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الجميع الذكية
للتعليم القابضة



Project Financial Management

Lecture One: Introduction to Project Finance

PMG 615

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Project Financial Management

Project Financial Management determines how the project will be financed, including the processes to acquire and manage the financial resources for the project. It is more concerned with revenue sources and monitoring net cash-flows for the construction project than with managing day-to-day costs. (PMBOK® Guide, Construction Extension 2016 Edition)

Therefore, to continuously monitor the project finances and to ensure the company's financial capacity to complete the project are the most critical finance manager jobs. This also includes the assessment and monitoring of financial risks and the implementation of suitable financial risk management strategies.

Learning Objectives

- Defining project and its attributes.
- Project Life Cycle.
- Financial Markets: Characteristics and Types
- Definitions of Project finance.
- Principles of Project finance.
- Difference between project finance and corporate finance.
- Elements of a Project-Finance Structure.
- Why do investors use project finance?

What is a project?

- A project is a group of unique, interrelated activities that are planned and executed in certain sequence to create a unique product or service, within a specific time frame, budget and the client's specifications.
- A project is a temporary endeavor undertaken to create a unique product, service or result.
- **Temporary means:** A Project is a one-off event and not an ongoing operation It has a definite beginning and a definite end.
- **The end is reached when:**
 - The project's objectives have been achieved.
 - When it becomes clear that the project objectives will not or cannot be met.
 - The need for the project no longer exists and the project is terminated.

Attributes of a Project

- A Project is a **planned set of activities**.
- A Project **has a specific scope**.
- A Project has **time, cost, quality and resource constraints**.
- Has a well-defined objective.
- Has a defined life span with a beginning and an end.
- Involves doing something unique.
- Has a customer.
- Involves a degree of uncertainty.

Examples of Projects

- Construction of a hospital.
- Writing a book.
- Designing and implementing a computer system.
- Introducing a new product in the market.
- Construction of a new bridge over a river.
- Designing and producing a brochure.
- A Politician contesting an election.
- Building a dam.
- Organizing a seminar.

Difference between project and routine work

Project

- > One time
- > Use of wide variety of skills
- > Use of special purpose equipment for short duration
- > No revenue during Project stages

Routine work

- > Repetitive
- > Limited Skills
- > Equipments are in continuous use
- > Revenues are there

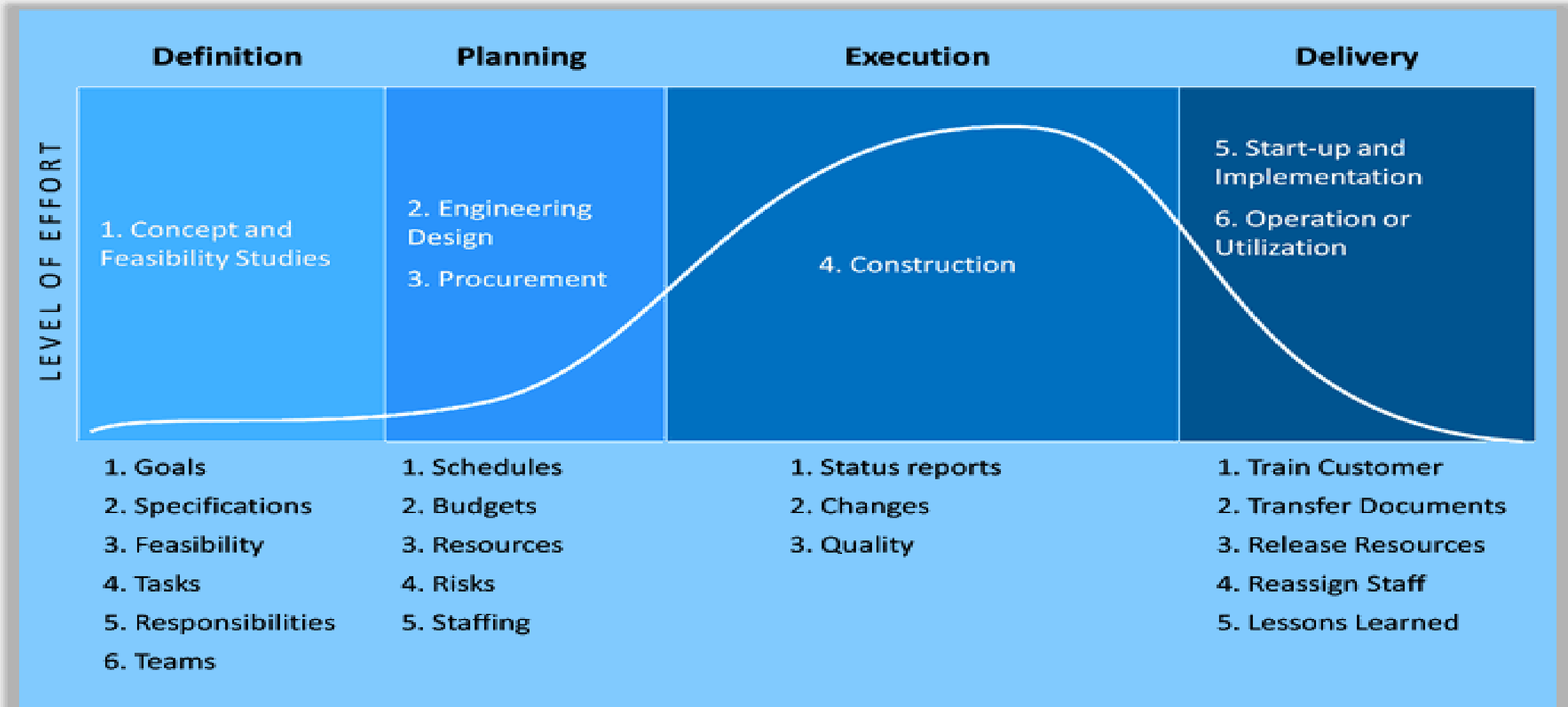
Project Life Cycle

Like organic entities, projects have life cycles. From a slow beginning they progress to a buildup of size, then peak, begin a decline, and finally must be terminated. Some projects end by being phased into the normal, ongoing operations of the parent organization.

A standard **project** typically has the following four major phases (each with its own agenda of tasks and issues): initiation, planning, implementation, and closure. Taken together, these phases represent the path a **project** takes from the beginning to its end and are generally referred to as the **project “life cycle.”**

PROJECT LIFE CYCLE

Phases of the Project Life Cycle



Financial Markets: Characteristics and Types

Financial markets facilitate the raising of financial capital by government entities and business firms. Government entities can issue or sell debt securities to finance the building of roads and bridges or to provide added services to the people. Business firms can issue debt securities, and corporations can sell equity securities or stocks to raise funds to invest in and grow their businesses. Financial markets also facilitate the transfer of previously issued debt and equity securities from existing to new investors.

1. Money and Capital Markets

Money markets are where debt securities with maturities of one year or less are issued and traded. These markets are generally characterized by high liquidity whereby money market securities can be easily sold or traded with little loss of value. These short-lived securities generally have low returns and low risk.

The money market is composed of several types of securities including short-term Treasuries (e.g. T-bills), certificates of deposit (CDs), commercial paper, repurchase agreements (repos), and money market mutual funds that invest in these instruments.

Capital markets are where debt instruments or securities with maturities longer than one year and corporate stocks or equity securities are issued and traded. Capital market securities are generally issued to finance the purchase of homes by individuals, buildings and equipment by businesses, and for provision of infrastructure (roads, bridges, buildings, etc.) by governments. Business firms and governments issue long-term debt securities, called **bonds**, to finance their assets and operations. **Mortgages** are issued to finance homes and buildings. Corporations also issue stocks to meet their financing needs.

Commercial papers are unsecured short-term promissory notes with maturity mostly not exceeding 270 days. They are issued by large corporations to meet short-term obligations.

Treasury Bills are short-term debt obligations backed by the government with a maturity of less than one year.

A certificate of deposit, or CD, is a type of savings account offered by banks and credit unions. You generally agree to keep your money in the CD without taking a withdrawal for a specified length of time. Withdrawing money early means paying a penalty fee to the bank.

A repurchase agreement, also known as a repo, is a short-term borrowing arrangement where one party sells securities to another party with an agreement to repurchase them at a specified future date and price. Repurchase agreements are commonly used in the financial markets to provide short-term liquidity and facilitate borrowing/lending of cash against securities as collateral.

2. Primary and Secondary Markets

There are primary and secondary markets for debt (bonds and mortgages) and equity securities. The initial offering, or origination, of debt and equity securities takes place in a **primary market**. Proceeds from the sale of new securities after issuing costs go to the issuing business or government issuer. The primary market is the only “market” where the security issuer directly benefits (receives funds) from the sale of its securities. Mortgage loans provide financing for the purchase of homes and other real property.

Secondary markets are physical locations or electronic forums where debt (bonds and mortgages) and equity securities are traded. Secondary markets for securities facilitate the transfer of previously issued securities from existing investors to new investors. Security transactions or transfers typically take place **on organized security exchanges or in the electronic over-the-counter market.**

Individuals and other investors can actively buy and sell existing securities in the secondary market. While these secondary market investors may make gains or losses on their securities investments, the issuer of the securities does not benefit (nor does it lose) from these activities. The secondary market for securities is typically divided into short-term (money) and long-term (capital) market categories. There also is an active secondary market for real estate mortgages.

Major Types of Financial Markets

There are four main types of financial markets—debt securities markets, equity securities markets, derivative securities markets, and foreign exchange markets. **Debt securities** are obligations to repay borrowed funds. **Debt securities markets** are markets where money market securities, bonds (corporate, financial institution, and government), and mortgages are originated and traded. **Bond markets** are where debt securities with longer-term maturities are originated and traded. Government entities (federal, state, and local), financial institutions, and business firms can issue bonds.

Mortgage markets are where loans to purchase real estate (buildings and houses) are originated and traded.

Equity securities are ownership shares in corporations. **Equity securities markets** are markets where ownership shares in corporations are initially sold and traded. Corporations can raise funds either through a *private placement*, which involves issuing new common stocks directly to specific investors, or through a *public offering*, which involves selling new common stocks to the general public. Financial institutions can also raise equity capital by selling common stocks in their firms.

- **Common stock is a residual claim on a firm's assets.** Common stock dividends are paid only after interest is paid to debtholders and dividends are paid to preferred stockholders. Furthermore, in **the event of firm liquidation, debtholders and preferred stockholders have priority over common stockholders** and are usually paid in full before common stockholders receive any payment.
- **Preferred stock is an equity security with scheduled dividends** that typically **do not change** over the security's life and must be paid before any dividends on common stock may be paid. There are many differences between preferred and common stock. The main difference is that preferred stock usually does not give shareholders voting rights, while common or ordinary stock does, usually at one vote per share owned.

There are also **derivative securities markets**, which are markets for financial contracts or instruments that derive their values from underlying debt and equity securities.

Financial derivative contracts are based on equities, debt, or other financial contracts.

Physical derivative contracts derive their values from the values of physical assets such as gold, oil, and wheat.

Derivative securities may be used to speculate on the future price direction of the underlying financial assets or to reduce price risk associated with holding the underlying financial assets. Organized exchanges handle standardized derivative security contracts, while negotiated contracts are handled in electronic markets often involving commercial banks or other financial institutions.

Foreign exchange markets are electronic markets in which banks and institutional traders buy and sell various currencies on behalf of businesses and other clients. In the global economy, consumers may want to purchase goods produced or services provided in other countries. Likewise, an investor residing in one country may wish to hold securities issued in another country.

For example, a U.S. consumer may wish to purchase a product in a foreign country. If the product is priced in the foreign country's currency, it may be necessary to exchange U.S. dollars for the foreign currency in order to complete the transaction. Businesses that sell their products in foreign countries usually receive payment in the foreign currencies. However, because the relative values of currencies may change, firms often use the currency exchange markets to reduce the risk of holding too much of certain currencies.

Definitions of Project finance

Project finance is a method of raising long-term debt financing for major projects based on lending against the cash flow generated by the project alone; it depends on a detailed evaluation of a project's construction, operating and revenue risks, and their allocation between investors, lenders, and other parties through contractual and other arrangements.

This type of financing is usually for large, complex and expensive installations that might include, for example, power plants, chemical processing plants, mines, transportation infrastructure, environment, and telecommunications infrastructure.

Definitions of Project finance

Project finance is non-recourse financing of a single asset or portfolio of assets where the lenders can look only to those specific assets to generate the flow needed to service its fixed obligations, chief of which are interest payments and repayments of principal. Lenders' security and collateral is usually solely the project's contracts and physical assets.

Project-finance structures differ between various industry sectors and from deal to deal, since each project has its own unique characteristics. But there are common principles underlying the project-finance approach.

Principles of project finance

1. The project usually relates to major infrastructure with a long construction period and long operating life.
 - So, the financing must also be for a long term (typically 15–25 years).
2. Lenders rely on the future cash flow projected to be generated by the project to pay their interest and fees, and repay their debt.
 - Therefore, the project must be ‘ring-fenced’ (i.e. legally and economically self-contained).
 - So, the project is usually carried out through a special-purpose legal entity (usually a limited company) whose only business is the project (the ‘Project Company’).

Principles of project finance

3. There is a high ratio of debt to equity ('leverage' or 'gearing')—roughly speaking, project finance debt may cover 70–90% of the capital cost of a project.

- The effect of this high leverage is to reduce the blended cost of debt and equity, and hence the overall financing cost of the project.

Principles of project finance

4. The Project Company's physical assets are likely to be worth much less than the debt if they are sold off after a default on the financing—and in projects involving public infrastructure they cannot be sold anyway.

- So, the main security for lenders is the Project Company's contracts, licenses, or other rights, which are the source of its cash flow.

- Therefore, lenders carry out a detailed analysis of the project's risks, and how these are allocated between the various parties through these contracts.

Principles of project finance

5. The project has a finite life, based on such factors as the length of the contracts or licenses, or reserves of natural resources.

- So, the project-finance debt must be fully repaid by the end of the project's life.

6. There are no guarantees from the investors in the Project Company for the project-finance debt. So, this is 'non-recourse' finance.

Difference between project finance and corporate finance

1. In corporate finance, loans are primarily lent against a company's balance sheet and financial projections extrapolated from its past cash flow and profit record.
2. In corporate finance, loans have access to the whole cash flow from the spread of the borrower's business as security, instead of the limited cash flow from a specific project thus even if an individual project fails, corporate lenders can still reasonably expect to be repaid;

Difference between project finance and corporate finance

3. In corporate finance, loans assume that the company will remain in business for an indefinite period and so can keep renewing (rolling over) its loans, which therefore do not need to be lent on a long-term basis; and
4. In corporate finance, loans may also be secured on the company's physical assets—its offices, factories, etc., so that if the debt is not repaid these assets can be sold off to help recover the debt.

Elements of a Project-Finance Structure

To look in more detail at the structure of a project financing, this usually has two elements:

- equity, provided by investors in the project.
- project finance-based debt, provided by one or more groups of lenders.

The project-finance debt has first call on the project's net operating cash flow; the investors' return is thus more dependent on the success of the project. So as the investors are taking a higher risk, they expect a higher return on their investment, and the reverse is true for lenders.

Elements of a Project-Finance Structure

A nexus of contracts signed by the Project Company provide support for the finance. A ‘Project Agreement’ is often at the centre of this contractual structure.

A project agreement may take 2 main forms:

1- An offtake agreement is an agreement that a producer makes with a purchaser. They agree to sell or buy a specific amount of future production. An offtake agreement typically occurs before the construction of a production facility. For the producer, the offtake agreement is a guarantee for the project’s economic future.

- Offtake agreements also improve the chances of obtaining a loan to complete the project. If the lender knows that you already have firm orders, it is more likely to approve your loan application.
- This type of agreement is common in natural resource development projects. The capital cost to extract the resource is considerable. Therefore, the company needs firm orders to make sure that the investment is worth it.

Elements of a Project-Finance Structure

Offtake agreement (continued)

- In a business with few buyers, the producer needs to be sure that the product will sell. The lender, before approving a loan, also needs to be sure.
- We call the party who is purchasing the product or service the **offtaker**.
- The offtaker can usually back out of an agreement. However, it will probably have to pay a fee.

2- or **a contract with a central government department**, regional or state government, county or municipality, or another public agency ('Contracting Authority will be used to cover all of these) which gives the Project Company the right to construct the project and earn revenues from it.

Elements of a Project-Finance Structure

Alternatively, the Project Company may sell its production in commodity markets (which may apply, for example, to power or natural-resources projects) or have a license to operate under the terms of general legislation for the industry sector (e.g. a privatized port or airport, or a mobile-phone network), in both cases without an Offtake Contract or Project Agreement, as discussed further below.

The Project Company usually enters into ‘**Sub-Contracts**’, which provide support for the project finance, particularly by transferring risks from the Project Company to other parties, and which also form part of the lenders’ security package. The Project Agreement and Sub-Contracts are known collectively as the ‘**Project Contracts**’.

Why Investors Use Project Finance?

1- High Leverage: One major reason for using project finance is that investments in ventures such as power generation or road building have to be long term but do not offer an inherently high return: high leverage improves the return for an investor.

Table 2.2 Benefit of Leverage on Investors' Return

		Low Leverage	High Leverage
Project cost		1,000	1,000
a) Debt		300	800
b) Equity		700	200
c) Revenue from project		100	100
d) Interest rate on debt (<i>p.a.</i>)		5%	7%
e) Interest payable	$[(a) \times (d)]$	15	56
f) Profit	$[(c) - (e)]$	85	44
Return on equity	$[(f) \div (b)]$	12%	22%

Why Investors Use Project Finance?

2- Lower Cost: If the Project Company is selling a commodity such as electricity into a market, the lower the financing costs the more competitive its pricing can be, and hence the higher leverage may be beneficial if the weighted cost of an investor's capital (i.e. equity and debt on its own balance sheet) is higher.

Table 2.3 Effect of Leverage on Offtaker's/Contracting Authority's Cost

		Low Leverage	High Leverage
Project cost		1,000	1,000
a) Debt		300	800
b) Equity		700	200
c) Return on equity	$[(b) \times 15\%]$	105	30
d) Interest rate on debt (<i>p.a.</i>)		5%	7%
e) Interest payable	$[(a) \times (d)]$	15	56
Revenue required	$[(c) + (e)]$	120	86

Why Investors Use Project Finance?

3- Borrowing Capacity: Project finance increases the level of debt that can be borrowed against a project; moreover, non-recourse finance raised by the Project Company is not normally counted against corporate credit lines (therefore in this sense it may be off-balance sheet). It may thus increase an investor's overall borrowing capacity, and hence the ability to undertake several major projects simultaneously.

4- Risk Limitation: An investor in a project raising funds through project finance does not normally guarantee the repayment of the debt. The risk is therefore limited to the amount of the equity investment. If the project goes well, the investor will get a good return on the investment, but if it goes badly the investor can simply walk away and hence limit the loss to the amount of the equity investment.

Why Investors Use Project Finance?

5- Risk Spreading/Joint Ventures: A project may be too large for one investor to undertake, so others may be brought in to share the risk in a joint-venture Project Company. This both enables the risk to be spread between investors and limits the amount of each investor's risk because of the non-recourse nature of the Project Company's debt financing.

6-Developer Leverage: Projects are often put together by a developer with an idea but little money, who then has to find investors. A project-finance structure, which requires less equity, makes it easier for the weaker developer to maintain an equal partnership, because if the absolute level of the equity in the project is low, the required investment from the weaker partner is also low.

Why Investors Use Project Finance?

7- Unequal Partnerships: Thanks to high leverage, the relatively small amount of equity required for a major project where project finance is used enables parties with different financial strengths to work together. It would be quite normal for example, for the investors to consist of a financial investor (say an infrastructure fund), a construction company, and a maintenance company, whose balance-sheet strengths would probably be very different, but with each bringing particular skills to this partnership.

8- Long-Term Finance: Project-finance loans typically have a longer term than corporate finance. Long-term financing is necessary if the assets financed normally have a high capital cost that cannot be recovered over a short term without pushing up the cost that must be charged for the project's end product. So, loans for power projects may run for nearly 20 years, and for infrastructure projects even longer.

Why Investors Use Project Finance?

9- Enhanced Credit: A company's credit rating is less likely to be downgraded if its risks on project investments are limited through a project-finance structure. Also, if the Offtaker has a better credit standing than the investor, this may enable debt to be raised for the project on better terms than the investor would be able to obtain from a corporate loan.

10- Reduces Need for Outside Investors: Another important factor encouraging a high level of debt in Project Companies is the more equity that is required, the more complex the project becomes to manage (especially during the bidding and development phases), if the result of having to raise more equity is that more investors have to be brought in. Moreover, if more investors have to be brought in, this means that the original developers may lose control of the project.

Why Investors Use Project Finance?

11- Tax Benefits: A further factor that may make high leverage more attractive is that interest is tax deductible الأرباح الموزعة للمساهمين الفائدة قابلة للخصم الضريبي in many countries, whereas dividends to shareholders are not, which makes debt even cheaper than equity, and hence encourages high leverage.

12- Off-Balance-Sheet Financing: If the investor has to raise the debt and then inject it into the project, this will clearly appear on the investor's balance sheet. A project-finance structure may allow the investor to keep the debt off its consolidated balance sheet, but usually only if the investor is a minority shareholder in the project—which may be achieved if the project is owned through a joint venture.

Why Investors Use Project Finance?

13- Transparency. The Offtaker/Contracting Authority may benefit , as a project financing is self-contained (*i.e.* it deals only with the assets and liabilities, costs, and revenues of the particular project), the true costs of the product or service can more easily be measured and monitored.

14- Third-Party Due Diligence. The Offtaker/Contracting Authority may benefit from the independent due diligence and control of the project exercised by the lenders, who will want to ensure that all obligations under the Project Agreement are clearly fulfilled and that other Project Contracts adequately deal with risk issues.

Due diligence is an audit or investigation, which a company of the potential product or investment conducts. It reviews all financial records. It is a final precaution measure one undertakes, before entering into an agreement with another party.

Resources:

Principles of Project Finance

By: E.R. Yescombe

Second edition

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