDC BOT projects, in which participation is limited to 85 percent of qualifying export content. BOT projects with low export content, e.g., hydroelectric projects, must rely on other financing sources such as local commercial or development banks. Given the illiquidity in the local bank market, loan tenors will be short and interest rates high (20 to 30 percent). The power price needed to support the financing may not be acceptable to NAPOCOR.

4.2 THE STARTING POINT: A POLICY FRAMEWORK

External Philippine constraints prescribe what is achievable through NAPOCOR's BOT program. Achieving the achievable will require supporting policy that accommodates the requirements of private sector participants. Private sector decision models provide a means for the government to assess the implications of its policy for achieving power sector objectives.

Executive Order 215 authorized private sector participation in power generation. The nature of private sector participation was further elaborated in "Rules and Regulations to Implement Executive Order No. 215 on Private Sector Participation in Power Generation". A discussion of government BOT policy issues follows.

4.2.1 Guarantees or Assistance

Policy

The government will provide no financial guarantees or assistance to private sector projects.

Objective

An objective of the BOT project structure is to minimize or eliminate sovereign credit support for those major infrastructure and development projects which can be undertaken by the private sector. Sovereign credit capacity will be preserved for those sectors and programs that cannot attract private sector interest.

Implications

In a limited recourse project structure, lenders look to project cash flows and the contractual undertakings of project participants for guarantee of loan repayment. Primary security for the lenders is the BOT Energy Conversion Agreement between NAPOCOR and the project sponsors. Credit support for the project is through NAPOCOR's commitment to make power payments. Since NAPOCOR is a state utility whose rates are determined by the GOP, GOP ultimately controls NAPOCOR's ability to fulfill its contractual commitments to make power payments. A financially and commercially viable project will require that the government guarantee NAPOCOR's (and other state entities') contractual commitments.

Because the ECAs will be essential to project success, their requirements will have to be accommodated by the government. As previously mentioned, some ECAs will consider participating in a limited recourse financing but will not generally assume completion risk. ECAs will require a guarantee of completion by either commercial lenders or project sponsors. Project sponsors will generally not furnish guarantees above what they would furnish in support of their participation in a turnkey, sovereign credit project structure – generally 15 to 25 percent of contract value. Therefore, commercial banks will generally be required to guarantee ECAs against completion risk, with ECAs providing the corresponding political risk cover. Because this is higher risk lending than traditional export credit guarantee financing, it may be more difficult to induce bank participation.

A pure limited recourse financing structure involving ECAs is more problematic. ECAs are reluctant and inexperienced limited recourse financiers. When contemplating limited recourse financings they have a decided preference for projects that generate export earnings, which can be placed in offshore escrow accounts to provide additional assurance of debt repayment. Furthermore, ECAs will not formally commit to provide financing for a project without a preliminary PIM that speaks to key elements of project rationale, feasibility, and lender security. (IFC, in its capacity as project financial advisor, is currently preparing a PIM as the basis for securing financing commitments for the Paglibao project.)

Because this is relatively new territory for most ECAs, the government must realize that much time and effort may be spent on securing their participation without any assurance of success. This may discourage credible project developers from pursuing these projects since there is a high probability of a long and expensive development period in what is already perceived as a difficult business climate.

Recommendations

At a minimum, the government's BOT program must offer a sovereign guarantee of the performance of state entities. Such a guarantee was provided in support of the Navotas project and will be required for any other project. This should be formalized in the RFP and should not have to be agreed to on an ad hoc basis for each project.

To get its BOT program off the ground, the government should employ a hybrid credit structure which provides limited sovereign guarantees. This may involve an unconditional guarantee of project completion, thereby facilitating the participation of ECAs and thereafter a guarantee of NAPOCOR's performance. This guarantee mechanism could be limited, for example, to the first 1,500 MW of block power facilities.

The Paglibao project will test the government's BOT concept. Unfortunately, the lessons of Paglibao will be learned too late to permit modifications of current BOT projects that are going out to bid.

4.2.2 Legal and Regulatory Status

Policy

Private sector power generation companies will be governed by Philippine corporate law and be subject to current corporate regulations, including taxation, duties, and foreign ownership limitations (except as otherwise exempted under pioneer investment incentive legislation).

- Foreign ownership may be up to 100 percent except as otherwise restricted for certain protected industries where it is limited to 40 percent.
- A project that is granted "pioneer status" may be relieved from import and customs duties and granted a tax holiday for a period of 6 years.

Objective

The test of an industry's suitability for privatization is its ability to compete without special protections and incentives. Many OECD private power programs are similarly structured, requiring only that the utility guarantee to make power purchases at rates that do not penalize consumers.

Implications

Private power project sponsors condition their equity financing commitments upon award of a proportionate piece of project scope. In the absence of strong local partners which can provide their share of equity financing, local ownership will most likely be through passive equity investments. It is generally difficult to secure passive equity financing commitments prior to project completion and a demonstration of operating success.

Private power offers the promise of competitively priced, efficiently produced power with limited sovereign credit support. However, the public perception may be much different when private power projects are subjected to duties and taxes to which comparable NAPOCOR projects are not. Any duties and taxes paid by the private sector will be passed through to NAPOCOR in higher required power payments thus increasing NAPOCOR's average cost of power.

Recommendations

BOT regulations as communicated in NAPOCOR's RFP should clearly identify any local ownership requirement. This should not depend upon obtaining pioneer status or other special project exemptions. Any local ownership requirement should be held through the government. The government's equity can be subsequently sold in the local equity markets after the project establishes an operating history.

Project taxes and duties result in higher required power prices for power consumers. Since taxes and duties are passed through to NAPOCOR in capacity charges (which are independent of how the project is dispatched), taxes and duties have no implications for NAPOCOR economic dispatch. However, as with most new programs, it is critical to build public support. Higher power prices undermine this objective . Therefore, initial BOT power should be granted pioneer status and exempted from duties and taxes through the first 6 operating years. (It is possible that higher operating availabilities and efficiencies would offset the higher costs of private sector financing and duties and taxes. However, until program success is established and public support is assured, BOT projects should be put on no less favorable terms than comparable NAPOCOR projects.)

4.2.3 Categorization of Projects

Policy

Projects will be categorized as either "block power production facilities" (identified by NAPOCOR as part of its resource plan) or "cogeneration and renewable resource power production facilities." Cogeneration and renewable facilities will be further categorized as "mini-private sector generation facilities" with capacities of less than 1,000 kW.

- Accreditation of block power production facilities will require that they produce power more cheaply than the comparable NAPOCOR plant. The timetable for accreditation will be on a case-by-case basis as reasonably required by NAPOCOR
- Cogeneration and renewable resource facilities accreditation will be contingent on a demonstration of net foreign exchange savings as compared to the same level of power generation from a NAPOCOR plant. Such savings may be from more efficient or cheaper power generation, use of

renewable or indigenous fuels or lower plant costs. The timetable for accreditation of cogeneration and renewable resource facilities and minifacilities will be 3 months and 1 month respectively, contingent upon presenting a complete application with all necessarily governmental approvals.

Objectives

The U.S. private power market serves as a model for many countries with similar objectives for encouraging broad private sector participation in power generation. U.S. regulations require only that utilities purchase power at prices that are no greater than the prices from competing utility projects. At the inception of the U.S. private power market, utilities calculated and published avoided cost prices that would be paid to private power developers. This has evolved to a competitive bid process where a block of power is put to bid and credible bid prices determine the de facto avoided cost. Because utilities are in a position to control the course and success of the development process, many utilities have established milestone schedules for requisite utility project evaluation and approvals.

Implications

Historically, U.S. private power project developers have been constrained by the relative scarcity of project opportunities and not by financing availability (although U.S. projects are now having to contend with a retrenchment in the commercial bank project financing market). In LDCs, financing capacity is far more limited. This limited financing availability implies that there must be a more ordered and controlled process of project development in order for NAPOCOR to have any assurance of project implementation success.

This policy also implies that NAPOCOR envisions an active cogeneration and renewable resource facility market. This presupposes a scale of project that can attract international developers and/or an active local developer market (which developers do not have to incur the tremendous expense of international project development). These project will be competing with block power production facilities for financing and create confusion as to which projects will be given priority in the project development and contract negotiation process.

Avoided cost and proxy plant power pricing set limits on what NAPOCOR will be willing to pay private power project developers for power generation. Presumably, NAPOCOR could build an identical or alternative plant itself and generate power at these prices

– to the extent that NAPOCOR pays higher prices, power consumers are disadvantaged. However, avoided cost or proxy plant prices must be true measures of what it would cost NAPOCOR to produce the same power, i.e., it must reflect actual costs, efficiencies, and availabilities. The avoided costs should be adjusted to reflect taxes and duties that are not paid by NAPOCOR but that are paid by the private power project. (Presumably the taxes could be rebated back to NAPOCOR to offset the cost of these taxes in the private power prices if the government does not want to disadvantage consumers and does not want to provide special tax breaks to private sector project developers.)

The development risk associated with international BOT development is one of the major factors in limiting the participation of credible private sector developers. Establishing a timetable for project accreditation is a necessary first step in quantifying this risk. However, a general statement about approval times for accreditation is unlikely to dispel private sector skepticism unless it is accompanied by a more fully developed government/NAPOCOR milestone schedule establishing a timetable and sequence of events for the bid evaluation, award and implementation periods.

Recommendations

Although the government's BOT program permits unsolicited proposals for cogeneration and renewable resource facilities there seems to be relatively little interest in these projects. This is probably because the requirements of international private power development in LDC countries are inconsistent with this approach. The limited availability of bank financing and the time and expense of international power development require that projects be proposed and developed sequentially. This means that block power production facilities should be pursued to the exclusion of other opportunities. However, captive power development with the sale of excess power into the grid may appeal to international developers and local industrial companies (similar to what was being proposed by Caltex). It may be possible to develop these projects in parallel with block facility development, assuming the availability of sufficient NAPOCOR negotiators.

All RFPs should include a schedule of avoided cost or proxy plant power prices which set a ceiling on what NAPOCOR will pay for power. These prices must include taxes and duties to the extent that they are paid by the private sector and not by NAPOCOR. NAPOCOR should work with a consultant (possibly on a retainer basis) to develop proxy plant prices for its block power production

facilities. These prices will be included in the RFP to prevent a repeat of the Paglibao (San Juan Batangas) process in which considerable delays arose because of concerns about the competitiveness of the proposal. Power pricing proposals will be required to be less than or equal to the avoided cost or proxy plant cost on a present-value basis. The discount rate for determining this will be provided.

NAPOCOR's RFP must clearly identify a process for pre-qualifying, evaluating, awarding, and implementing private generation projects. This should be communicated in a GOP milestone schedule, which identifies a timetable for bid award. NAPOCOR should also commit to work with the project sponsors to develop a milestone development schedule which identifies GOP approvals and actions required for project implementation (with a commitment to share additional costs which arise from their actions or failures to act).

Geothermal power projects are likely to be the only renewable resource projects with much private sector appeal. (Recall that financing may constrain the appeal of hydroelectric projects in addition to growing environmental and human concerns. Other renewable projects are unlikely to have much broad private sector appeal because of scale and power pricing concerns.) Because geothermal projects are replicable (on a modular basis), it should be possible to develop a streamlined process for their evaluation and approval including all permitting. This should be included in a special geothermal RFP. Minimizing development uncertainty is critical if NAPOCOR wants to attract credible developers and maintain competitively priced geothermal power. This is especially true for smaller project sizes.

4.2.4 Approval Conditions

Policy

Block power production facility approval will be conditioned on a review of the sponsor's application, including a complete project description and feasibility study supporting the sponsor approach.

Objective

The government envisions block power production facilities as larger and more complex developments prospects for which commercial and financial viability cannot be assumed without a supporting feasibility study. A feasibility study will also be required by financiers as a precondition to formal loan commitments.

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Implications

ECAs and other financiers will require a feasibility study in support of a formal financing commitment. However, most project sponsors will not commit to this kind of expenditure until after bid award. The government will have to accept that proposed financing plans may be revised after award unless it is willing to commission the kind of feasibility study that can support firm financing commitments. The IFC Project Appraisal Report for the Paglibao Project is a useful model of what financiers will expect.

To date, the proposals NAPOCOR has received in response to its BOT RFP process have not incorporated formal financing commitments and term sheets calling into question the evaluation process and award process. In the Turkey coal-fired BOT projects, a commercial and technical feasibility study (under Trade and Development Program [TDP] grant) established a financeable project structure which formed the basis for soliciting bids.

Recommendations

The government correctly acknowledges the significance of a commercial and technical feasibility study as the basis for undertaking international BOT projects. However, it is unlikely that project sponsors will take on the expense of this study absent project award (as was the case for the Paglibao project). Furthermore, sponsors who undertake such a study before award have no guarantee that it will not form the basis for restructuring the project for commercial and financial feasibility for award to another bidder.

The government's best approach is to commission a commercial and technical feasibility study as the basis for creating a commercially and financially viable project structure that can be communicated to bidders by means of the RFP. Alternatively, the government can require that sponsor groups retain a financial advisor who will attest to its ability to raise the necessary financing for the project as described in the proposal financing plan.

4.2.5 Backup Power and Wheeling Services

Policy

NAPOCOR must provide backup power and wheeling services at nondiscriminatory and agreed-upon rates if these services do not compromise system reliability and service.

Objective

The motivation for the U.S. PURPA legislation was to encourage energy conservation through the higher efficiencies promised by cogeneration projects. Many projects were designed to provide the industrial host company all or a portion of its electric power demand. Unless utilities offered to provide backup power, so much redundancy would have to be built into the cogeneration project to ensure adequate reliability for the industrial processes that projects would no longer be economic. The rules implementing PURPA required that utilities provide backup power on a nondiscriminatory basis.

The need for wheeling services arises because some project opportunities are situated in low-avoided-cost areas but can economically transmit power to adjacent areas with higher avoided costs. When a utility provides backup power, it facilitates the development of projects that will benefit local industrial companies and consumers. This is not the case with wheeling transactions. Unless wheeling charges fully compensate the wheeling utility, the wheeling utility's consumers are subsidizing the utility to which the power is being wheeled.

Implications

The availability of backup power at predictable prices is important for the widespread development of captive power and cogeneration projects. As previously stated, the near-term prospects for an active cogeneration market are limited. The prospects for captive power projects are much better. Their development will require a supportive backup power policy.

A wheeling methodology and policy implies that project developers and the government can receive value for undertaking the wheeling transaction. For developers this may come as either better power pricing or better prospects for development success. The government must weigh these potential advantages against possible disadvantages, including competition between projects for limited financing availability, and lack of appearance of a coordinated and cohesive BOT program.

Recommendations

A backup power methodology and tariff is primarily of concern to those project sponsors who are proposing to supply industrial companies with all or a portion of their electric demand and for captive power projects. The development of many of these projects

may ultimately benefit the Philippines. The benefits of wheeling are less clear, but there may be instances where an established methodology and tariff facilitates development of beneficial projects.

NAPOCOR should develop wheeling and backup power methodologies as a basis for encouraging those projects that promise economic benefit to the Philippines and which do not undermine its exiting BOT program.

4.2.6 Environmental Standards

Policy

Private power projects will comply with all applicable environmental standards.

Background

Most private power programs make project approval conditional on compliance with all environmental standards. Experience has shown that this is often the most difficult aspect of project development, in which time and expense exacerbate an already difficult process. The permitting process often gives the appearance of an impenetrable bureaucratic maze whose sole purpose is to frustrate project developers. In recognition of this, many U.S. utilities have developed environmental permitting guidebooks to walk developers through the permitting process within their service territories.

Implications

A difficult and undecipherable environmental permitting process increases the probability of development failure. Project sponsors factor this permitting process into the expected value model in determining whether to bid and the level of bid effort. Compounding the difficulties of an unclear permitting process is a general perception that the Philippines is a difficult business environment. A project developer can invest considerable time and expense to find out that permits cannot be secured within a reasonable time frame.

Recommendations

NAPOCOR should develop an environmental permitting section which is included in its RFP. This would help developers quantify the time and expense of obtaining necessary environmental permits. For block power production facilities, NAPOCOR should include as much of the site-specific permitting process as possible in its RFP.

4.2.7 Force Majeure

Policy

Neither party will be deemed in default if it fails to perform in instances of force majeure.

Background

Force majeure events are those events that are beyond the reasonable control of either party; hence, many private power sales agreements relieve both parties from performance obligations in instances of force majeure.

Implications

Force majeure events generally do not relieve project owners from their obligations to make debt service and payroll payments. If reserve funds are insufficient to cover payments under these circumstances, projects owners will be in default to the lenders.

Many international project sponsors argue that power consumers continue to make payments (for capacity) to a utility for plants idled by force majeure events and that privately owned plants should receive similar treatment. Additionally, withholding payment during force majeure events cannot have any influence on operating performance since these events are admittedly beyond the operators control. Refusing to make payments during force majeure events may make international projects unfinanceable and commercially unattractive to credible project sponsors.

Recommendations

NAPOCOR should provide force majeure protection (beyond what is coverable through insurance) to project sponsors similar to what was offered in the Navotas BOT project. The Navotas Energy Conversion Agreement required NAPOCOR to continue to make capacity payments in instances of force majeure.

NAPOCOR's BOT program is contained in its "BOT Energy Conversion Agreement." This program includes the elements described below.

4.2.8 25-Year Cooperation Period

Policy

Projects will commit to a 25-year cooperation period subsequent to which the project will be transferred to NAPOCOR.

Objective

A primary motivation for BOT projects is to encourage greater efficiency in the power sector by committing private sector operators to project operation under a performance incentive contract structure. A 25-year cooperation period ensures NAPOCOR that projects are designed for performance over a reasonable useful life. Additionally, a long cooperation period allows for somewhat lower early year power pricing as equity payments are spread over a longer period.

Implications

BOT project sponsors include members of the construction consortium, fuel suppliers (if the fuel is supplied by the private sector), and plant operators each with somewhat different motivations in the project. In general, the construction consortium and fuel supplier will have the largest project scope and the largest equity investment. However, only the fuel supplier and plant operator will have a long-term motivation for involvement with the project. By specifying a 25-year cooperation period, which greatly exceeds that required by the lenders, the construction consortium (whose members are likely to include the lead project sponsor) is less inclined to bid on the project.

An excessively long cooperation period has limited effect on plant performance. The same performance objectives could conceivably be met by renegotiating the plant operating services contract prior to the end of the cooperation period.

Recommendations

At this stage of its development, the objective of NAPOCOR's BOT program should be to establish its credibility. This can only happen if the program is structured to appeal to a majority of credible project sponsors. In this regard, the cooperation period should be reduced to what is required by lenders, but no more than 15 years.

4.2.9 Power Pricing Structure

Policy

NAPOCOR's power pricing structure includes a capacity payment comprised of a capital cost portion, a fixed operations and maintenance portion, and a return on equity portion. An energy payment covers efficiency-induced increases/decreases in fuel consumption and consumables and an infrastructure fee to cover costs associated with related project facilities (e.g. coal unloading terminal). Capacity costs and the infrastructure fee are fixed over

the contract term. The energy payment is fixed on a $/kWhr basis over the contract term.

Objective

U.S. private projects are generally financed long-term through commercial bank or bond financing, which provides for a relatively constant fixed charge structure over time. Because NAPOCOR projects are generally financed long-term from multilateral, bilateral, and internal sources its fixed charge payments are also generally constant over time. NAPOCOR's capacity pricing formula tries to enforce a similar structure on private sector plants. Power pricing volatility is primarily attributable to fuel price changes. By providing for fuel cost pass-through for private power projects, NAPOCOR removes substantial volatility from power pricing. Because the private sector is not taking fuel pricing risk, NAPOCOR can allocate other operating cost escalation risks to the private sector.

Implications

Unlike NAPOCOR projects, private sector projects are financed through a combination of sources including commercial bank financing (5-year tenor), export credit financing (12-year tenor), multilateral financing (generally 12+ year tenor), and equity. This reliance on multiple financing sources implies a variable capacity price over the debt repayment term. Similarly, fixed operating costs and variable consumable costs vary on a year-by-year basis with the underlying labor and materials costs. A BOT project presumably involves a transition from expatriate labor to local labor over the course of the cooperation period. Requiring fixed prices over the term of the cooperation period has two effects: bidders include substantial contingency in their pricing, and equity payments are heavily loaded in the later contract years. The net effect is a much higher present value of power payments for NAPOCOR.

The back-end loaded equity payment structure provides limited cushion to lenders in the early high-risk years of project operation. Low early-year debt service coverage ratios have implications for financeability and may require credit enhancement through additional guarantees and/or reserve funds.

Recommendations

Project sponsors should specify power pricing on a year-by-year basis by component. Capacity pricing will be comprised of a debt service component that varies with debt service payments, an indexed fixed operations and maintenance component, and an equity

servicing component (variable or fixed) to cover return of and on equity and taxes. The energy payment will consist of an indexed $/kWhr payment.

NAPOCOR will publish the prices for its proxy plant, which may set a ceiling (on a present value basis) for payments made to private sector project sponsors. The prices will reflect projected operating experience for NAPOCOR based on historical operating experience.

4.2.10 Forced Outages

Policy

A forced outage day is any day when the plant fails to deliver at least 95 percent of its nominated capacity for more than 30 minutes when so requested by the NAPOCOR system dispatcher. Capacity payments are adjusted downward for any outage days and the plant is further penalized if the monthly capacity delivery on average is less than 95 percent of the contract capacity. Capacity payments are reduced in proportion to the number of forced outage days and there is a further 20 percent penalty if the plant is unable to fulfill its contractual commitments for the month. Capacity pricing is contractually committed and paid on a $/kW-month basis. If project sponsors expect that they will not be able to provide their contractually committed capacity they may nominate a reduced level of capacity for delivery. Although payments will be reduced to reflect the lower capacity, there will not be a corresponding 20 percent penalty.

Objective

By committing to long-term power purchases from the private sector, NAPOCOR is able to include those projects in its resource plan. To the extent that a project cannot reliably produce power, it does not constitute firm capacity and should be derated accordingly. Penalties generally are either for inability to deliver on a short-term basis due to forced outage or for continuous inability to deliver contractually committed energy (in which the plant is derated and capacity payments adjusted accordingly). NAPOCOR's penalty provisions cover both types of penalties.

Implications

Basic principles of BOT risk and reward include the fact that controllable risks are allocated to the project participant best able to control and support the risks, with uncontrollable risks supported by the government; the penalty/bonus mechanism provides an incentive

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for efficient operation; and rewards are commensurate with risks. The NAPOCOR risk/reward structure provides no incentive for better-than-expected performance but potentially substantial penalties for worse-than-expected performance. Project sponsors can compensate for the lack of upside by either specifying (to the extent possible in light of the competition) a lower contractual availability or a higher required capacity price. Under the current contract structure this contingency pricing works to NAPOCOR's detriment, since once availability and pricing are contractually committed there is no incentive for better-than-expected performance.

Recommendations

NAPOCOR's incentive mechanism should be revised to accommodate some variability in performance while still holding project sponsors to contractually committed performance. Additionally, incentives should be provided for better-than-expected performance. This may be accomplished by calculating payment on a 3-month rolling average basis. Contractual capacity payments can be made for performance within 5 percent of contractually committed performance (5 percent deadband whose capacity payments do not vary with performance) with payments varying linearly outside the deadband.

4.2.11 Milestone Schedule

Policy

Project sponsors must commit to a milestone schedule based on the effectivity date of the BOT energy conversion agreement. Liquidated damages will be paid to NAPOCOR for failure to achieve project milestones. NAPOCOR may unilaterally rescind the contract and require sponsor reimbursement of NAPOCOR's out-of-pocket costs if unsatisfactory project progress is being made.

Objective

Unlike the U.S. private power program, which requested proposals for incremental power generation, the NAPOCOR program asks bidders to propose on base-load power projects which have been identified as part of NAPOCOR's generation resource plan. Given the urgent need for new power generation in the Philippines, NAPOCOR must take all steps to ensure successful project development and project implementation.

Implications

BOT projects are inherently complex and low probability development prospects, whose success depends on a viable project concept, an experienced project sponsor group, and full government support and cooperation. Contract terms that may be unilaterally (and arbitrarily) enforced by NAPOCOR are problematic for project sponsors.

Developers' perspectives tend to be the reverse of utilities: lack of progress is likely to be caused by utility actions or failures to act. While the economic cost of development delays is high for the Philippines, the cost to developers of a protracted development in the Philippines is proportionately higher. The date of contract signing for the BOT Energy Conversion Agreement generally signifies the start of development; successful conclusion at financial close requires negotiation of all project contracts. Most experienced project sponsors know that the course of project development is almost impossible to predict. Penalizing "poor" development progress only discourages experienced developers from pursuing Philippine projects. NAPOCOR's best protection against development delays is an experienced project sponsor and a well defined and viable project structure.

Recommendations

NAPOCOR must retain the right to rescind its contract if a project sponsor fails to make satisfactory progress. However, requiring project sponsors to reimburse NAPOCOR for out-of-pocket expenses serves no purpose other than to discourage credible project sponsors from pursuing Philippines BOT work. NAPOCOR should eliminate this clause from its BOT Energy Conversion Agreement.

4.2.12 Bonding Requirements

Policy

NAPOCOR requires successful bidders to post a $100/kW performance bond which converts to a $66/kW operations performance bond. The bond may be called in instances of abandonment.

However, the present value of power payments is required to be no greater than present value of payments at avoided cost pricing over the contract term. Project sponsors generally provide some security against future recovery of early year overpayments.

Implications

Most private power projects do not require bonding beyond what is required in support of the proposal as sponsor equity investments provide an adequate incentive against abandonment. Excessive bonding requirements discourage experienced project sponsors from participating in the proposal process but have little effect on performance. Experienced sponsors view excessive bonding as a simplistic approach to weeding out inexperienced, low credibility sponsors.

Recommendations

Project bonding requirements should be limited to proposal bonding in the amount of $15/kW.

4.2.13 Disputes

Policy

Project disputes that cannot be resolved within 3 months will be submitted to arbitration.

Objective

A "win-win" project structure encourages all contracting parties to work together for project success. When disputes arise and cannot be resolved they will be submitted to a panel of experts for resolution.

Implications

Arbitration is the preferred method for ensuring equitable and expeditious resolution of disputes. However, final settlement may not be for several months, which could have serious consequences for project sponsors' ability to continue contractual payments. Lenders will require that payments be continued during pending disputes and/or that sufficient project reserve funds be present from the start of commercial operations. Since these funds will need to be present from the start of operations they will have to be financed at the end of the construction period. This will increase the amount of commercial bank financing/equity required for a project.

Recommendations

The government has to guarantee continuing payment during disputes. In the case of government default, including disruption of fuel supply, the government must assure lenders that project sponsors can continue to meet their project payment obligations.

4.2.14 Policy Summary

Regardless of its final form, the Philippines power privatization program must be viewed by the private sector as an internal set of policy and program guidelines consistent with external constraints. Because private power projects have implications that extend beyond that of mere power supply, policy and program formulation must reflect a consensus view among government agencies.

4.3 A CONSENSUS PROGRAM STRUCTURE

Privatization has been touted as a panacea. Therefore, each government agency tends to approach BOT with a different and sometimes conflicting motivation: the Department of Finance may view BOT as freeing sovereign borrowing capacity; the Office of Energy Affairs may view it as a means of increasing power generation efficiency; NAPOCOR may view it as an expedient to alleviating serious power shortages. Compartmentalized policymaking in which each government agency develops policy in isolation from other agencies may impede the privatization process and lead to uncontrolled program redefinition during project negotiations. At best this is an inefficient process and at worst one that drives away credible private sector interest.

To remedy this problem, the government must authorize a program audit conducted by a broad-based working group comprised of representatives from NAPOCOR, the Department of Finance, the National Economic and Development Authority, and the Office of Energy Affairs. Special advisors will be used as needed including representatives from the Department of Environment and Natural Resources and the private sector. Private sector advisors would include an external financial advisor (experienced in international limited recourse financings and privatizations) and an international contractor/ developer (experienced in international development) to provide private sector perspective. The end result of the audit will be a consensus power privatization program communicated through a consistent and cohesive set of government policies and program design that advances government objectives for the power sector.

This consensus program is the starting point for an effective marketing campaign through a NAPOCOR redesign of requests for proposals.

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4.4 REQUEST FOR PROPOSALS REDESIGN: A MARKETING APPROACH

Requests for proposals are used to communicate opportunities to potential project participants. In combination with macro-assessments they form the basis for participant perceptions of the government's privatization program. This perception has significant impact on bid/no-bid decisions regardless of the actual intent of RFP terms and conditions. A vague and ambiguous RFP intended as a "fishing expedition" for favorable private sector proposals is most likely to discourage interest. Similarly, an over-specified request for technical proposals is likely to represent a high cost proposal exercise that generally cannot be justified unless there is a correspondingly high probability of bid award and implementation success.

To date, NAPOCOR requests have been over-specified technical proposals reflecting NAPOCOR's preference for a certain level of consistency and standardization among plants. The detailed technical specifications have been in contrast to an incompletely developed commercial concept, implying a lack of familiarity with the commercial aspects of private power. The net effect of this RFP structure is an expensive proposal exercise with limited prospects for successful implementation. This generally means potential sponsors do not bid on the project.

An effective marketing document must start with an understanding of the private sector decision process so that the RFP can be tailored to address private sector concerns. Recommendations for improved RFPs include:

- RFPs need to communicate a well defined prequalification process with an objective of selecting three to four credible, experienced project sponsors who will submit project proposals.
- RFPs need to communicate the supporting policy framework, especially the availability of government guarantees and any special incentives. Withholding special incentives when in all likelihood they will be a necessary ingredient for project success forces project delays while these incentives are negotiated and approved after award and may discourage broader private sector bidding participation.
- RFPs need to make it clear what risks will be assumed by NAPOCOR and the government and what risks will be assumed by private sector participants.

- If NAPOCOR specifies a risk allocation, it should specify the level (e.g., aggregate liability cap on contractor liquidated damages of 20 percent of contract value).
- RFPs must include transparent, well-defined processes for evaluating proposals and awarding and negotiating contracts.
- Bid evaluation should employ a forced ranking system (included in the RFP). The forced ranking system may provide for bidder options but will clearly indicate the evaluation implications of each option by indicating how points will be assigned to each option. Ceiling prices should be included to form the basis for accepting or rejecting proposals. Information about the NAPOCOR power system necessary to formulate pricing strategies needs to be included.
- RFPs need to be focused on a single established technology, a single commercial approach, and a single site.
- RFPs need to define the government approval and permitting process.
- RFPs should clearly describe the environmental permitting process: the nature of all permits, required supporting documentation and/or site monitoring, and permitting schedule. Since these projects are included in NAPOCOR's resource plan it may make sense for NAPOCOR to do as much of the up-front work as possible, failure to do so will generally mean either less private sector interest or more pricing contingency.

A modified RFP containing many of the suggested improvements is included as Appendix K. Appendices L and M provide examples from U.S. private power programs for comparison. An examination of the Mindanao RFP process is included in Appendix N.

Section 5 Recommendations

5.1 A RECOMMENDED PROGRAM STRUCTURE

Although government policy suggests its objective is a dynamic private power industry in which there are many active and credible private sector participants competing with NAPOCOR to supply Philippine power demand, external constraints argue for a gradual transition to this ideal. The transition would require a phased program concentrating on the development of high-priority projects identified in NAPOCOR's resource plan and industrial power (captive power) projects that primarily provide power for their industrial host company, but can also sell excess power to the NAPOCOR grid. Key considerations in designing a successful private power program structure are:

- The government's BOT program should be implemented in a coordinated manner by prioritizing projects in different sectors such as roads, ports, and power projects. Sequential implementation will provide lenders and sponsors assurance that the necessary commercial bank financing can be secured for projects.
- NAPOCOR's power program should concentrate on those projects identified as part of its resource plan and captive power projects.
- NAPOCOR's resource plan should be implemented through the parallel development of NAPOCOR owned and operated projects, NAPOCOR owned and privately operated projects (BTO) and privately owned and operated projects (BOT/BOO).
- NAPOCOR should work with other government agencies to develop power sector objectives.
- The piecemeal privatization of NAPOCOR through the sale of its existing power projects is unlikely to appeal to the private sector unless NAPOCOR's best projects are offered for sale. This may leave NAPOCOR with a collection of old, inefficient, high cost plants.
- If the private sector is to operate existing power projects, its participation should be on a management contract or similar basis that requires limited initial investment by the private sector and provides strong incentives for improving plant performance.

5.2 REQUIRED POLICY MODIFICATIONS

To achieve the government's power sector objectives may require modifications to existing policy, including:

- In addition to guaranteeing the availability of foreign exchange, the government should guarantee the performance of all governmental entities that are parties to private power contracts.
- The government should provide limited credit support to the project, including a guarantee of project completion. Cost overruns should be financed from a project standby financing facility and thereafter by the government. The power tariff would be adjusted upward to the extent that cost overruns were attributable to force majeure or government default. The power tariff would not be adjusted in instances of project sponsor default (a portion of power revenues would repay the government and sponsor equity cash flows be decreased accordingly).
- The government should guarantee to make power payments when disputes are pending and during instances of force majeure (including fuel supply interruptions if NAPOCOR is supplying fuel).
- The government should authorize the limited use of debt/equity swaps to facilitate the development of a private power market. Debt/equity swaps should be limited to a prespecified percentage of project capitalization.
- The government and NAPOCOR would commit to a milestone schedule for providing necessary approvals and government scope of services. The government's scope should include fuel supply (up to the project boundary or as otherwise specified in the RFP if NAPOCOR is the fuel supplier), utilities (up to the project boundary or as otherwise agreed in the RFP), and facilitating necessary permitting (since these projects are identified in NAPOCOR's resource plan).
- Until NAPOCOR's BOT program is well established, BOT power projects should be designated pioneer status and so communicated in RFPs. This status entitles the project to exemptions from certain import duties and taxes and was granted to the Navotas project.

5.3 REQUIRED PROGRAM MODIFICATIONS

A number of modifications to the existing program are required to achieve continuing success in implementing power BOT projects. These are:

- NAPOCOR should develop a ceiling price for power purchases from projects identified in its RFPs. This ceiling price would reflect NAPOCOR's cost of power if it was to build and operate a plant itself (as reasonably modified to reflect differences in taxes and duties).
- NAPOCOR should develop prices and policies that accommodate the development of captive power in its electric service territory, including a standard power purchase contract and power pricing; backup power methodologies. Wheeling methodology and rates should be developed in anticipation of the next phase of program development.
- Proposal/operating bonding requirements should be limited to what is reasonable and consistent with commercial standards.
- Power pricing should be tailored to the underlying cost structure. This would ensure that pricing contingencies are minimized and that NAPOCOR receives the lowest present value power pricing over the cooperation period. Under this structure, capacity payments would consist of a debt service component that varies as a function of periodic debt service, a level equity servicing component, and variable operations and maintenance components. The proposed level of these charges would be supported by appropriate bidder exhibits included in the bidders' proposal.
- There should be a balanced risk/reward profile with equity cash flows increasing or decreasing proportionately with performance above or below a defined performance band (which would also be structured so as to preserve a balance in risk and reward). Additionally, performance should be paid for on a rolling average basis with average performance over a 3-month period being the basis for compensation.
- Project sponsors and the government should jointly commit to a development milestone schedule. The government should share the cost of additional expenses reasonably attributable to its actions or failures to act.
- NAPOCOR's RFP should communicate its prequalification process. Three or four prequalified bidders would be

identified. Proposals should be subjected to a force ranking system that allocates points to different aspects of a proposal, consistent with NAPOCOR and government preferences. The evaluation would be self-scoring (subject to NAPOCOR verification and supporting documentation) and included in the RFP package.

- NAPOCOR should publish a schedule for bidding, bid evaluation, and contract negotiation.

A viable, cohesive power privatization program can then be communicated in redesigned RFPs that include:

- A clear statement of all government BOT policies in support of this project.
- A statement that all projects conforming to the consensus BOT model will be deemed to be preapproved, subject to satisfactory agreement of the BOT Energy Conversion Agreement.
- The permitting process standardized to the extent possible and any site-specific or project-specific permitting communicated in the RFP. Permitting requirements should be no more onerous than those for public sector projects (World Bank or other appropriate standards).
- Technical specifications that are performance-based, which will facilitate lower cost, credible proposals.
- Project evaluation that is systematic and transparent. A forced ranking evaluation methodology should be included in the RFP.

5.4 POWER BOT PROGRAM IMPLEMENTATION

Regardless of its final form, the Philippines power privatization program must be an internally consistent set of policy and program guidelines consistent with external constraints. Because private power projects have implications that extend beyond that of power supply, policy and program formulation must reflect a consensus view of government agencies.

As a first step in developing an effective private power program, the government must create a power privatization working group: the Private Power Policy Group. This group will consist of senior representatives from NAPOCOR, the Department of Finance, the National Economic and Development Authority, and the Office of Energy Affairs to design an achievable program. Special advisors will be used as needed, including representatives from the Department of Environment and Natural Resources and the private

sector. Private sector advisors will provide an essential private sector perspective and should include an external financial advisor and others experienced in power project development.

Once this Private Power Policy Group is established, it will need to take the following steps to develop an achievable program:

- Develop objectives for the power sector to guide the Power Policy Group in assessing the effectiveness of private power policy and program design.
- Assess the current power program for its ability to satisfy power sector objectives.
- Compare the current Philippines program with competing programs in ASEAN and with other developing programs. The Philippines program must be at least as attractive (and probably more attractive) than competing programs.
- Recommend policy and program modifications as required to attract wider private sector participation in furtherance of power sector objectives. Recommended policy modifications will be submitted to the appropriate governmental agency for legislative consideration and action.
- Modify NAPOCOR's request for proposals to incorporate recommended program changes, and other changes that do not require policy modifications.
- The Policy Group will reconvene as required to assess the effects of policy modifications and incorporate them in the RFP.

In parallel with the above process, actions can be taken to improve NAPOCOR's effectiveness in implementing the existing program. Similar to most utilities, NAPOCOR has been organized to effectively carry out its primary functions: power generation, power transmission and power distribution. While this structure can accommodate private power development on an ad hoc basis, the implementation of a widespread private power program will require an organization which facilitates this objective. NAPOCOR's private power program should be implemented on the following basis:

- A reconstituted private power group within NAPOCOR will be responsible for implementing the government's private power program. It will be comprised of three subgroups under the direction of a senior vice president, who will be accountable to the NAPOCOR board of directors. The

private power groups will be: a contracts group responsible for developing and modifying standard private power contracts in support of NAPOCOR private power initiatives; a commercial group, having primary responsibility for obtaining necessary NAPOCOR project approvals, proposal evaluation and contract negotiations; and an environmental/ permitting group, responsible for developing permitting requirements for private power projects (this group may be a specially designated team with DENR, or a NAPOCOR team designated to work with a private power team within DENR).

- Privately owned and operated projects should be structured as either BOT/BOO projects or captive power projects.
- NAPOCOR's BOT/BOO program should concentrate on projects with total costs in the range of $150 to $300 million. Larger projects can continue to be implemented on an ad hoc basis; smaller projects usually cannot justify the level of development effort and expense required for BOT/BOO projects.

Many Southeast Asian nations are embracing the promise of power privatization. While the Philippines has generally been at the forefront of this movement, its program will will have to compare favorably with those in neighboring countries if it is to have any hope of successfully attracting limited development capital. To regain program momentum and reestablish program credibility NAPOCOR must assume a proactive role and market its "new" program to potential private sector participants.

A revamped program, actively marketed to the private sector, is the required catalyst to revitalize the power sector in the Philippines.