

MASTER OF BUSINESS ADMINISTRATION

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INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

PROJECT FINANCING FOR POWER GENERATION PROJECT UNDER  
INDEPENDENT POWER PRODUCER PROGRAM (IPP)

BY :

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**PROJECT FINANCING  
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**Bismillah-ir-Rahman-ir-Rahim**

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## **ABSTRACT**

Project Financing in its concept is not something new. It is basically an arrangement when a particular facility or a related set of assets is capable of functioning profitably as a separate entity or as an independent economic unit. It involves the issuance of debt securities to the lenders, which are designed to be service from the revenues, or cash flow derived from the project. Under the right environments, project financing offers a number of advantages over directly financing a project on the conventional basis.

Project financing currently, is a well established financing technique. It has been engineered to provide a large number of financing facilities to various kind of large-scale capital projects. These are possible because project financing arrangement is capable of allocating return and risks efficiently than conventional financing.

The number of opportunities to reap the benefits of project financing is likely to increase. Other than the current cogeneration plants and electricity power plants, industrial facilities, development or redevelopments of infrastructure are areas well suited for project financing. The classical example of this is the development of the Eurotunnel project.

In this paper a particular project, the proposed power plant at Port Sudan, Sudan is examined and assessed for the viability to be finance along the project financing technique.

The recommendation in this paper seek to identify the problems related to Mudarabah financing in relation to its similarity to that of project financing.

# PROJECT FINANCING

## FOR POWER GENERATION PROJECT UNDER INDEPENDENT POWER PRODUCERS PROGRAM

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# CHAPTER 1

## INTRODUCTION

Project financing is a funding arrangement when a particular facility, an individual project, a related set of assets or a venture stands alone as an independent entity. The project is capable of functioning profitably as an independent economic unit.

The project sponsors may find it advantageous to form a new legal entity to design, construct, own, and operate the project. If sufficient profit is expected, the project company implement the development of the project either through funding by issuance of equity securities or by issuance of debt securities or the combination of both that are designed to be self-liquidating from the revenues derived from the operations.

Project financing is being used extensively, not only to fund real estate developments and oil and gas explorations, but independent electric power generation facilities, factories, and research and development efforts.

As such project financing is a well-established technique. Chen, Kensinger, and Martin (1989) documented and identified more than 168 projects financed on this basis with the total value of more than \$23 billion worth between first quarter of 1987 and the third quarter of 1989. Looking forward, there are indeed a lot more potential projects, which can be financed with this technique.

This is in view of the proposed Port Sudan power plant project, which is an electric generation facility under Independent Power Producer concept. The project is located at Port Sudan, based on the barge-system and the electricity generated is interconnected to the existing grid system onshore. It appears that the proposed project may be able to be financed by project financing technique.

In chapter 2, the subject of project financing is discussed in reference to the current available literatures on the subject. The definition of project financing as a limited recourse debt instrument is highlighted. Since the debt is of limited recourse type the funder of the project required certain security arrangements against the risk of financing such projects.

It is found that project financing is not a new financing technique. Its historical application in its concept has been used since the middle ages, much in the form of voyage-by-voyage basis. However it has developed to a sophisticated current level and it is projected to develop further to cater the financing complexities of the future. The privatisation exercise carried out by government entities has enhanced the use of project financing especially in the infrastructure development and redevelopment.

The appropriateness of project financing is discussed in Chapter 2. In this aspect the contributing factors in determining whether project financing might be appropriate method of raising funds is discussed.

In Chapter 3, the rationale of project financing is discussed and how the need of contracts is important. Countering the under-investment problem, reallocating free cash flows, reducing asymmetric information and signalling posts, more efficient structuring of debt contract and more effective corporate organisation and management compensation are the main rationale for project financing.

The Chapter also compares project financing versus direct financing on the basis of several criteria. The major criteria being organisation, control and monitoring, allocation of risks, financial flexibility, free cash flows, agency cost, and structure of debt contract debt capacity and bankruptcy. The advantages and disadvantages of project financing as a funding technique is also discuss in this chapter.

Chapter 4 deals with key issues in project financing. The most important of which is the project viability in respect to technical, economic and creditworthiness of the project proposed to be financed. Other major issue is project risk of various types; security arrangement, legal structure and financing plan.

The chapter also discussed discounted cash flow analysis as the financial model to analyse the project economic viability. Net Present Value (NPV) and Internal Rate of Return (IRR) method are normally used as the basis of valuation and these are discussed in the chapter.

Chapter 5 looks into the issue of sources of funds especially for the equity and debt portion of the project. This is basically from literatures review which highlight several funding sources such as long term debt market, commercial bank loan, fixed-rate debt market, International capital market, supplier credit, government assistance and local sources of capital.

Companies based locally in Malaysia will basically undertake the proposed project in Sudan. It is thus imperative to review the local sources of fund for the equity and debt portion. However the local sources of fund have been subjected to the current economic crisis and this is discussed in the corresponding Chapter 6. The crisis have given rise to liquidity problem of the local banks and constricted the local capital market. From the analysis it appear that limited equity and debt portion of the project can be raised locally in Malaysia. The funding proposal for the project is also discussed in this chapter.

Chapter 7 mainly deals with the specific case study of the proposed power plant project at Port Sudan. The country and industry study is highlighted in order to provide the general scenario of the project setting. The project specific is discussed and explained.

The discussion is concluded in Chapter 8. In this chapter the proposed power plant project at Port Sudan is review against all issues related to project financing and thus the any discrepancies are highlighted and thus can be

addressed and mitigated so that project-financing technique can be employed.

The last Chapter is basically recommendation in view of problems and unpopularity of Mudarabah as debt instrument among Islamic banks and financiers. There appears a similarity and parallelism between project financing and Mudarabah and the success of project financing as a funding technique challenge the viability of Mudarabah as the debt instrument based on the Islamic Syariah.

## CHAPTER 2

### 2.1 What is project financing?

Project financing may be defined as the raising of funds to finance an economically separable capital investment project in which the providers of funds look primarily to the cash flow from the project. This expected future cash flow is used as a source of funds to service the loans and provide the return of and a return on their equity invested on the project.

Project financing can be classified as Limited recourse debt with significant equity component. Cash flows are paid out to the owners as they are earned—rather than reinvested in new projects under the same management, and the legal entity set up to establish the project has a finite life. There may not be any debt involved in such an arrangement (for example, many R&D limited partnerships are all-equity, but are clearly finite-lived, project-oriented entities). When there is debt, however, the creditors have recourse only to the assets and cash flows of the project itself, without further recourse to the owners.

Limited-recourse debt is another example of “debt” that has significant equity component for investors—imposing debt-like restrictions on the management. Because investors have recourse only on the cash flows of a specific set of activities involving a subset of assets under the management, such debt offers management some of the flexibility inherent in equity financing. The

requirement to pay out most of the project's cash flow as interest however conveys to investors the tax advantages of debt along with explicit control over the decision of how to reinvest the cash flows.

Graham Vinter(1995) provides a lively discussion on the concept of non-recourse or limited recourse financing. According to him, the general principle behind “non-recourse” or “limited recourse” transactions is that the lenders are only entitled to look to certain assets of the borrower for repayment of their loans and the payment of interest. As far as loans are concerned, however, non recourse or limited recourse deals are only really possible where the lenders are given security over the assets in question. Without such security, other creditors may be able to have access to the assets upon which the lenders are relying and, if this risk ever materialised, the basis upon which the lenders went into the deal would be corrupted.

He further stated that non-recourse is generally understood to mean that the lenders can in all circumstances only have recourse or claim to the assets in question and never to the borrower. In other words, their only remedy for non-payment is the enforcement of their security and they can never simply sue the borrower on a personal covenant to pay.

If debt and equity are used simultaneously, the terms of the debt and equity security are tailored to the cash flow characteristics of the project. For their security, the project debt securities depend, at least partly, on the profitability of the project and on the collateral value of the project assets.

Project financing typically includes the followings basic features:

1. An agreement by financially responsible parties to complete the project and toward that end, make available all funds necessary to achieve completion.
2. An agreement by financially responsible parties (typically taking in the form of a contract for the purchase of the project output) that, when project completion occurs and the operations commence, the project will have available sufficient cash to enable it to meet all its operating expenses and debt service requirement, even if the project fails to perform on account of force majeure or for any other reason.
3. Assurances by financially responsible parties that, in the event of a disruption in operation occurs and funds are required to restore the project to operating condition, the necessary funds will be made available through insurance recoveries, advances against future deliveries, or some other Means.

In the case of electricity generating plant project the following additional features are common,

1. An agreement by responsible parties to supply the required fuel requirement to the stipulated quantity, quality and timing, normally in the form of supply contracts, to provide fuel supply for the plant.



2. An agreement by responsible party, normally with adequate and reputed capability and experience to operate and maintain the operations of the plants according to the agreed plant performance.

The above features generally provide the required security to the financiers and investors since such projects are financed as stated earlier is of limited-recourse type.

Chen and Kesinger (1991) analysed that project financing is commonly used for relatively modest-size, low-risk project. This finding however differed from Shah and Thakor (1987), which based their finding on the premise that project financing, is used for very large, high-risk projects. However Chen and Kesinger had drawn the conclusion after analysing a long list of projects.

According to Finnerty (1996) the term project financing is widely misused and perhaps even more widely misunderstood. Project financing is not a means of raising funds to finance a project that is so weak economically that may not be able to service its debt or provide acceptable rate of return to equity investors. In other words, it is not a means of financing a project that cannot be financed on a conventional means.

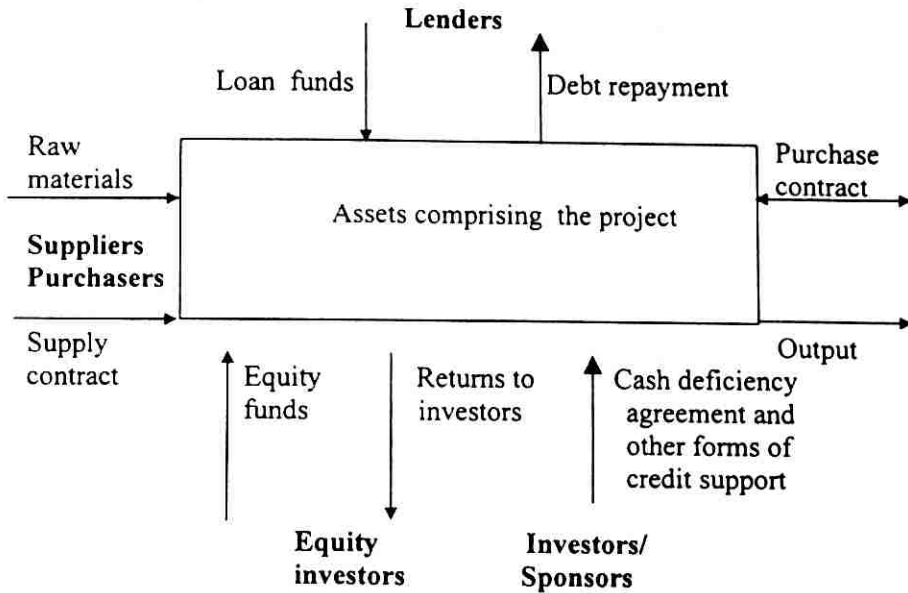
Project financing should be distinguished from conventional direct financing, or what may be term financing on a firm's general credit. In connection with

conventional direct financing, lenders to the firms look to the firm's entire asset portfolio to generate the cash flow to service the loans. The assets and their financing are integrated into firm's asset and liability portfolios. Often, such loans are not secured by any pledge of collateral. The critical distinguishing feature of a project financing is that the project is a distinct legal, project assets, project-related contracts, and project cash flow are segregated to a substantial degree from the sponsoring entity. The financing structure is designed to allocate financial returns and risks more efficiently than a conventional financing structure.

Selecting project financing versus internal financing is a more radical choice than most financial decisions, however, because it involves an alternative organisational form that is fundamentally different from the traditional corporation in two significant ways that have implications for the reorganisation of business activities;

1. The legal entity that gives the project substance is finite-lived, which its identity defined by the specific project and
2. As a result, the cash flows generated by the project (including depreciation/depletion) are paid directly to the investors, who make the reinvestment decisions themselves. Unlike the traditional integrated corporation, management does not have the "first option" in deciding how to reinvest the project's cash flows.

A project financing requires careful financial engineering to allocate risks and rewards among the involved parties in a manner that is mutually acceptable. Figure 2.1 below illustrates the basic elements in a capital investment that is financed on a project basis.



**Figure 2.1** The Basic Elements of a Project Financing ( Chen & Kesinger, 1996)

For organisational forms requirement, when there is a single corporate sponsor, a project financing can be arranged simply by negotiating nonrecourse loans through special-purpose subsidiaries or trusts. Other project financing arrangements are structured around non-recourse leveraged leases, in which the lease obligations are payable solely from the assets and cash flows of the project. In the case of joint venture, the simplest form for a project financing is a general partnership among the parties in the venture and then the partnership is dissolved once the project come to an end.

In conclusion, project financing can be beneficial to a company with a proposed

project when;

1. the project's output would be in such strong demand that purchasers would be willing to enter into long-term purchase contract and
2. the contracts would have strong enough provisions that banks would be willing to advance funds to finance construction on the basis of the contracts.

For example, project financing can be advantages to a developing countries when it has a valuable resource deposit, other responsible parties would like to develop the deposit, and the host country lacks the financial resources to proceed with the project on its own.

## **2.2 A Historical perspective**

Project financing is not a new technique. Its historical application in its concept can be traced to the Middle Ages. Venture-by-venture financing of finite-life projects has a long history; it was, in fact, the rule in commerce until the 17th. Century. In fact 700 years ago, an arrangement was made between a medieval bankers to undertake mining venture in England. Through the agreement the British Crown negotiated a loan from the Frescobaldi (a leading Italian bank of that period) to developed the Devon Silver mines. The arrangement was crystallised in the form of a lease for the total output of the mines during the year 1299. The contract entitled the Italian venturers to control the operation of the mines for one year and take as much unrefined

silver ore as they could extract, paying on their own, all cost of the operation. The English Crown did not provided any guarantee concerning the quality, quantity and value of the silver that could be mined and extracted during the period.

Until the seventeenth century, moreover, the rule in commerce was to finance trading expeditions on a voyage-by-voyage basis. That is, cargoes and ships were liquidated and the profits divided among the investors at the conclusion of the voyage. New investors then had to be found to back the next one. Although many investors willingly “rolled over” their money, they did so at their own discretion.

Viewing from such historical perspective one possibly can conclude the equivalent financing methodology provided by Islamic mudarabah financing. In mudarabah financing one party, the Rab-Ul-mal or financier, provides the capital, while the other party, the Mudarib, provides the entrepreneurship and effort and runs the business. The underlying contractual relationship is that of a partnership, with Rab-Ul- Mal as the silent or sleeping partners. The two parties according to a predetermined profit sharing ration (PSR) share profits derived from the business or investment. This could be, say 70:30, or 80:20, with the larger portion accruing to the Mudarib. In the event of losses, the Shariah stipulates that all losses must be borne by the financier. Finally, in a Mudarabah arrangement, the financier is not allowed to interfere in the running of the business. In fact mudarabah can be similarised as project financing in view of the limited recourse and finite entity parameters.

Another Islamic financing instrument worthy of mentioned is the Musharaka. This is a partnership, normally of limited duration, formed to carry out a specific project. It is therefore similar to a western-style joint venture, and is also regarded by some as the purest form of Islamic financial instrument, since it conforms to the underlying principles of sharing in, and benefiting from, risk. Participation in a musharaka can be in a new project, or by providing additional funds for an existing one. Profits are divided on a pre-determined basis, and any losses shared in proportion to the capital contribution. In this case, the bank enters a partnership with a client in whom both share the equity capital and perhaps even the management- of a project or deal, and both share in the profits or losses according to their equity shareholding.

In more recent time, project financing is the application of the limited recourse concept to public sector infrastructure development. States and municipalities can raise debt against revenues derived from a particular source (revenue debt) as an alternative to borrowing against their full faith and credit (general obligation debt). Although this example of the limited recourse concept in public sector projects, it is the advance of privatisation and deregulation around the world over the past 15 years that project finance has received its latest boost.

Privatisation is the voluntary withdrawal of the state from economic activities it used to control and manages itself. Initially, this is manifested in the sale of state enterprises to the private sectors. But now the concept also comprises both public service contracting and green-field privatisation.

As such project financing has moved a long way and in fact a lot of innovations has been carried out in project financing. Project financing has not only move to infrastructure development but more recent to manufacturing facilities. For example in 1988, General Electric Capital Corporation (GECC) has expand its project finance group and initiated a \$105 million of limited recourse project financing for Bev-Pak Inc. to built a beverage container plant in Monticello, Indiana.

### **2.3 Requirement of project financing**

A project has no operating history at the time of the initial debt financial. What are available are just expected projected future cash flows. Consequently, its creditworthiness depends on the project's anticipated profitability and on the indirect credit support provided by third parties through various contractual agreements. As a result, lenders require assurances that;

1. the project will be placed into service
2. once operations begin, the project will constitute an economically viable undertaking.

The availability of funds to a project will depend on the sponsor's ability to convince and ascertain the providers of funds that the project is technically feasible and economically viable.

Lenders must be satisfied that the technological processes to be used in the project are technically feasible for commercial application on the scale

contemplated. In brief, providers of funds need assurance that the project will generate output at its designed capacity. The technical feasibility of conventional facilities, such as electric power generating plants is generally accepted. But technical feasibility of some unconventional plants with some significant concerns such as coal gasification plant, large-scale natural gas liquefaction plant, long electric submarine cables require verifying opinions from independent engineering consultants, particularly if the project involved unproven technology.

The economic viability of a project to operate successfully and generate cash flows is of outmost importance to prospective lenders. These providers of funds must be satisfied that the project will generate sufficient cash flows to service the project debt and pay acceptable rate of return to equity investors. There must be a long-term need for the project's output and the project must be able to deliver its products to the marketplace profitably. Therefore the project must be able to produce a cost-to-market price that will generate funds sufficient to cover all operating costs and debt service while at the same time providing acceptable rate of return of investment to the equity investors.

At the same time, supply inputs and other factors of production that are required for successful operation of the plants is needed. The inputs requirements must be available in the right quantity and quality for the plant to operate at its design capacity for its entire life. The normal lender requirement is as follows;