THE SSH GUIDE TO PROJECT FINANCE

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INTRODUCTION TO PROJECT FINANCE

While riding on a high-speed train through Japan, Europe or China, a passenger may see wind turbines scattered throughout the countryside or monumental impressive bridges. Without realizing it, the passenger is likely to have benefitted from infrastructure projects that have been financed by a **mechanism** called Project Finance. The high-speed rail, the wind turbine and the bridge are all large and complex infrastructure ventures. These projects can be made possible through traditional financing methods; however, infrastructure projects are increasingly financed by this project finance mechanism that engages a multitude of participants including multilateral organizations, governments, regional banks, and private entities. In project finance, **participants** negotiate amongst themselves to spread risks associated with an undertaking, thereby increasing the chances for success in developing vital infrastructure projects.

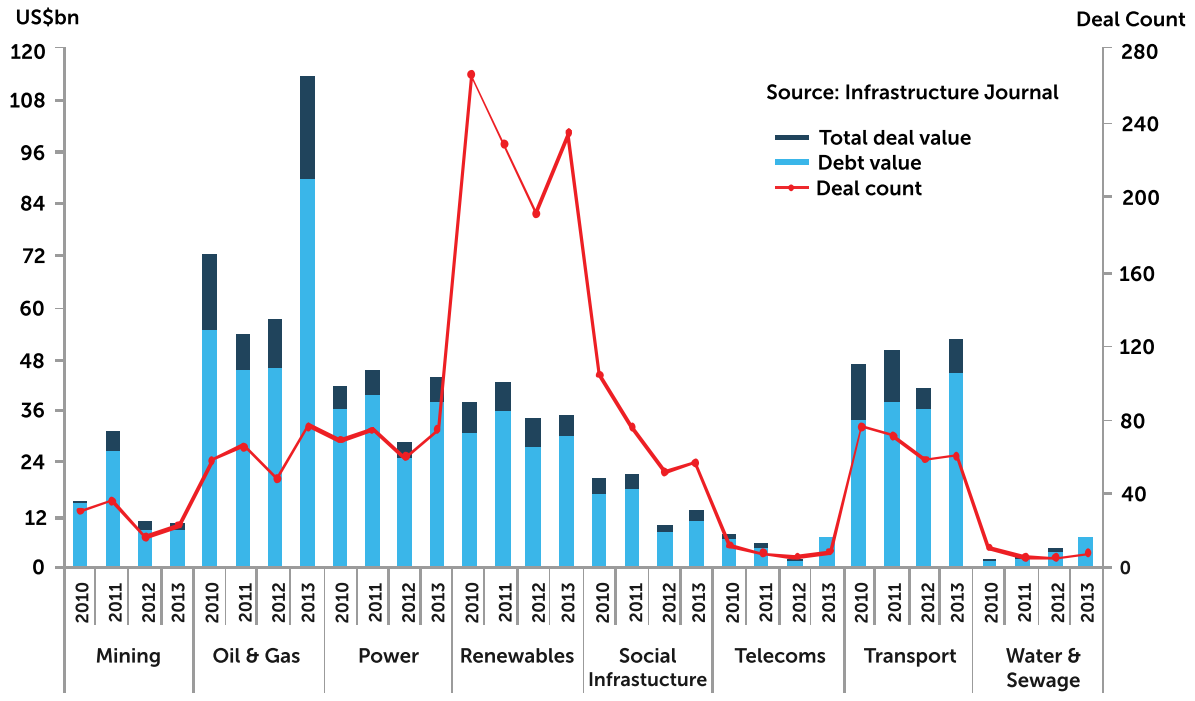
Project finance is the preferred financing mechanism for large infrastructure projects that are essential for developing countries, emerging economies, and developed countries alike. This article will define project finance and compare it to traditional corporate finance, present project finance participants, and discuss the financing mechanism. It will also address the advantages and risks associated with project finance and provide insight into the future of project finance.

WHAT IS PROJECT FINANCE?

The 20th century was marked by a reliance on the public sector for developing infrastructure projects. Historically, governments initiated infrastructure projects to develop or build essential facilities so that citizens and businesses could conduct various operations and experience economic growth. In the last two decades, however, there has been a shift in the model of development from the public sector to greater private sector participation. These public-private partnerships (PPP) have been instrumental in upgrading existing facilities and creating new infrastructure in various industries and in all parts of the world. The most common method of financing PPPs is project finance.

Most authors agree on defining project finance as financing that is basically a function of the project's ability to repay the debt contracted, where the lender considers future cash flow revenues as being the primary source of loan reimbursement. It does not depend on the soundness and creditworthiness of the sponsors (parties investing equity in the project). Besides, approval does not even depend on the value of assets sponsors are willing to make available to financers as collateral.

Today, various sectors employ project finance, including power, transportation, oil and gas, telecommunications, renewables, mining, industry, water and sewage. The following graph confirms that the project finance market continues to be dominated by the power, oil & gas, renewables and transportation projects. These sectors are highly capital intensive, form essential pieces of national infrastructure, have long asset lives and typically have predictable revenue streams, making them ideal assets for project financing :



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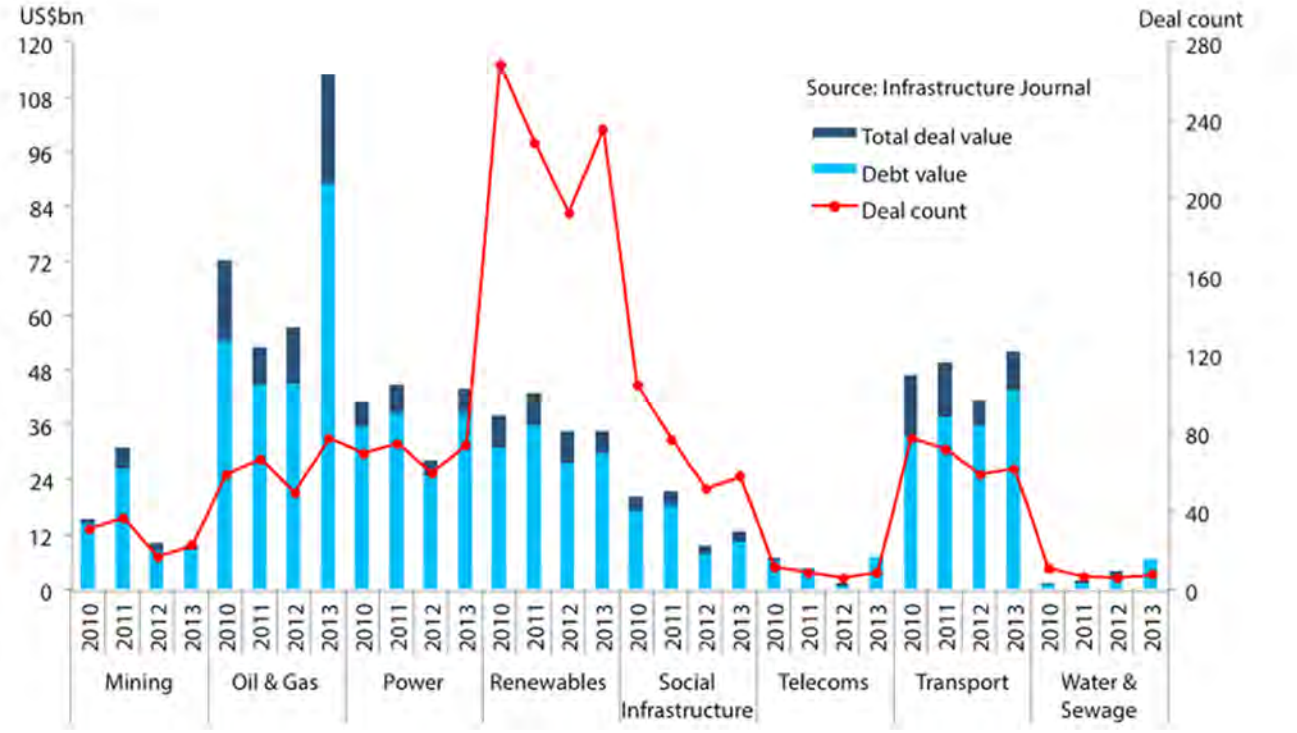


Examples of these sectors include:

• Energy. Project finance is used to build energy infrastructure in industrialized countries as well as in emerging markets.

• Oil & Gas. Development of new pipelines and refineries are also successful uses of project finance. Large natural gas pipelines and oil refineries have been financed with this model. Before the use of project finance, such facilities were financed either by the internal cash generation of oil companies, or by governments.

• Mining. Project finance is used to develop the exploitation of natural resources such as copper, iron ore, or gold mining operations in countries as diverse as Chile, Ghana and Australia.

• Transport. New roads are often financed with project finance techniques since they lend themselves to the cash flow based model of repayment.

• Telecommunications. The burgeoning demand for telecommunications and data transfer via the Internet in developed and developing countries necessitates the use of project finance techniques to fund this infrastructure development.

• Other. Other sectors targeted for a private takeover of public utilities and services via project finance mechanisms include pulp and paper projects, chemical facilities, manufacturing, hospitals, retirement care facilities, prisons, schools, airports and ocean-going vessels.

COUNTRY	US $ m	%
1 - India	54,801.70	26.32%
2 - Spain	17,376.10	8.35%
3 - Australia	14,592.10	7.01%
4 - United States of America	13,423.80	6.45%
5 - United Kingdom	13,020.80	6.25%
6 - Taiwan	12,064.40	5.80%
7 - Saudi Arabia	10,000.20	4.80%
8 - Switzerland	5,371.20	2.58%
9 - France	5,350.70	2.57%
10 - Italy	5,014.50	2.41%
Top 10 Total	**151,015.50**	**72.54%**
Global total	**208,173.90**	**100.00%**

Project Finance Transactions by Country (2010)

The following list provides common features of project finance transactions:

Capital-intensive. Project financings tend to be large-scale projects that require a great deal of debt and equity capital, from hundreds of millions to billions of dollars. Infrastructure projects tend to fill this category.

Highly leveraged. These transactions tend to be highly leveraged with debt accounting for usually 65% to 80% of capital in relatively normal cases.

Long term. The tenor for project financings can easily reach 15 to 20 years.

Independent entity with a finite life. Project financings frequently rely on a newly established legal entity, known as the project company, which has the sole purpose of executing the project and which has a finite life. In many cases the clearly defined conclusion of the project is the transfer of the project assets.

Non-recourse or limited recourse financing. This means that there is no or limited recourse to the project sponsor's assets for the debts or liabilities of an individual project. Financing therefore depends purely on the merits of a project (understand cash flow revenues here) rather than the credit- worthiness of the project sponsor.

Controlled dividend policy. The project has a strictly controlled dividend policy, though there are exceptions because the dividends are subordinated to the loan payments. The project's income goes to servicing the debt, covering operating expenses and generating a return on the investors' equity. Usually, no reinvestment is allowed.

Many participants. These transactions frequently demand the participation of numerous international participants. It is not rare to find over ten parties playing major roles in implementing the project.

Allocated risk. The goal of this process is to match risks and corresponding returns to the parties most capable of successfully managing them. For example, fixed-price, turnkey contracts for construction which typically include severe penalties for delays put the construction risk on the contractor instead on the project company or lenders.

Costly. Raising capital through project finance is generally more costly than through typical corporate finance avenues. The greater need for information, monitoring and contractual agreements increases the transaction costs. Furthermore, the highly-specific nature of the financial structures also entails higher costs and often include premiums for country and political risks.

PROJECT FINANCE VS. CORPORATE FINANCE

In traditional or corporate finance, the sponsoring company (the company building the project) typically procures capital by demonstrating to lenders that it has sufficient assets on its balance sheets, to use as collateral in the case of default. The lender will be able to foreclose on the sponsor company's assets, sell them, and use the proceeds to recover its investment. In project finance, the repayment of debt is not based on the assets reflected on the sponsoring company's balance sheet, but on the revenues that the project will generate once it is completed.

The sponsoring company must consider several factors when determining whether to use a corporate or project finance structure. Such considerations include the amount of capital needed, the risks involved (political risks, currency risks, access to materials, environmental risks, etc.) and the identity of the participants (government, multilateral institution, regional bank, bilateral institution, etc.).

Project finance greatly minimizes risk to the sponsoring company, as compared to traditional corporate finance, because the lender relies only on the project revenue to repay the loan and cannot pursue the sponsoring company's assets in the case of default. However, a sponsoring company can only use project finance where it can demonstrate that revenue streams from the completed project will be sufficient to repay the loan.

The following chart summarizes the key differences between the two types of financing:

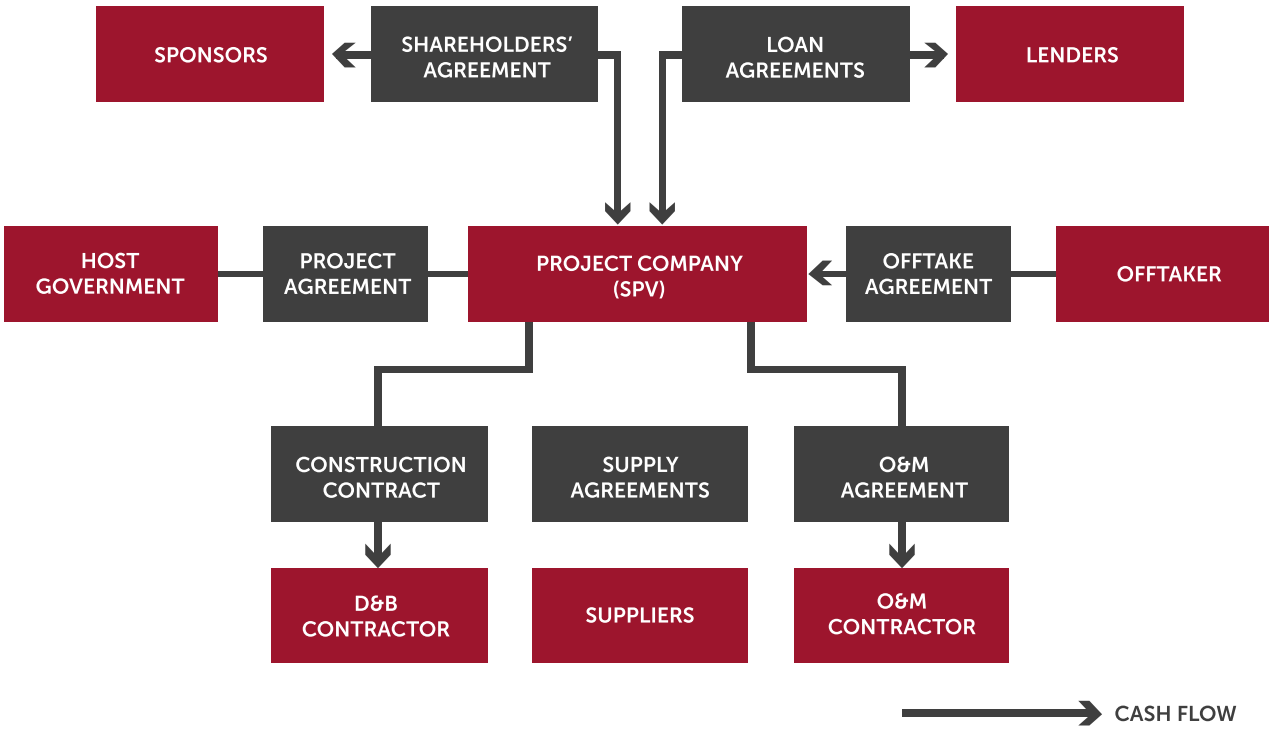
DIMENSION	CORPORATE FINANCE	PROJECT FINANCE
Type of Capital	Permanent - an indefinite time horizon for equity	Finite - time horizon matches life of project
Dividend policy and reinvestment decisions	Corporate management makes decisions autonomous from investors and creditors	Fixed dividend policy - immediate payout; no reinvestment allowed
Capital investment decisions	Opaque to creditors	Highly transparent to creditors
Financial structures	Easily duplicated; common forms	Highly-tailored structures which cannot generally be re-used.
Transaction costs for financing	Low costs due to competition from providers, routinized mechanisms	Relatively higher costs due to documentation and longer gestation period.
Size of financing	Flexible	Might require critical mass to cover high transaction costs
Basis for credit evaluation	Overall financial health of corporate entity; focus on balance sheet and cashflow	Technical and economic feasability; focus on project's assets, cash flow and contractual arrangements
Cost of capital	Relatively lower	Relatively higher

Corporate vs. Project Finance

Let's dig a little deeper now to see who are the many participants in project finance and understand their roles.

PARTIES TO A PROJECT FINANCING

Project finance transactions are complex transactions that often require numerous players in interdependent relationships. Because of this complexity, not all projects follow the same structure and not all of the participants described below partake in all projects. A typical project finance structure looks like as follows:



Typical project finance structure: principal parties and various contracts

The description of each of the parties involved is as follows:

Project Company. The project company is the legal entity that will own, develop, construct, operate and maintain the project. The project company is generally an SPV (Special Purpose Vehicle) created in the project host country and therefore subject to the laws of that country (unless appropriate 'commissions' can be paid so that key government officials can grant 'exceptions' to the project) . A project company can be created in one of two ways:

- when the host government solicits bids and selects the best candidate among the bidders;
- or a company or group of companies may initiate a project on their own, with or without soliciting host government involvement.

However, most projects have government involvement and backing. The SPV will be controlled by its equity owners.

Sponsors. The equity investor(s) and owner(s) of the Project Company can be a single party, or more frequently, a consortium:

- Industrial sponsors, who see the initiative as linked to their core business
- Public sponsors (central or local government, municipalities, or municipalized companies), whose aims center on social welfare
- Contractor/sponsors, who develop, build, or run plants and are interested in participating in the initiative by providing equity and/or subordinated debt
- Purely financial investors

Lenders. Typically including one or more commercial banks and/or multilateral agencies and/or export credit agencies and/or bond holders.

Host Government. It is the government of the country in which the project is located. The host government is typically involved as an issuer of permits, licenses, authorizations and concessions. It also might grant foreign exchange availability projections and tax concessions. It might also be involved as an off-take purchaser or as a supplier of raw materials or fuel.

Offtaker. More typically found in utility, industrial, oil & gas and petrochemical projects. One or more parties will be contractually obligated to 'offtake' (purchase) some or all of the product or service produced by the project.

Suppliers. One or more parties provide raw materials or other inputs to the project in return for payment.

Contractors. The substantive performance obligations of the Project Company to design and build (D&B), and operate the project will usually be done through engineering procurement and construction (EPC) and operations and maintenance (O&M) contracts respectively.

The description of each of the contracts/ agreements is as follows:

Shareholders' agreement. A shareholders' agreement sets out the respective rights and obligations of the sponsors with respect to each other and the project company, with a strictly controlled dividend policy. In project financing, special attention is paid to the handling of potential conflicts of interests. This is especially the case where both private sector sponsors and the host government are equity holders.

Loan agreements. A credit agreement is the principal legal document between the banks and the project company that details the express terms on which the banks will advance funds to the project company together with any associated security documents. Some of the issues parties will need to consider are:

- the currency of the loans (should they be denominated in the principal currency of expenditure or the currency of the projected revenues?);
- the manageability of the drawdown and reporting requirements from the project company's point of view;
- and whether any control amount requirements reflect local legal requirements.

Offtake agreement. Revenue risk can be managed through an offtake agreement between the host government authority/power distribution company and the project company by providing the project company with a sufficient pre-determined revenue stream to ensure payment of its project obligations, operating costs and a return for its sponsors. An offtake agreement will typically take the form of a "take-or-pay" agreement, which provides that the offtaker has the option of either taking the project's product or paying for the product (even if it is not taken) at the agreed tariff. Long-term agreements such as these would normally be entered into for gas or electricity generation projects, since sales would not be made on a spot or retail market.

Construction agreement. A construction contract between the project company and the construction company will typically be in the form of a comprehensive turnkey contract, which should ensure that the contractor will deliver a completed and operational facility. The turnkey model provides for the project, capable of meeting its projected operating standards and contractual obligations, to be handed over and be ready for immediate operation. For that reason, it is not unusual for sponsors to try and shift all completion-related risks onto the contractor.

Supply agreements. A supply agreement between the project company and the supplier varies in sensitivity depending on the raw material or fuel used by a project and the source and ownership of supplied material. Security of supply and price certainty is of key importance for the project. It is also important that pricing and adjustments of terms are capable of being passed through under the offtake agreement in order to protect the project's revenue projections and debt servicing capacity.

Operating and maintenance (O&M) agreement. An operating and maintenance agreement between the project company and the operator
allocates facility operational risks and aims to ensure that the operator meets performance guarantees tied to maximizing revenues.

Project agreement. A project agreement between the host government and the project company depends on the degree of the government's involvement. Two major cases usually occur :

- The host government agrees to be the offtaker, purchasing all or part of the output of the project, sometimes at a set price. These projects are often in the energy, oil and mining industries, where a product or service is the output. For the provision of public facilities where usage risk inherently cannot be transferred to the private sector, such as schools and hospitals, the private-sector investor is paid by the host government for constructing the facility to the required specification and making it available for the period of the contract, as well as for provision of services such as maintenance, cleaning and catering.

- The host government can enter in a Concession Agreement with the project company, which allows the collection of tolls from users; it does not usually involve any payment by or to the host government.

Let's focus now on the motivations of each party to choose to invest through project finance.

PARTIES' MOTIVATIONS FOR PROJECT FINANCING

Project financing is predicated on the equitable allocation of risks between a project's stakeholders through various contractual relationships between the parties. A well-structured project provides a number of compelling reasons for stakeholders to undertake project financing as a method of infrastructure investment:

Sponsors

In a project financing, because the Project Company is an SPV, the liabilities and obligations associated with the project are one step removed from the Sponsors. This provides a number of structural advantages to the Sponsors, including:

- **Limited Recourse.** A default under a corporate loan may enable the lender 'recourse' to (i.e. seek remedy against) the assets of the company. In a project financing, a Lender's only recourse is to the assets of the Project Company. This is an important consideration given the magnitude of the financing for many infrastructure investments may be far greater than the corporate balance sheets of the Sponsors. Notwithstanding the above, it would be inaccurate to assume that project financing is always non-recourse to the shareholders, as commonly other forms of support in the form of contingent equity and partial or full completion guarantees may be provided directly by the Sponsors to the Project Company.

- **High leverage.** A project financing is typically a highly leveraged transaction – it is rare to see a Project Company financed with less than a 60/40 debt/equity ratio and in certain sectors such as social infrastructure, it is not uncommon for projects to be 90% debt financed. The key advantages to Sponsors of this high leverage, include:

  - Lower initial equity injection requirements, thereby making the project investment a less risky proposition;

  - Enhanced shareholder equity returns; and

  - Debt finance interest may be deductible from profit before tax (PBT), thereby further reducing the (post tax) weighted average cost of capital of the Project Company.

- **Balance sheet treatment.** In a traditional corporate lending structure, the capacity of a corporation to raise debt financing is constrained by the strength of its balance sheet, commonly assessed by prospective lenders through various financial performance ratios such as Net Debt/EBITDA. Project financing allows the shareholders to book debt off balance sheet, although the extent to which this is achievable will generally be determined on the basis of the extent to which the Sponsor is determined to control the asset, with reference to the specific shareholding structure of a project and the contractual terms of any concession agreement.

Host Government / Procuring Authority

Considerable advantages are presented to governments through adopting PPP frameworks as a method of infrastructure procurement:

- **Fiscal optimization.** Traditional methods of infrastructure procurement require the government finance construction. PPP transfers the financing responsibility to the private sector, thereby allowing the government to amortise the cost of the asset over the term of the concession. The amortisation period will depend on the tenor of the financing achievable for the asset but 20 year commercial facilities are not uncommon in certain sectors.

- **Process efficiency.** PPP has been shown as a way of eliminating inefficiencies from governmental infrastructure procurement, through tighter contracting and increased rigour of execution.

- **Performance risk.** Under a PPP relationship, the risks of constructing and operating the asset are passed to the private sector through the head and sub contracts and the private sectors Sponsors are heavily incentivised financially to ensure full asset performance.

Lenders

As with any form of financing, lenders to a project financing extract a return commensurate with the level of risk. In itself this is a motivation for any form of lending. Lenders to a project financing also typically extract additional returns through the provision of the associated products and services required by the Project Company (e.g. project accounts, trustee roles, hedging and advisory services).

The revenue stream can come from either the users of the project, or from the offtakers.

USER OR OFFTAKER REVENUE STREAM?

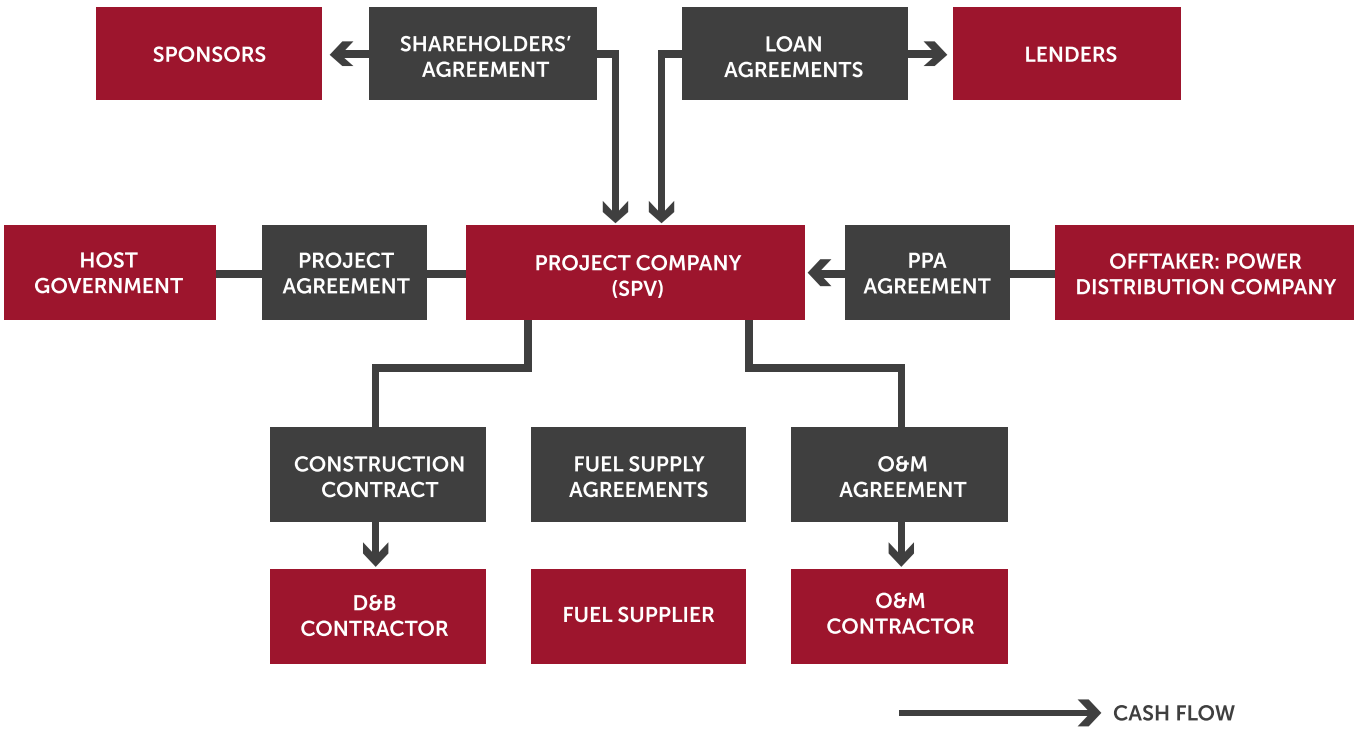
The private sector will seek a secure revenue stream to ensure repayment of debt (and hence lower interest rates) and profitability over time. Given the limited sources of revenues, and structure of financing, any reduction in revenues has a direct and significant impact on the ability of the project company to repay debt and on the return the shareholders will earn on their investment. Therefore, when structuring a project, the private sector will want to see a clearly defined revenue stream, limiting as much as possible the risk that calculations of revenues or tariffs will not achieve the levels anticipated.

We can categorize the source of revenue as follows:

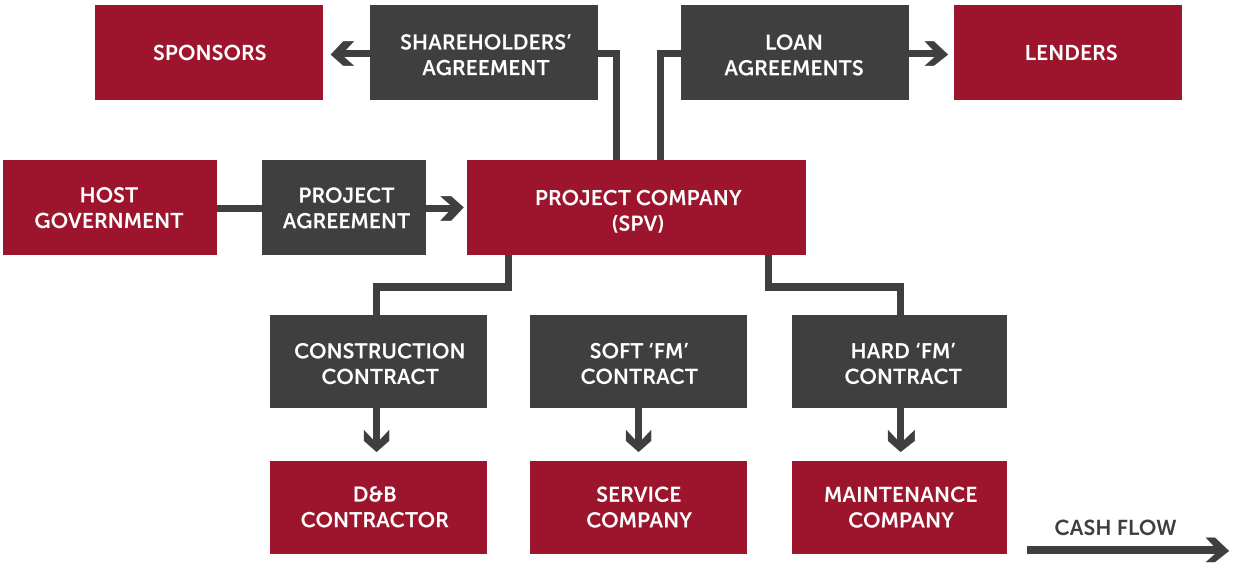
- **Offtaker revenue stream.**

The revenue stream originates from one offtaker/host government. An offtaker is a single buyer who commits to buying all the project company's output, based on long-term purchase contracts often signed on a take-or-pay basis (the offtaker commits to buying a good or service produced by the SPV and is obligated to pay even if it does not actually take a good or service). This structure provides the project company with simplified billing and collection, and assessment of credit risk.

In the power industry, for example, the output of a given plant is sold on a long-term basis to one buyer or a few buyers. It is usually a Power Purchase Agreement (PPA) that is signed between the SPV and the offtaker. This contract structure is based on long-term agreements between private investors and a public counterparty or an entity linked to the public administration that essentially poses no credit risk. The following figure shows a typical project finance structure, with a PPA agreement:



In the health field, for example, users do not pay for hospital services; instead, relative costs are covered directly by a branch of the public administration. The project company enters a 'Soft' Facilities Maintenance ('FM') Contract, under which a Service Company provides services such as security, cleaning and catering for the hospital. There is also a 'Hard' FM Contract, under which a maintenance company (or the original D&B contractor) provides building-maintenance services. See the figure below for project structure:

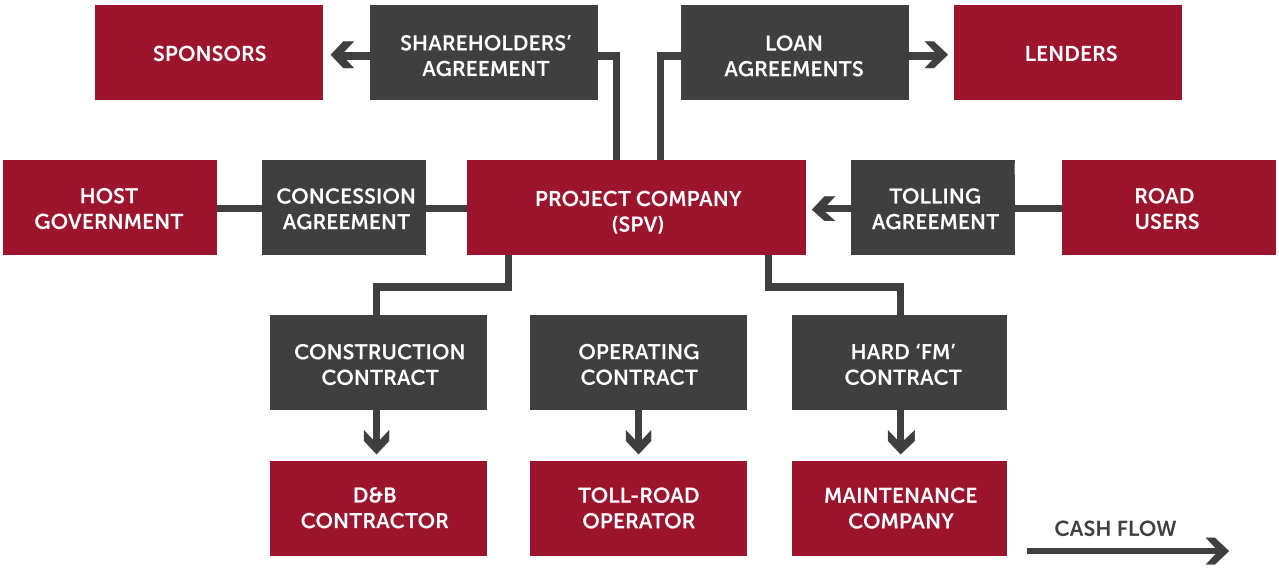


Typical project finance structure with Host Government as offtaker

- Users revenue stream.

This relates to a revenue stream sourced from consumers. A project company with a user's revenue profile will face more complex billing, collection and credit risk due to the interfaces with consumers and the large number of offtakers. This complexity will complicate the due diligence process, requiring to assess demand profiles, collection rates, opportunities to improve billing and collection and assessment of late payments and the ability to sanction nonpayment and non-performing debts.

In the highways industry, users of the newly constructed road will pay tolls to repay the debt. The following figure shows the main contractual and financing building blocks for a road Concession:



Typical project finance structure with road users as principal source of revenues

TYPES OF PUBLIC-PRIVATE PARTNERSHIPS

Various types of PPPs are in use around the world. In general, in PPPs the constructor is not paid by the government agency to construct the project but instead obtains its own financing for construction. In some countries, Build-Operate-Transfer (BOT) projects are often used. Under these agreements, a concession is granted to a contractor to design, finance, operate, and maintain a facility for a period, usually between 10 and 30 years. This is usually applied to large infrastructure projects such as highways. The contractor recoups the cost of the project by collecting tolls during the life of the concession period. Typically, at the end of the operating period, all operating rights and maintenance responsibilities revert to the government.

There are several contractual methods related to BOT. These include Build-Transfer-Operate (BTO), Build-Own-Operate-Transfer (BOOT), and Build- Own-Operate (BOO). With a BTO contract, a private developer finances and builds a facility and, upon completion, transfers legal ownership to the sponsoring government agency. The agency then leases the facility back to the developer under a long-term lease. During the lease, the developer operates the facility and has the opportunity to earn a reasonable return from user charges.

With BOOT, ownership of the facility rests with the constructor until the end of the concession period, at which point ownership and operating rights are transferred free of charge to the host government. BOO projects resemble outright privatization of a facility. BOO projects are sometimes let with no provision of transfer of ownership to the host government. At the end of a BOO concession agreement, the original agreement can be renegotiated for a further concession period.

There are a myriad of possible contractual relationships that can be employed using PPPs. Design-Build-Finance-Operate (DBFO) contracts are frequently used in Great Britain for highway projects. The DBFO partner finances the project and is granted a long-term right of access, usually 30 years. The DBFO partner is compensated through specified service payments during the life of the project. For highways, this is expected to include traffic-related payments based on "shadow tolls." "Shadow tolls" are payments made by the host government to the contractor on the basis of traffic flows at predetermined points along the roadway.

A main difference between DBFO and a BOT arrangement is that no actual tolls are collected from road users. In a BOT arrangement, the private sector recovers its costs through toll or fee collection, and there is no cost to the government for the construction of the project. With DBFO, the cost of the project, in the form of annual payments, is still ultimately paid by the host government. This means that there is still a cost to the taxpayer with a DBFO arrangement. However, the cost of a DBFO project is less than the traditional method because efficiencies from private operation and construction reduce the overall cost of the project. A DBFO contract typically offers some protection to the private sector operator in the event that the public sector partner changes the conditions under which the road operates. This provides protection if other competing roads are upgraded during the contract period, thus reducing traffic flows.

The figure below shows the spectrum of privatization that is possible using PPPs.

← Public-Private Partnership (PPP) →					
Contract Type	**Design—Build-Finance-Operate (DBFO)**	**Build-Transfer-Operate (BTO)**	**Build-Operate-Transfer (BOT)**	**Build-Own-Operate-Transfer (BOOT)**	**Build-Own-Operate (BOO)**
Construction	Private Sector	Private Sector	Private Sector	Private Sector	Private Sector
Operation	Private Sector	Private Sector	Private Sector	Private Sector	Private Sector
Ownership	Public Sector	Private Sector during construction, then Public Sector	Private Sector during Contract, then Public Sector	Private Sector during Contract, then Public Sector	Private Sector
Who Pays?	Users or Offtaker	Users or Offtaker	Users or Offtaker	Users or Offtaker	Users or Offtaker
Who is Paid?	Private Sector	Private Sector	Private Sector	Private Sector	Private Sector

Private/Public sector breakdown by type of PPP

DBFO	Design—Build-Finance-Operate	A constructor is responsible for the design, construction, maintenance and financing. The constructor is compensated by specific service payments from the government during the life of the project.
BTO	Build-Transfer-Operate	A private developer finances and builds a facility and, upon completion transfers legal ownership to the sponsoring government agency. The agency then leases the facility back to the developer under a long-term lease. During the lease, the developer operates the facility and earns a reasonable return from user charges.
BOT	Build-Operate-Transfer	A concession is granted to a constructor to design, finance, maintain, and operate a facility for a period of time. The constructor recoups the cost of the project by collecting tolls during the life of the concession period.
BOOT	Build-Own-Operate-Transfer	Ownership of the facility rests with the contractor until the end of the concession period, at which point ownership and operating rights are transferred to the host government.
BOO	Build-Own-Operate	Resembles outright privatization. Projects of this type are often left with no provision for the return of ownership to the government

Definition of the different types of PPPs

Let's take a closer look now at the different steps that occur in project finance.

TYPICAL STEPS IN PROJECT FINANCE

Step 1: Pre-bid stage

Bidding process. A host government will typically be legally required to initiate a formal tender process for private sector involvement in the proposed project. A company or consortium of companies will be invited to bid for the right to implement the project as the private sector Sponsor (shareholder) in the Project Company.

Alternatively, a private entity may, under its own initiative, submit an unsolicited proposal to a host government proposing a specific project. If the project is of interest, the two parties directly negotiate the terms of a license or concession without undergoing a formal tender. Chile's concession system allows the government to offer a bid premium to good ideas in unsolicited proposals.

Feasibility studies. The private sector Sponsor assesses project viability (technical, legal, environmental, etc.).

Step 2: The contract-negotiation stage

The project participants negotiate and formalize agreements defining the technical, economic, and commercial outlines of the project. The risk sharing provisions of the documents are usually structured in such a way as to remove risk from the project vehicle and allocate it to someone else in a better position to absorb it.

The sponsor is not able to approach the financial markets until the end of the contract negotiation stage of project development.

Project agreements. Engineering, procurement and construction (EPC) contract, Operations and maintenance (O&M) agreement, Input supply contract.

Securing revenue. If the project is completed on schedule and within budget, its economic and financial viability will depend primarily on the marketability of the project's output. In the absence of an Offtake agreement, the sponsor may commission a market study of projected demand over the expected life of the project. The study must confirm that, under a reasonable set of economic assumptions, demand will be sufficient to absorb the planned output of the project at a price sufficient to recover full cost of production, enable the project to service debt, and provide an acceptable rate of return to equity investors.

Financial model. A financial model will be produced that reflects the provisions made and reached at in the project agreements, which also contain reasonably accurate assumptions with regard to cost financing. The developer will focus on the level of projected distributions, their pace and timing, and the acceptability of the project's resulting internal rate of return (IRR). The financial model often considers, through sensitivity analyses, any weakness that may result from construction delays, cost overruns, adverse regulation, inefficiency of the facility relative to

Step 3: Money-raising stage

The money-raising stage begins once all project agreements are initialed and ends at the time the facility is build and commissioned. At this stage, the sponsor mobilizes the required financing and supervises the management organization, construction, and successful commissioning of the facility.

Until financial closing is reached, the sponsor is responsible for all development costs.

Sources of finance. All sources of private debt in the capital and credit markets are at least theoretically available to projects located in industrialized countries as well as developing countries that are rated investment grade. In contrast, only multilateral, bilateral and export credit agency debt are available to projects located in middle- and low-income developing countries that are not investment grade.

Finance-ability. The project must generate enough cash flow so as to give lenders a margin of safety with respect to its debt service obligations.

Debt-to-equity ratio. In general, the lowest cost of capital will be achieved when debt is maximized as a percentage of total capitalization and the amortization schedule for the project debt is matched, as closely as the financial markets will permit, to the cash flows of the project. The appropriate project debt-to-equity ratio depends very much on the strength of the off-take agreement. A strong off-take agreement will permit the sponsor to achieve a debt-equity ratio as high as 3. In contrast, the absence of an off-take could result in a ratio of 1.5 or lower.

Construction. Usually the sponsor does not begin construction until financing is secured. Once construction begins, draws from loan commitments usually match the schedule of construction expenditures. Matching minimizes warehousing of excess funds and/or short-term bridge financing.

On the next page we take a closer look now at the different risks involved in PPPs.

KEY PROJECT RISKS

Project finance is subject to several types of risks. It is useful therefore to look at these risks by category and identify their features and characteristics.

Entity risks

Each project finance participant has a different perspective on risk, often based on the role it is playing in the overall project financing structure. The view of risk moreover is subjective and based not only on economic factors but on characteristics relating to the financial condition of the participant. A particular risk, event or condition that is unacceptable to one party may be considered manageable and routine by another. The identification of risks and knowledge of the participants is therefore essential if a project financing is to be assembled successfully. The risk perspective of each participant in a project financing is presented in the following :

Sponsors. The project sponsors' objectives are based on the very reasons the project finance exists. Due to the complexity of project financings, the sponsor is interested in several objectives, such as limiting further development costs, minimizing transaction costs, recovering development stage expenses and earning construction, management, or similar fees to fund project company construction activities for the project. And in the long term, the sponsor is motivated with the cash flow generation potential of the project. The sooner the project financing comes on stream, the sooner the sponsor benefits from the revenues generated. Thus, the sponsor would want to mitigate any risks which might delay or prevent the project from coming on stream.

Lenders. The lenders are generally concerned with the economic value of the project, and the legal adequacy of the contracts, and enforceability of the contracts in a loan workout scenario.

Overall, the lender attempts to structure a financing that ensures:

- All costs before construction completion are without recourse to lender for additional funds.
- The contractor satisfies performance guarantees, as evidenced by performance tests.
- There is recourse to other creditworthy project participants for delay and completion costs if the project is abandoned and if minimum performance levels are not achieved.
- There are predictable revenue streams that can be applied to service debt.
- The revenue streams are long term, from a creditworthy source and in an amount that covers operating costs and debt service (off-take agreement).
- The project maximizes revenue while minimizing costs, complying with environmental laws in order to maintain long-term viability.

D&B Contractor. The relationship between the sponsors and D&B (Design & Build) contractor is based on the fact that the turnkey nature of the construction project requires the contractor to deliver the project on spec and on time. This means that the contractor is concerned with the difficulty of predicting events that could adversely impact the parameters of the project and avoiding them. There are certain methods of incentivizing the contractor; for example, increasing the construction price or via a bonus payment in the case of early completion. The contractor is also concerned with the underlying financing documents, including whether the sponsor has arranged sufficient financing to pay the contractor for work performed.

O&M contractor. The relationship between the project sponsors and O&M (Operating & Maintenance) contractor is concerned with the need for price and performance predictability of the project. While the other project participants will want to ensure that the operating costs are fixed or predictable so that debt servicing ability can be analyzed, the O&M contractor, in contrast, wants to limit price risk.

The operator can address this risk by agreeing to operate the project according to a budget approved by the project company. The operator moreover agrees to operate the project within the parameters of the agreed-upon performance levels, and according to laws and industry practice.

Suppliers. Suppliers are concerned with the challenges of providing requisite raw materials for the project and seek in return a fair and stable market price. Project participants on the other hand are concerned with quality and timely delivery of the raw materials with minimum price fluctuations.

Offtaker/purchaser. The offtaker is concerned with firm price and quality, and with minimum uncertainty. The project company, in contrast, wants to increase prices as the market will permit, and to be excused from performance failures (without penalties) for limited periods.

Host government. The project can offer the government short term and long term benefits from the project.

- Short term, the government can use the project for political benefits and for attracting other developers to a country.

- Long term, the successful project should improve economic prosperity and, perhaps, political stability, by providing the needed infrastructure.

It is therefore normal that the host country assumes some of the project risks. This is particularly important for large high-profile projects. For example, implementation agreements, negotiated and executed with the host government, can provide a variety of government assurances with respect to the project risks. The host government might be involved in a project in one or several ways. These include as equity contributor, debt provider, guarantee provider (particularly political risks), supplier of raw materials and other resources, output purchaser and provider of fiscal support (reduced import fees, tax holidays and other incentives).

The host government also has an ongoing role. It can ensure a smooth regulatory climate in future by ensuring permit compliance and through regulatory structures.

Transaction risks

The essence of any project financing is the identification of all key risks associated with the project and the apportionment of those risks among the various parties participating in the project. Without a detailed analysis of these project risks at the outset, the parties do not have a clear understanding of what obligations and liabilities they may be assuming in connection with the project and therefore they are not in a position to consider appropriate risk-mitigation exercises at the relevant time.

Should problems arise when the project is under way, it can result in considerable delays, large expenses and arguments as to who is responsible. As a general rule, a particular risk should be assumed by the party best able to manage and control that risk.

Due to the complexity, each project will have a different risk profile, that is, each project will have different kinds of risks and the magnitude of risks will differ from project to project. In general, however, there are some major areas of risks which should be addressed in every project so that they can be mitigated properly.

The following risk matrix sums up the main risks treated below :

RISK PHASE	RISK CATEGORY	NATURE OF RISK
General	Financial	Foreign Exchange Interest Rate Inflation Liquidity
	Country	Political Economic Social
	Legal	Applicable Law Security Permits & Licensing Rights to Appeal Contract Enforceability Structural Risk
Engineering & Construction Phase	Site	Siting & Permitting Facility Site Construction of Related Facilities Public Opposition (Protesters) Environmental Permits & Risks Regulatory. Licensing and Permit Risks
	Construction	Contractor's Experience & Resources Building Materials Cost Overruns
	Completion	Sponsor Risk Pre-Completion Risk Completion Risks Completion Delays
Start-up phase		Pressure to Speed-Up Performance Testing
Operational Phase	Operation	Operating / Performance Risk Raw Material / Supply Risk Offtake and Sales Risk Counterparty Risk Technology / Obsolescence Risk
		Project Company Default Force Majeure

Risk matrix in project finance projects

Preliminary risk assessment

Feasibility studies

The feasibility study is a useful mechanism for setting forth a description of the project, the goals of the project sponsor, sensitivities of the project to various construction, start-up and operating

risks, an analysis of financing alternatives and credit enhancement. It will include estimated capital needs, debt service capabilities, revenue projections from output sales, operating costs and market projections. Typically, variables such as fuel cost fluctuation, interest rates, currency exchange rates and others are examined in alternative scenarios.

The study enables the sponsors and lenders to analyze the potential of the project before any party unnecessarily commits resources when the project is not economically feasible. The study must, of course, conclude that the project will have sufficient viability to pay debt service, operations and maintenance costs provide a return on equity, and, if necessary, provide for contingencies. The feasibility study is useful in that it can be analyzed by various legal, financial and technical experts to establish whether the project if viable or not.

Due diligence

Due diligence in project financing is an important process for risk identification. It encompasses legal, technical, environmental and financial matters, and is designed to detect events that might result in total or partial project failure. Participants involved in this process, besides the project sponsors, are lawyers, construction companies, fuel consultants, market consultants, insurance consultants, financial advisers and environmental consultants. The level of due diligence undertaken involves considerations of time available, cost and the type of project.

Risk periods

There are three main risk periods in a project financing:

• engineering and construction;

• start-up;

• operational.

Engineering and construction phase risks

This first stage is when the risk is highest – funds begin to flow from the financiers to the project entity. No cash flow is being generated from the project, however, no interest can be paid and in many financings the borrower is allowed to 'roll up' interest or draw down further funds to make interest payments. The length of this phase can vary from several months to several years. The lenders become more exposed as funds are drawn down but cash flows have yet to be generated.

Risks associated with the project during the construction phase include:

• **Sponsor risk.** Sponsor risk is closely associated with completion risk. Regarding equity commitment, lenders will normally require a contribution of anything from 15% to 50% of the project cost to ensure the sponsor's continued commitment. In addition, lenders prefer to work with corporate sponsors that have substantial technical expertise and financial depth.

• **Pre-completion risk.** The engineering and design review focuses on the suitability of the technology and design chosen for the project. These objectives recognize that construction risk levels vary among different technologies and the size of certain projects. Banks may well hesitate to finance projects using unproven technology.

• **Siting and permitting.** Site and permitting risks are often linked to political risk, and can present a more difficult area of analysis. Regulations and legislation in some jurisdictions can leave continuous openings for project opponents to stop projects for reasons related, or unrelated, to siting concerns.

• **Completion risks.** In essence, the risk is whether or not the project can be built on time, on budget and in accordance with the applicable specifications and design criteria.

- **Building materials.** A project finance risk often overlooked. Of particular concern is the impact of import and export laws when the project is either located abroad or where imported materials are contemplated for construction.

- **Facility site.** Pre-existing conditions on the project site can affect both construction and long-term operations, especially if the site has hazardous waste problems.

- **Construction of related facilities.** International projects, particularly in developing countries, often require simultaneous construction of facilities related to the project. These various facilities will all be interrelated and may need simultaneous construction to ensure project success.

- **Cost overruns.** The risk that construction costs start to increase uncontrollably is perhaps the most important risk for the participants in a project financing. This may result in liquidity crises, as well as impact on long term cash flows.

- **Completion delays.** Construction delays can have a similar impact to cost overruns, as it may affect the scheduled flow of project revenues and result in higher than expected financing costs.

Start-up risks

During the start-up phase the banks need to be satisfied that the project will operate at the costs and according to the specifications agreed at the outset. The phase is especially significant if the loan becomes 'non-recourse' once the project has been completed.

The basis on which conversion takes place will require much thought and negotiation prior to the loan being signed. At this point, however, it is important to understand that the start-up phase may last for a period of many months. The technical assessment of a project therefore includes an evaluation of the facility's acceptance testing and start-up procedures, since they are an integral part of construction completion.

A potential conflict of interest and therefore risk arises from the need to start commercial operations versus the need to get the project to pass its long-term reliability test. Financial pressures, which often occur near the end of the construction phase, to 'get the job done' may prompt the sponsor to accept a compromised performance test in an effort to generate cash flow as soon as possible.

Operational risks

Once the project is complete the lenders in many project financings become dependent on stable cash flows to service the project loans. The lending risk is similar to the risks encountered in commercial loans in similar businesses. The future cash flows of the project company are subject to the usual operating costs, raw material costs, regulatory risks and markets for the products.

Risks associated with the project during the operational phase include:

- Operating/performance risk. Operational risk is the risk that normal ongoing operations will fail to generate the cash flow required to runthe project and service debt. This is why banks tend to be reassured if the project operations will be taken on by experienced third party operations and maintenance contractors, on a fixed cost basis.

- Raw material/supply risk. This is another key risk category: input and supply risk relates to obtaining the requisite energy and raw materials for the project. The flow of these inputs must be assured, and within the parameters set by the project financial projections. This is why it is important to identify alternate sources should they be needed.

• **Offtake and sales risk.** The offtake and sales risk is the risk that the project will fail to generate sufficient cash flow. This is why the off-take risk, or the sales, is the key risk that banks will look at. Offtake agreements such as long term contracts to purchase electricity at fixed prices will substantially eliminate any sales volatility or instability, and will be considered as a positive element by the banks.

• **Counter-party risk.** Counter-parties include parties such as the contractor, bank providing bonds, purchasers or off-takers, insurance companies, etc. If any of these parties' defaults in the performance of their respective obligations, then the project may run into difficulties.

• **Technology/obsolescence risk.** Banks tend to want to avoid new technology risk until it becomes proven technology. However, project sponsors cannot ignore new technology since often the success of such projects resides in cost efficiencies arising from new technology. Therefore, as a minimum, the contractor must have experience with the technology and provide adequate guarantees to support the underlying debt.

Financial risks

The project is now operating as a regular operating company and cash flow are being generated. As long as the project is performing according to plan, the risks to the lenders will reduce from their peak in the start-up phase. The borrower should not only be able to make interest payments but also repay the principal. As long as correct financial planning has been carried out, the company should be in a position to service debt. In a typical project finance transaction the banks will ensure that they have security over the sales proceeds.

Once the project is on stream, the project financial advisers should identify and mitigate for any risks that may occur outside of the project and scope of the project sponsor's control. Some of these risks are :

• **Foreign exchange (FX) risk.** If all project inputs are denominated on one currency, there will be no FX risk. If this is not the case, the lender may need to assume some of the risk via multi-currency loans, which give the borrower an option, based on a fixed FX rate, of repaying in different currencies. Lenders can sometimes hedge these risks using appropriate hedging instruments.

• **Interest rate risk.** Project financings may rely on floating interest rate loans. Most project financings remove interest rate risk by financing with fixed interest rate debt. Some projects however have incorporated debt with interest rates tied to a floating reference rate. Where projects chose to use floating rate debt, the financial projections should demonstrate that in a high interest rate scenario the project will still have enough available cash flow to service financing commitments.

• **Inflation risk.** This risk exists when certain of the inputs can be subjected to price inflation (e.g. rising fuel costs). In such cases, the project sponsor must be able to pass on these price increases to customers. If the project output is a product whose price levels are fixed by the government (e.g. electricity cost), the ability to pass on the cost increase will be limited. Similar risks exist when the inputs are denominated in one currency and the project outputs in another. Thus it is important to identify any such risks and the ability to pass them on to the customers.

• **Liquidity risk.** Projects should be able to demonstrate the ability to generate sufficient cash to fund major maintenance reserve funds. If not, a potential liquidity risk exists. Financial projections should therefore demonstrate that an adequate cash flow, enabling the company to generate enough cash to fund ongoing operations and fund reserves, exists.

Country/political risks

One can find that country risk can arise through different paths:

- Political events such as war, ideology, neighboring countries, political unrest, revolution, etc. comprise political risk. Political risk is the risk that a country is not willing or able, due to political reasons, to service/repay its foreign debt/obligations.

- Economic factors such as internal and external debt levels, GDP growth, inflation, import dependency etc. comprise economic risk. Economic risk is the risk that a country is not willing or able, due to economic reasons, to service/repay its foreign debt/obligations.

- Social factors such as religious, ethnic, or class conflict, trade unions, inequitable income distribution etc. comprise social risk. Social risk is the risk that a country is not able, or is unwilling, to repay its foreign debt/obligations due to social reasons.

Therefore, when we speak about country risk, we mean the exposure to a loss in cross-border lending (of different types) due to events more or less under the control of the government.

Typical examples of political risk are:

- expropriation or nationalization of project assets;

- failure of a government department to grant a necessary consent or permit;

- imposition of increased taxes and tariffs;

- withdrawal of valuable tax holidays and/or concessions;

- imposition of exchange controls, restricting the transfer of funds to outside the host country;

- changes in law adversely impacting project parties' obligations with respect to the project.

Legal risks

By legal risk is meant that the application of laws in the host country may not necessarily be consistent with that of the lender's home countries, and that judgments may yield results substantially different than those expected. It is therefore essential that project lenders review the legal risks at an early stage. Some banks may require the host country to pass specific legislation favorable to a project, which lends a new meaning to 'interference in domestic affairs'! Getting such legislation implemented no doubt requires numerous cash commissions to key government officials to accelerate lengthy procedures. A breakdown of legal risks includes:

- **Identifying and establishing applicable laws and jurisdiction.** Project finance requires the establishment of a stable legal framework required for ongoing business operation. It is therefore important to identify the strengths and weaknesses of a given legal system and plan for the shortcomings appropriately.

- **Security.** In project finance – particularly where recourse is limited – the ability to take effective security can assume crucial importance. Laws on the taking and enforcement of security, particularly in the case of moveable assets, cash flows and contractual rights (such as receivables) might be less than satisfactory, and should be evaluated.

- **Permits and licensing.** There is a risk when permits and licenses must be obtained and renewed before the plant will operate. Effectively, this means that the lenders are assuming the risk that the requisite permits and licenses will be obtained in a reasonable time should the sponsors not provide any commitment to assume the costs arising from such delays.

- **Limited rights to appeal.** The local lawyers and the judiciary might lack the requisite experience to judge project related disputes; resulting judgments may therefore be slower than expected and, yield unpredictable results.

- **Enforceability of contracts.** Even if a project is supported by take-or-pay contracts with adequate escalation clauses, enforceability may very well be an open question, as well as the ability or motivation of the contracting party to honor its contractual commitments.

- **Structural risk.** This is the risk that the interrelations of project elements may not function as initially envisaged. Complex projects can involve complex and interlocking documents, which may be flawed. Allegiances moreover can shift during the life of a contract.

Environmental, regulatory and approval risks

Obtaining all the requisite approvals for a project is indispensable to its success. Indeed, all permissions should be obtained prior to setting in place the facility and forwarding funds. It is essential that these be included as conditions precedent in the facility documentation. Likewise for environmental and regulatory issues: these should be spelled out clearly in the loan agreement since there is a risk that other regulatory and environmental risks, may live to haunt the lenders if the project should fail and decontamination costs have to be borne by the lender who takes possession of the security in order to satisfy the outstanding loan.

- **Environmental risk.** Environmental risk is increasingly becoming an issue of public concern, and is increasingly being subject to legislation controlling the adverse impact projects and the emissions, waste, hazardous substances and inefficient use of energy they may generate. Lenders need to insulate themselves from these risks.

- **Regulatory, licensing and permit risks.** It is essential that all regulatory, licensing and permits issues are met at the outset of the project since if there are any difficulties and the lenders take possession of the security when a project fails to perform, this may cause difficulties. In the absence of appropriate governmental permits, this may result in fines. In the case of regulatory and licensing issues, the lenders may find themselves liable for the legal consequences of pollution caused by that project.

- **Public opposition.** Public opposition to a project can become an unwelcome nuisance to bankers. Public opposition (via procedural challenges of permits and approvals) can result in costly delays to the project. The feasibility study should therefore consider public opposition as one factor in the chance for project success.

Force majeure

Force majeure means that entities are not responsible for performance shortfalls caused by unanticipated events outside their control. Project finance transactions are particularly vulnerable to force majeure risks due to the complexity of the transactions, the numerous participants in the project, the physical nature of construction activity, associated technical and performance risks, and impact of geographic distance and transport of raw materials.

Sponsors typically will not want to assume those risks and the financing parties should not accept these risks. It is therefore important to segregate risks which are those under the borrower's remit (technical, construction) against natural risks (floods and earthquakes, civil disturbances, strikes, or changes of law). While companies may be exempt from force majeure risks, it should be noted that they may still lead to a default depending on its severity.

The unpredictability of force majeure events makes effective mitigation difficult. Projects that show linearity in design or operations, such as toll roads, pipelines, or assembly line production, tend to be less at risk of operational force majeure accidents than operations which are complex (e.g. chemical plants, LNG facilities, refineries, and nuclear power plants).

Let's take a closer look now at the possible mitigation options in PPPs.

MITIGATION AND RISK ALLOCATION

In the process of risk management, risk is identified and at the same time allocated to the parties involved in the transaction whenever possible. To make sure that all risks are appropriately allocated to various players, lenders take a comprehensive look at the network of contracts with the SPV. Normally, when lenders are solicited for funds, the SPV has already configured risk allocation by means of a series of preliminary contracts and has covered the residual portion of risk with insurance policies. Depending on the method used for covering risk, lenders might ask to reconsider certain terms or renegotiate some contracts. The following reviews the most important risk allocation mechanisms and contracts in use in project finance.

Construction and completion risks

Construction/completion risks can be allocated or mitigated in the following ways:

- **Turnkey contract.** A turnkey, also known as EPC (engineering, procurement, and construction), agreement is a construction contract by which the SPV transfers construction risk of the structure to the contractor in exchange for a set fee. Turnkey arrangements are popular with lenders since the contractor assumes responsibility for the design element of the works, thus simplifying negotiations with only one party for all aspects of the construction works during the construction period.

- **Fixed price lump sum contract.** These reduce the likelihood of cost overruns being the responsibility of the project company. If there are to be any changes to the contract price, this will enable the lenders to protect their position, especially if there are any changes to project specifications by the project company.

- **Completion guarantee.** Pre-completion risks can be covered via the use of a completion guarantee. This is basically a guarantee from one or more of the project sponsors that the loan will be repaid if completion (as defined by certain performance tests) is not achieved by a certain date.

- **Completion test.** Once the project has been completed, the sponsors will wish to be released from whatever undertakings they have made to the lenders. The exact moment at which this happens is determined by the 'completion test'. The terms of the completion test usually involve considerable negotiation between lenders and sponsors.

- **Liquidated damages in construction contracts.** If construction of a project is at a stage where commercial operations cannot be undertaken or the project does not operate after completion at guaranteed levels, the project company will still need to service debt and other obligations. This can occur via 'liquidated damage payments' – these constitute an estimate by the contractor and project sponsor of the shortfall arising from late or deficient performance. The advantage of the liquidated damage clause is to avoid calculation of damages following a dispute. Enforceability of a liquidated damage clause, however, must be carefully considered, particularly in the international context.

Operational risks

Operational risks can be mitigated by the following:

- **Long-term supply contracts.** In many projects, long-term requirements contracts are developed to provide the necessary raw material supply at a predictable price to reduce this risk. In such cases, the lender must ensure that the credit of the supplier be sufficient to ensure performance of the contract.

- **Take-or-pay contracts.** Project financiers can minimize cash flow risk by entering into 'take-or-pay' contracts. This is a contract entered into between the project company and a third party whereby the third party agrees to purchase a specified amount of the project's production over a specified period whether or not it actually takes delivery of them. The advantage to the project entity of course is that it locks in a portion of the production over time at a fixed price – which may be below prevailing market prices but which are stable and locked in over time, thereby facilitating financial planning. The incentive for the off-taker to enter such contracts is the desire to obtain certainty of supply in circumstances and at a price which otherwise might be unavailable to it. The bank's position is considerably strengthened by a take-or-pay contract, as it can ensure that the proceeds of such con- tracts be paid into the lending bank's account, an additional cash flow monitoring mechanism. Note that the off-take purchaser must be credit- worthy if such arrangements are to provide the requisite comfort to the bankers.

- **Take-and-pay contract.** A take-and-pay contract is similar to the take- or-pay contract except that the buyer is only obligated to pay if the product or service is actually delivered. Thus, a take-and-pay contract does not contain an unconditional obligation.

- **Put-or-pay and throughput contracts.** The coverage method for limiting or eliminating supply risk consists in drafting contracts for unconditional supply (put-or-pay agreements or throughput agreements). In these accords, the supplier sells the SPV preset volumes of input at pre-agreed prices. If supply is lacking, normally the supplier is required to compensate for the higher cost incurred by finding another source of input. In this way, sales revenues and supply costs are synchronized.

Financial risks

Financial risk can be reduced or mitigated through the use of derivative instruments. The risks that can be controlled are those associated with funding costs (interests), currency fluctuations when cash flows are not in the home currency and commodity price fluctuations. Examples of derivative instruments include:

- **Futures contracts.** In a project financing, interest rate futures can be used to protect against funding costs and currency future to protect against foreign exchange rate fluctuations.

- **Forward contracts.** Forward contract on foreign exchange are used for hedging existing or anticipated currency exposures. Long-term foreign exchange agreements can be used by project companies manage the currency risk arising from multi-currency transactions.

- **Options.** A call option gives the buyer a maximum price (the strike price) and a put option gives the buyer a minimum price (the strike price) at which the underlying product can be sold. Project companies can therefore use calls and puts to control input and output prices.

- **Swaps.** Swaps can mitigate financial risks. There are currency swaps, interest rate swaps and commodity swaps. An interest rate swap can create a source of lower cost debt or higher yielding assets, and provide access to an otherwise unavailable source of funds. A commodity swap can be used to manage the price risk of the outputs or inputs for a project.

Political risks

It is impossible to mitigate all risks pertaining to a specific project. One way to avoid entering into potentially high risk lending situations, reducing political risk, is to lend through, or in conjunction with, multilateral agencies such as the World Bank, the EDRD and other regional development banks such as the ADB.

The rationale behind this is that when one or more of these agencies is involved in a project, the risk of an uncooperative or unhelpful attitude from the host country is reduced since the host government is unlikely to want to offend any of these agencies for fear of cutting off a valuable source of credit in the future. The default track record of Mexico and Brazil in the 1980s supports this view.

Other ways of protecting against political risk include:

- Private market insurance, although this can be expensive and subject to exclusions rendering the policy's effectiveness next to useless. Moreover, the term that such insurance is available for will rarely be long enough.

- Political insurance from national export agencies (usually be given in connection with the export of goods and/or services by a supplier to the project). Lending in conjunction with national export credit agencies tends to probably enjoy a similar 'protected' status as loans in conjunction with development banks since there is a government element in addition to purely commercial element. Here, 'government involvement', not surprisingly, is seen as a reassuring accomplice rather than the realization of the 'government as the source of all evil and an infringement on capitalist freedom' arguments espoused by ideological zealots.

- Obtaining assurances from the relevant government departments in the host country, especially as regards the availability of consents and permits.

- The central bank may guarantee the availability of hard currency for export in connection with the project provided appropriate individuals are lobbied assiduously.

- Thorough review of the legal and regulatory regime in the country where the project is to be located is essential so as to ensure that all laws and regulations are complied with and all procedures are followed correctly, therefore reducing the scope for challenge at a future date. In countries with primitive legal systems and 'commission hungry' government officials, such ambiguities should be clearly identified in order to enable an accurate risk assessment and loan pricing mechanism to be set in place.

On the next page we take a closer look now at the possible financing mechanisms under project finance.

FINANCING MECHANISMS

Similar to the traditional finance model, a project finance model allows an entity to use equity or debt financing. Most entities in search of investment funds prefer debt financing to equity financing because they retain full control over the project and earn a greater return through the use of debt financing. Debt financing refers to funding a project with a loan, where the SPV takes out a loan and no other investors are involved. In contrast, equity financing requires the project sponsors of the SPV to either contribute cash needed for the project or sell ownership in the SPV to raise capital. In addition to maintaining full control, debt financing is attractive because project sponsors do not have to contribute extra capital to the project.

Equity. Often host governments and debt lenders will require that the entity building the project obtain some equity funding in order to demonstrate project viability in the market and to offset initial costs. There are a number of factors that influence the level of equity in the SPV that will be made available by the sponsoring companies via equity funding and how much of the construction costs the SPV will solicit in the form of loans. Those factors include how the project is organized, who the players are, what the particular risks are in that country, and what legal requirements there may be in the host country. Typically, equity comprises a smaller share compared to debt (although equity-to-debt ratios range from 5% to 50% in project finance).

Debt. There are two main types of debt: Mezzanine and Senior Debt.

Mezzanine Debt: Mezzanine Debt is a special type of debt, which has priority over equity, but is subordinate to other types of loans. Recall the example above of the CBK hydropower station. The mezzanine debt lenders were providing capital in order for one project sponsoring company to purchase the existing project company. If the project fails, senior lenders who were lending to the SPV rather than to the new sponsor company will be paid off first. The important fact to bear in mind is that mezzanine debt refers to debt that is riskier, because there are other outstanding loans that have priority over the mezzanine loan in the case of a default.

Senior Debt: As the name suggests, senior debt has seniority in the event of default. A lender may stipulate that it is a senior debt lender, as the World Bank does for example. This means that in the case of default, that lender will receive payment before other creditors of the project. There are several types of debt available to sponsoring companies:

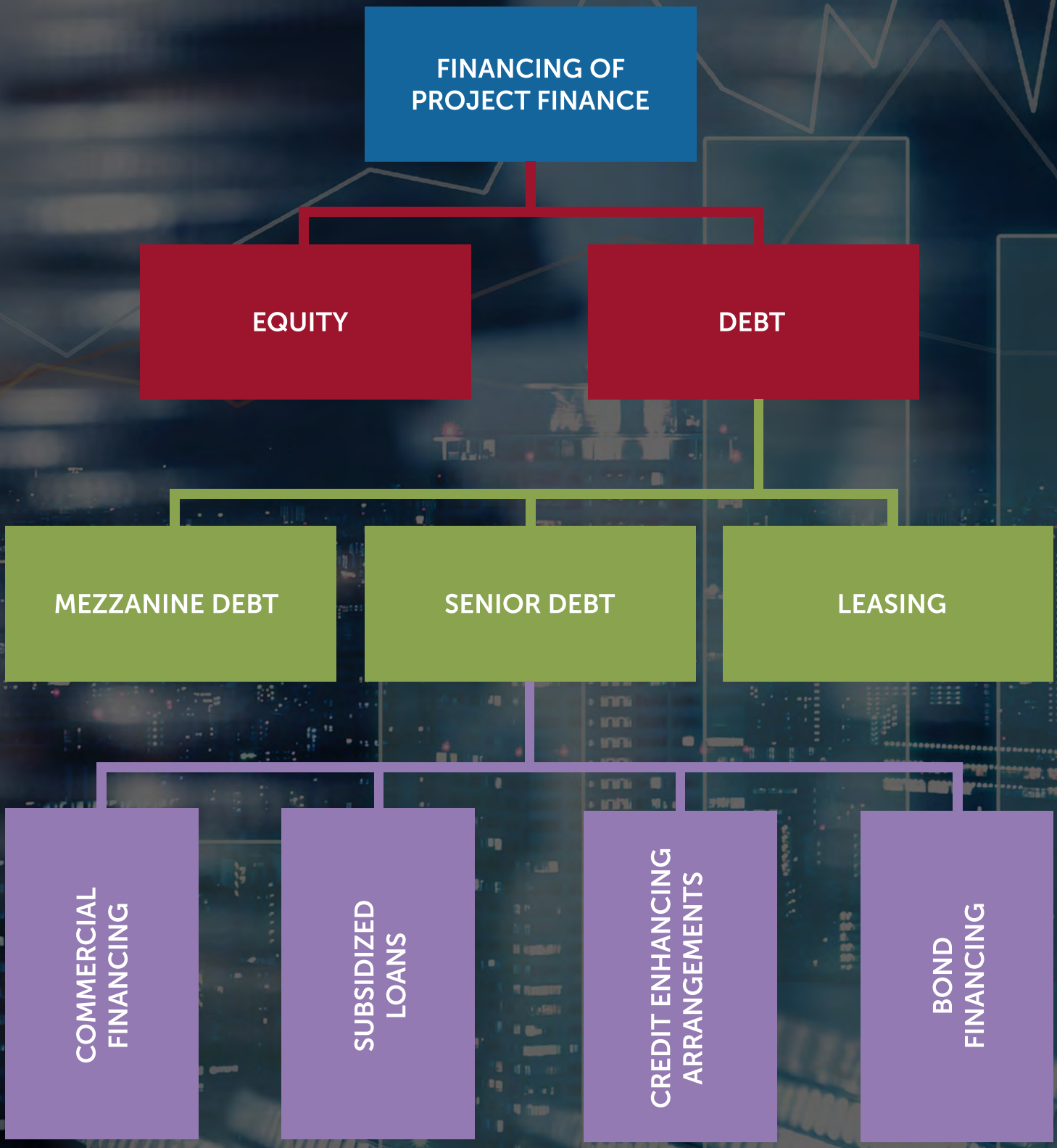
- Commercial financing (commercial banks, pension funds, insurance companies, and other financial institutions), where the lender requires the borrower's promise of repayment to be collateralized (backed by some asset).

- Subsidized loans, where the interest rate is below the market rate. Development institutions, governments, and regional development banks (such as a loan from the African Development Bank) typically provide such subsidized loans.

- Credit enhancing arrangement from bilateral and multilateral organizations and regional banks, where those organizations provide a guarantee to the lender. If the SPV cannot make payments on its debt, then the guarantor will make payments to the lender on behalf of the SPV.

- Bond financing, where the bondholder provides capital in return for a promise by the SPV to repay the initial amount with interest.

Leasing. One other unique method of financing is lease financing where the SPV rents equipment relying on future revenue stream of the project to pay the lease. That is, the SPV does not make immediate payments on the leased equipment, but promises to pay for the equipment once the project begins to generate revenue. Because construction costs are significant, this sort of financing can play an important role in enabling a project to proceed. The company leasing the equipment has a security interest in the equipment and can repossess the equipment in the case of a default. In return for the financing, the SPV may be required to pay additional interest or pay a premium on the cost of renting the equipment.



Financing of project finance

BANKS THAT WE WORK WITH

SSH work with a total of 24 different banks at present, with most of our transactions occurring via:

Helaba Landesbank Hessen-Thüringen, Saving Banks, Real Estate ...

www.helaba.com

BayernLB

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KfW IPEX-Bank

www.kfw-ipex-bank.de

Doha Bank

www.dohabank.qa

Landesbank Berlin AG

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www.db.com

Sparkasse Westmünsterland

www.sparkasse-westmuensterland.de

Commerzbank AG

www.commerzbank.de

IFC - International Finance Corporation

www.ifc.org

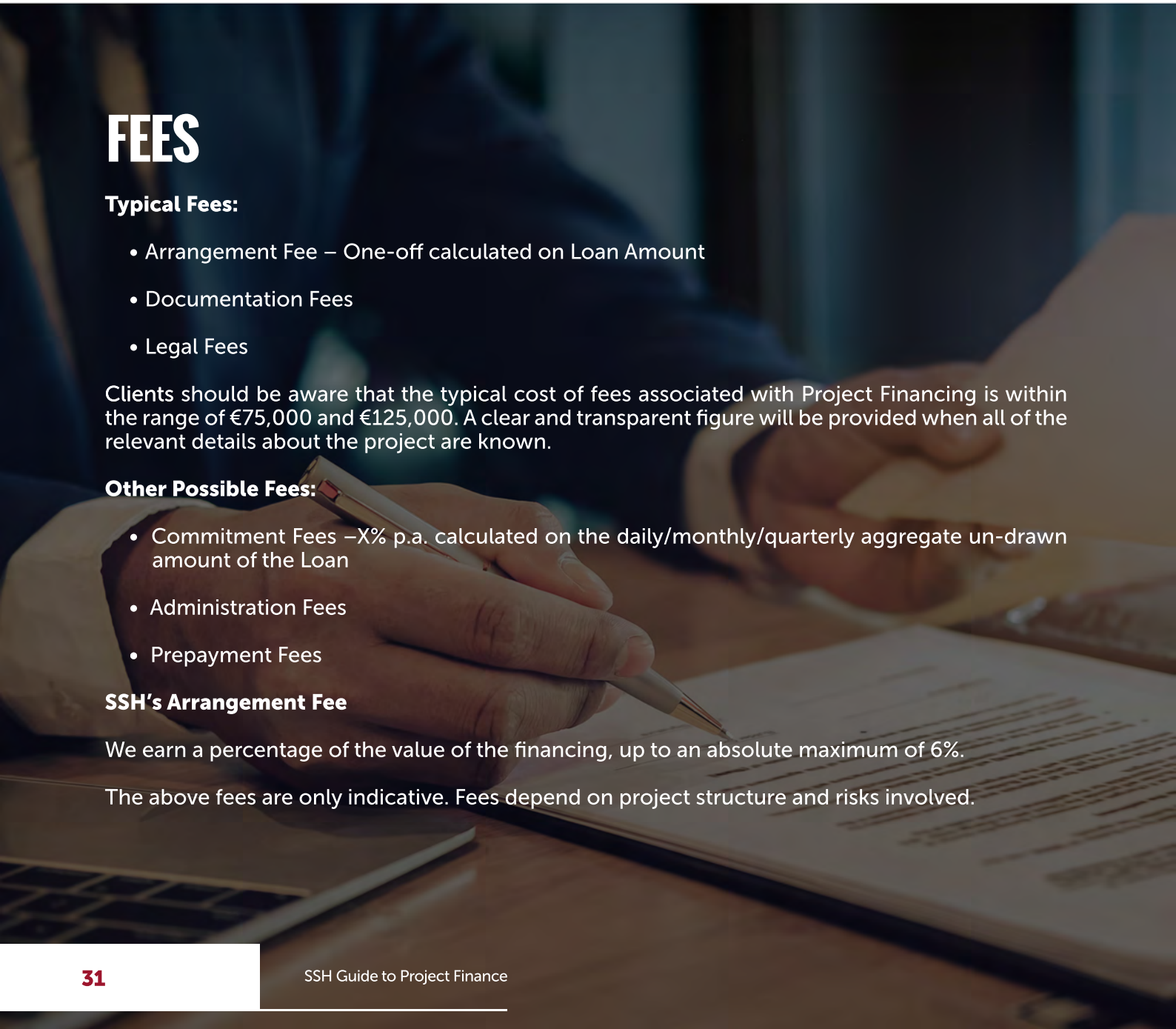
ADDITIONAL VITAL INFORMATION

SSH can help finance up to a maximum of **85%** of the value of your project. This means that you must be able to prove that you have at least **15%** cash equity, and this will be confirmed on a bank to bank basis.

You must provide all of the required documentation requested within our KYC package. This is all important information, requested by our banks, and so without this information, including audited accounts for the year to date, and the 2 years prior to that, we will not be able to progress with your application.

The repayment terms of the financing depend on a variety of risk factors, but may be possible up to 15 – 18 years in certain circumstances. This varies from Bank to Bank.

The interest rate offered will also vary according to Project, Geographical, Banking, and various other risk factors. As a guide the range is generally anywhere from 1.5% to 4.5%



FEES

Typical Fees:

- Arrangement Fee – One-off calculated on Loan Amount
- Documentation Fees
- Legal Fees

Clients should be aware that the typical cost of fees associated with Project Financing is within the range of €75,000 and €125,000. A clear and transparent figure will be provided when all of the relevant details about the project are known.

Other Possible Fees:

- Commitment Fees –X% p.a. calculated on the daily/monthly/quarterly aggregate un-drawn amount of the Loan
- Administration Fees
- Prepayment Fees

SSH's Arrangement Fee

We earn a percentage of the value of the financing, up to an absolute maximum of 6%.

The above fees are only indicative. Fees depend on project structure and risks involved.

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