PRINCIPAL FEATURES OF LONG TERM POWER PURCHASE AGREEMENTS

by

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Abstract

Power Purchase Agreement is an agreement describing the terms and conditions of power sale and purchase between the power purchaser (Utility) and the Independent Power Producer (Project Company) in a private-invested power project. This agreement is the key agreement among many agreements that constitute a power project financed on limited-recourse or non-recourse principles.

This article discusses the structure and the main features of long term agreements for power purchases, usually used for independent power projects financed by international lenders and equity investors.

1.0 Introduction

Finances for Sri Lankan electricity sector were traditionally available from international lending institutions and bi-lateral or multi-lateral agencies by the means of loans on very concessionary terms. With the recent shift of these donors' focus from electricity sector to other priority sectors such as health and education, it is feared that these traditional sources of infrastructure finance may not be willing to provide capital, in sufficient quantities, for electricity infrastructure development. Then, there are new demands for capital from the newly liberated economies and many emerging economies. Intense pressure is also brought on the governments of the developing countries by the same traditional donor agencies to privatize or to allow private participation in state-run electricity utilities.

The other option available to a developing country is to raise the finances through their own balance sheets. e.g: Direct loans, Suppliers' Credit etc. However, the capacity of a Utitity of a developing country is often inadequate to finance the projected shortfalls of generating capacity, by such means. In this background, many developing countries such as Sri Lanka are forced to look for investments in power sector through non-conventional or innovative financing mechanisms. Independent Power Producers' participation in electricity generation is widely pursued by governments of many developing countries as an alternative to raising investment capital on their own and private financing is sought through Build, Own Operate & Transfer (BOOT) or Build, Operate & Own (BOO) approaches.

Under the principles of limited-recourse or non-recourse financing (also known as Project Finance), the Project Company is a company created specially for a particular project. This Project Company has no assets other than the project and its revenue stream. Therefore, the lenders' recourse will only be limited to those assets, and will have no recourse to any other assets of the in dividual partners of the Project Company. As discussed in this article, the Power Purchase Agreement is a key element in such project formulations.

2.0 Design of the Structure of the power Purchase Agreement

A Power Purchase Agreement is best designed to operate by itself between the parties in an equitable manner. This is achieved through the mechanisms of incentives and penalties, built into the agreement, thus avoiding resort to other proceedings such as dispute resolution or arbitration. Design of the features of the agreement is primarily dependent on the project ownership structure, the methods adopted by the Project Company for recovery of its costs, and allocation of project-related risks.

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2.1 Project Ownership

Responsibilities of building and operating the project and determination of the ownership of the project assets during project implementation and operation phases are usually determined at the stage of project solicitation. If the economic life of the plant is considerably longer than the tenure term of the agreement, the Utility would seek the transfer of the ownership of the assets at the end of the term, so that it could use the plant for the remainder of the plant life. This is usually the case for hydro or coal-fired power plant. There are several commonly used ownership structures such as:

BOT : Build-Own-Transfer
BOOT : Build-Own-Operate-Transfer
BOO : Build-Own-Operate
BLT : Build-Lease-Transfer

Depending on the ownership structure envisaged, there may be specific interests of the parties, which are required to be included in to the agreement.

2.2 Cost Recovery

In an independent power project, the Project Company is made responsible for raising the capital, construction of the plant, subsequent operation and maintenance of it throughout the term of the agreement. The Project Company expects to recover all costs and expenses involved in the process, through the revenue earned during the operation period. In addition to the recovery of the expenditure, the Project Company also expects a reasonable return to its equity investors. Among all agreements linked to the Project Company, (Figure 1) the Power Purchase Agreement is the only agreement that creates a revenue stream for the Company. Therefore, the Project Company will solely be dependent on the Power Purchase Agreement for recovery of its costs and expenses through the tariff.

Owing to obviously contrasting interests, the Utility, the Government and the Project Company need to engage in exhaustive negotiations to resolve the allocation of various risks and costs of the project implementation and operation. Any expenses of the Project Company, which neither the Utility nor the Government is willing to accept, will result in lowering of the margins of returns to the equity investors of the Project Company, if the tariff is to remain at the same level.

2.3 Term

The term of the agreement should be sufficiently long enough to recover the capital costs of the project, while meeting the operation & maintenance costs and generating sufficient returns to the equity investors. For power projects of this nature, the term of the agreement could range from 15 years to 25 years, in order to maintain a tariff reasonably acceptable to the Utility.

It is essential that duration of contract term and the renewal options are clearly defined in the agreement. However, the parties may be obligated to extend the agreement due to certain types of Force Majeure events, in order to preserve the projected revenue streams. The events that lead to the termination of the agreement should also be defined in unambiguous terms, and the rights of each party in such event of termination shall also to be agreed upon.

2.4 Risk Allocation

Power Purchase Agreement could be considered in a broad sense as a description of allocation of various risks associated with the Project. The parties need to identify the risks in each phase of the term and to reach an agreement in undertaking or sharing of the risks so identified. Main risks involved in an independent power project and possible allocations of those risks are as shown in the Table 1. It is emphasised that the risks are to be allocated in an equitable manner to the party who is best equipped to mitigate such risks.

3.0 Phases of Project Implementation

During the term of any of the Power Purchase Agreements, several distinct phases of project implementation are identifiable (Figure 2). The obligations of each of the parties and the remedial measures for non-fulfilment of such obligations are specified in relation to the particular phase concerned. Such distinct phases within the term of the agreement could be:

- Preliminary Obligations Period
- Construction Period
- Operation Period
- Final Period

The dates for beginning and for end of these phases shall be clearly defined. These dates would usually establish some of the milestone dates within the agreement.

3. 1 Financial Close

Financial Close is achieved on the date when all Project Agreements related to the project, such as the Power Purchase Agreement, Implementation Agreement, Construction Contracts, Equipment

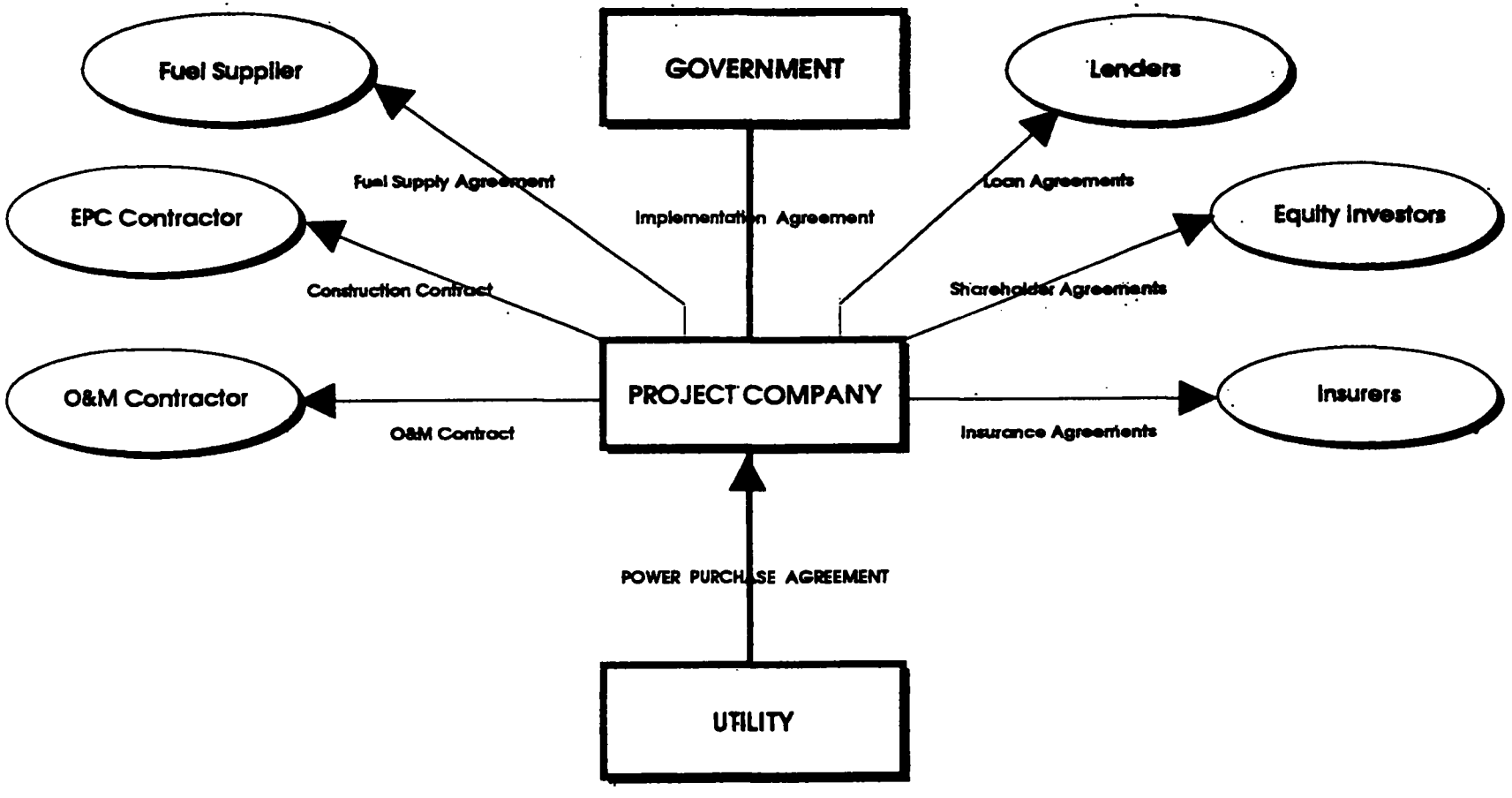

Figure: 1
Security Agreements Structure for non- recourse financed Project

Table 1 : ALLOCATION OF PROJECT RISKS

RISK	BEST PARTY TO ASSUME THE RISK								
PRE-COMPLETION RISKS	GOVT	UTILITY	PROJECT COMPANY	EPC CONTRACTOR	EQUITY INVSTORS	O&M CONTRACTOR	LENDERS	FUEL SUPPLIER	INSURERS
BID RISK			■						
DESIGN RISK				■					
CREDIT RISK							■		
CONSTRUCTION RISK				■					
POLITICAL RISK	■								
COMPLETION & COMMISSIONING			■	■					
COST OVERRUNS				■	■				
FORCE MAJEURE	■	■	■						■
POST-COMPLETION RISKS									
POLITICAL RISK	■								
OPERATION PERFORMANCE						■			
POWER OFF-TAKE RISK		■							
FUEL SUPPLY								■	
ENVIORNMENTAL						■			
LABOUR RELATIONS	■					■			
FORCE MAJEURE	■	■	■						■
FOREIGN CURRENCY RISK	■	■							
INFLATION RISK		■							
INTEREST RATE RISK			■						
COST OVERRUNS		■			■				

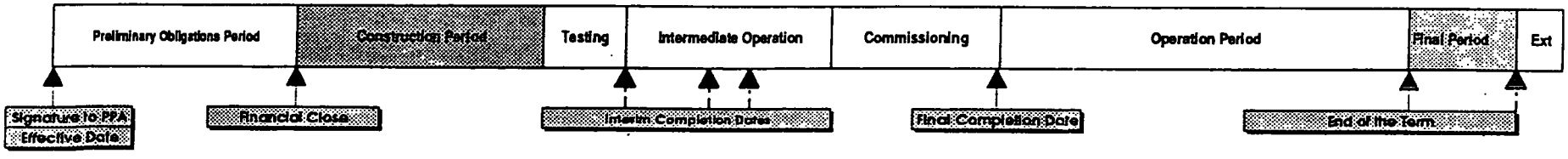

Figure: 2
Phases of Implementaion of an Independent power Project

Supply Contracts, Shareholders Agreements, Loan Agreements, Insurance Agreements, Escrow Agreements, etc. come into full force and effect. At the Financial Close all the parties to the Project are fully bound and committed to the implementation of the Project. Hence, achievement of the Financial Close is a principal milestone in any project implemented by limited-recourse or non-recourse financing.

3.2 Preliminary Obligations Period

Preliminary Obligations Period is usually the period between the signing of the Power Purchase Agreement and the Financial Closure. Achievement of the Financial Close is a prime obligation of the Project Company, and the Utility will usually require a sizeable security in the form of a Bond (Preliminary Obligations Bond) to compensate for its commitment to accommodate the project within its expansion plans. The Utility may also have certain obligations during this period, which may be in the form of assurances of land availability for the Project, transmission interconnection designs, provision of access roads, etc.

3.3 Construction Period

Upon achievement of financial closure, the Project Company is obliged to commence construction work of the project. In the interest of the Utility, this period should also be covered by a Performance Bond, or alternatively, in the form of Liquidated Damages linked to the availability of the agreed plant capacity at an agreed final completion date.

For partial mitigation of the considerable financial risk they assume during this period, the lenders to the project may require assignment of any bonds, which the Project Company has contracted for under the Construction and Equipment supply Contracts, in favour of the lenders. The Project Company also sustains a high risk during the Construction Period, which could be in the form of delays or cost overruns.

It is important to note that most of the construction risks are usually borne by the Utility or the Host Government under the conventional project procurement methods.

3.4 Operation Period

During the period subsequent to the final completion date, Project Company is required to operate and maintain the plant and deliver electricity (both power and energy, or, in certain cases, energy only) to the Utility. In return, the Utility is obliged for acceptance power and/or energy, as the case may be, and for tariff payments in an agreed manner.

Technical performance criteria during the operation period shall should also be agreed upon. The Project Company will be made liable to heavy penalties in the event of their inability to achieve such agreed performance such as capacity and energy availability, heat rates, etc. In a BOT type project formulation where transfer of the project assets to the Utility is envisaged, the Utility will require the Project Company to ensure that the plant is operated and maintained in an agreed manner. The Utility may also require the Project Company to maintain a sizeable reserve funds for plant maintenance, which funds are assignable to the Utility at the time of transfer of the assets.

There may be minimum guaranteed energy purchase requirement under "take-or-pay" type contracts where the Utility is obliged to accept and pay or, if not accepted, to pay for a guaranteed amount of energy delivered by the Project Company. Such arrangements are more suited for Base Load plant. Otherwise, these may impose certain restrictions on merit order dispatch of the plant by the Utility. In fully dispatchable type of contracts, the Utility may be required to pay a Capacity Charge for plant availability. In this type of contracts, the Utility is able to dispatch the plant on merit order, and pay only for the energy dispatched, in addition to the Capacity Charge.

3.5 Final Period

In project formulations where an asset transfer is envisaged (e.g. BOT or BLT type), the Power Purchase Agreement should address such transfer provisions and the time frames for completion of such transfers. Under some Power Purchase Agreements, the parties will be obliged to attend to certain tasks after the operation period. An example for such a task is the obligation of the Project Company to deliver vacant possession of the site.

4.0 Features of a Power Purchase Agreement

4. 1 Milestones

The Power Purchase Agreements usually specify the Milestones for the Project Company and for the Utility in order to fulfil their obligations under the Agreement. There could be various penalties associated with the Milestones, if the party responsible fails to achieve these Milestones. However, such penalties should be construed as a mean of compulsion to achieve the Milestone, rather than as a means to recover any cost incurred by the other party.

4.2 Securities

During each phase of project implementation, the Utilities might seek comfort through certain securities to be provided by the Project Company. These could be in the form of:

- Bid Security
- Performance Guarantee
- Preliminary Obligations Bond
- Stand-by Letters of Credit

In return, the Project Company also may require certain assurances in the form of stand-by letters of credit, in relation to the Utility's payment obligations.

The Project Company might also require certain guarantees from the Host Government in relation to tax concessions, Performance Guarantees on obligations of the Utility (if the Utility is state-owned), concessions on repatriation of profits, etc. Such understandings between the Project Company and the Host Government are included in a separate Implementation Agreement. Such guarantees, in favour of the Project Company, constitute an assurance of the future revenue streams to the potential lenders and shareholders.

4.3 Tariff

The purchase tariff, which is usually structured at the time of project solicitation, may contain several components such as:

Energy Charge

- Fuel Component
- Variable O&M

Capacity Charge

- Capital Cost Component
- Fixed O&M

To allow for inflation during the life of the project, certain components of the Energy and Capacity Charges could be subjected to escalation. These escalation indices could also be defined at the stage of project solicitation or at the stage of negotiation of the Power Purchase Agreement. By this, the risk of cost variances during the Operation Period due to inflation is allocated to the Utility.

The currencies of payment **should** also be defined. Certain components of the Tariff may be paid in local currency, and the rest in a designated foreign currency. By agreeing for payments in foreign currencies, the Utility assumes the exchange rate risk.

4.4 Operation

In most of the cases, the plant is connected to a network owned by the Utility. Therefore, the procedures for co-ordination of plant operation and maintenance with Load Dispatchers of the Utility have to be established in the Power Purchase Agreement. Start-up procedures, points of interconnection, electrical characteristics of the plant, frequency of tests (e.g.: for purposes of establishment of plant availability) will all have to be negotiated and to be agreed upon.

Utilities will usually require its plant dispatch to be unhindered by the terms of agreements with independent power producers. Utilities might also seek for curtailment rights for its system maintenance. Such requirements would sometimes conflict with the interests of the Project Company. To compensate for such dispatch requirements by the Utility, the Project Company might seek compensation in the form of a higher tariff or in the form of extra charges **such as Start-Stop Charges**. These charges required in the provisions related to operation are usually reflected **in** the tariff structure.

4.5 Metering and Billing

The responsibility for installation, maintenance and ownership of the meters **should** be established in the Power Purchase Agreement. Accuracy Classes of the equipment, dealing with meter inaccuracies, frequency of meter testing, etc., **should** also to be agreed upon.

Frequency of meter reading and invoicing and accuracy of billing calculations are also specified. These provisions form an essential part pertaining to this period of Power Purchase Agreement.

4.6 Commissioning

The obligations of the parties during the testing and commissioning of the plant need to be defined. The Plant is usually connected to a network owned by the Utility, and hence, it will be obliged to accept the power/energy produced during testing. As the final completion date has not occurred, the Utility may be able to negotiate for a discounted tariff during testing.

In certain cases, the Utility may require power before the occurrence of final completion, due to constraints of fulfilling the demand. Such situation may be handled through Interim Completion Dates for operation before full commissioning of the plant. The Project Company also welcomes such arrangement, upon which a reduced stream of tariff (**which may comprise of the Energy Charge and a pro-rated**

amount of Capacity Charge) could be triggered, reducing its burden of payment of loan interest during the Construction Period.

4.7 Force Majeure

During an event defined to be Force Majeure, the parties are not obliged to perform their obligations under the Agreement in full. Ideally, this would mean the Project Company will be excused for breach of the agreement owing to its non-performance during Force Majeure, and the Utility will also be excused from its payment obligations. During certain events of Force Majeure the parties will agree to fulfil their obligations partially without being subjected to penalties or in breach. This leads to a situation that each party would attempt to include as many events as possible, which are not strictly under their own control, into the definition of Force Majeure. However, the principle governing allocation of Force Majeure risk is that, it has to be assigned to the party that is best equipped to mitigate the particular risk, or else, to share the risk between the parties.

The obvious Force Majeure events will be: Acts of God, war, civil commotion, natural disasters, etc. However, the Project Company (with foreign equity) would not be willing to assume the risks arising out of war, civil commotion or general strikes, etc., within the country. Similarly, the Utility would also be unwilling to assume such risks. Hence, agreeing upon the specific inclusions and exclusions for Force Majeure events is a major part of negotiation of the Power Purchase Agreement. The Utility will usually make certain that non-performance of the Project Company due to equipment failures,fuel or material shortages, failure to maintain the plant and equipment, etc., are excluded from the definition of Force Majeure. The Project Company will also make strong claims for its right of invoking Force Majeure for Governmental action.

Once the Force Majeure situation is over, the parties will be obliged to resume their obligations as soon as practicable. The parties, especially the Utility, would not favour to have the Agreement in force indefinitely under Force Majeure situations. Hence, there could be limitations imposed by the Agreement on the duration of Force Majeure, after which the Agreement could be terminated.

4.8 Changes in Laws and Regulations

The risk of changes in laws and regulations at the time of agreement is a matter of prime importance to the Project Company, because changes to the current laws, etc., at the time of entering into the agreement might seriously affect the profitability of the venture. The Project Company would seek a guarantee for an unchanged stream of profit from the Utility or the Government under such circumstances.

The Utility or the Government, who usually are required to assume this risk, would be required to reimburse or absorb the differences of the costs to the Project Company resulting from the future changes to the regulatory regime.

4.9 Buy Out

In the event of certain Force Majeure situations or when a Project Company is in default, the Utility may be obligated or will have an option to purchase the plant and assume operation of the plant. The formulae for determination of the Buy-Out prices in such events shall be a part of the Power Purchase Agreement.

If a breach or a default by the Project Company occurs within the tenure of a loan, a lender might be obligated to step-in and operate the plant on behalf of the Project Company.

4.10 Dispute Resolution

As for any other contract or agreement, the dispute resolution procedures are to be defined in the Power Purchase Agreement. There needs to be a means of dispute resolution through conciliation before going into arbitration. Again it is in the best interest of the parties to avoid such lengthy dispute among resolution procedures, by resolving any dispute between the Company and the Utility themselves. The parties in dispute usually share the costs of dispute resolution.

4. 11 Default

The events constituting a breach or a default in the terms and conditions of the agreement will have to be defined. Depending on the nature of the default, the remedial measures will have to be agreed upon.

Events of default where the Project Company is responsible could be:

- Failure to maintain plant capacity ratings
- Non-availability of Capacity/Energy
- Abandonment of the Plant
- Bankruptcy

Similarly, some events of default where the Utility is responsible could be:

- Bankruptcy
- Failures or delays in payments
- Violation of agreed dispatch reqiurements

The remedy of either party could be in the form of compensation for the damages or termination of the agreement. In the event of certain events leading to default by the Utility and resultant termination of the agreement, the Utility might be compelled to, or may have the option to, purchase the plant.

However, the financial position of the Utility may not warrant such a purchase at the time when the Utility is compelled to make the purchase. The Project Company might seek a guarantee under the Implementation Agreement from the Government to this effect.

4.12 Miscellaneous Provisions

There will also be a host of miscellaneous provisions in relation to site access, rights of access for testing and inspection, appointment of the Engineer or O&M Contractor, assignment of the agreement etc.

5.0 Conclusion

It has to be noted that the Power Purchase Agreement is the only agreement that generates revenue to the Project Company. **This agreement is a vital thread in the fabric of interwoven agreements constituting a project financed on limited-recourse or non-recourse principles. Any change to the terms and conditions in the Power Purchase Agreement is likely to be reflected in all the other project agreements.** Therefore, although this agreement is the only agreement between the Utility and the Project Company, it is of importance to all the parties who are involved in **such a project.** Hence, all such parties are interested in finalisation of the Power Purchase Agreement at an early stage of project formulation.■