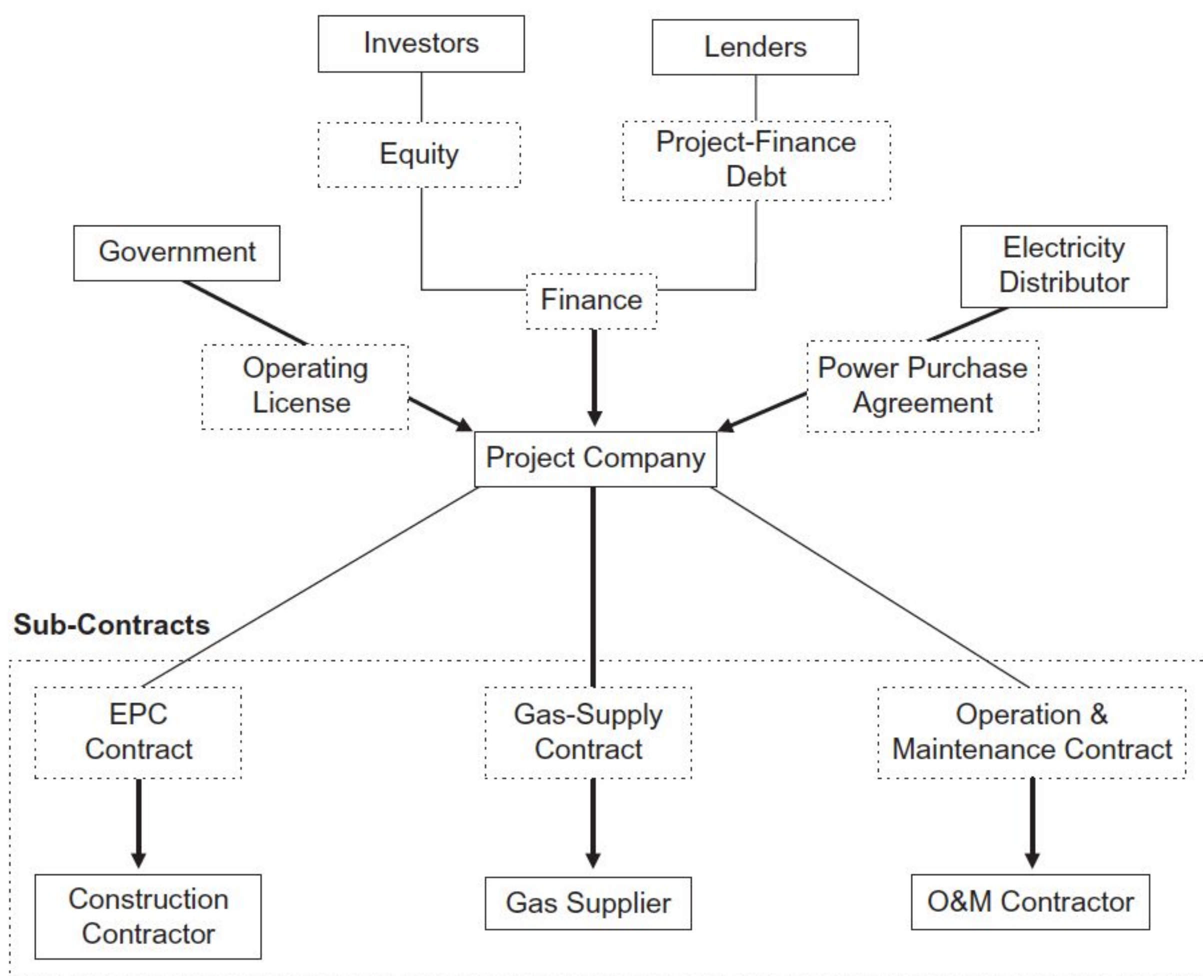
Project Finance 101 - the cornerstone of infrastructure

Introduction

Project Finance is a method of financing for capital-intensive infrastructure projects that depends on project cash flows to cover operating expenses and pay outstanding debt. Project Financing may refer to the construction of new installations, or the refinancing of already existing ones. It is used in many industries including Power, Natural Resources (Mining, Oil & Gas, Petrochemicals), Infrastructure (Transportation, Water and sewerage, Waste & recycling), Leisure, and Telecommunications. It is important to note that Project Finance cannot be used to finance a project that would not be financeable otherwise.

Structure and project participants



Stakeholders

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The main stakeholders that drive the project development process are the equity investors, also known as the **sponsors**. For each project, the sponsors create a Special Purpose Vehicle (SPV), with the SPV's sole purpose being to own, develop, and operate the project.

Sponsors then seek additional financing from lenders, who usually finance 70-90% of the cost of a project. This leads to project SPVs being highly levered, reducing the blended cost of financing the project and increasing the potential returns for sponsors. An important characteristic of Project Finance is that the debt used is **non-recourse**. This means that lenders have no claims to the assets of the sponsors and their only source of returns is the cash flows generated from the assets of the Project Company. If the project company defaults, the lenders cannot seek any compensation from the sponsors. Thus, lenders must carry out a thorough analysis of the risk and cash-flow generation capability of each project.

The rest of the project structure comprises contracts which serve to **transfer risk away from the project company** on to the other stakeholders of the project. For example, when a sponsor develops a power plant, it is faced with a number of risks. The price and volume of electricity purchased, the long-term price of its fuel, and the price and time of its construction process are all unknown and difficult to predict. Thus, within a project finance structure, the project company attempts to fix these variables in narrow predictable ranges through contracts with counter-parties, effectively reducing the risk for lenders and sponsors. This ability to reduce the uncertainty of a project through contractual agreements is perhaps the most important part of project finance. After all, without this element of certainty, it is hard for sponsors or lenders to justify investments in such long-term, capital intensive, and risky projects.

Sponsors

The Sponsor is the original equity investor in the special purpose vehicle. Usually they are a corporation that exists outside the SPV, and they initially develop the project at their own cost. Thus, the sponsor has to bear an upfront cost for planning and bidding. In most cases a project is a public bid, and there are multiple companies submitting a project, sponsors are unlikely to win every bid. Therefore, they need to make enough money with the winning bids to set off the cost of the unsuccessful ones. The development costs will be charged to the project company in a later stage of the project.

Usually sponsors are companies that are stakeholders of the Project, such as upstream and downstream suppliers (i.e. off-takers). Nevertheless, most sponsors do not have the size or the risk tolerance to be the sole sponsor. Thus, the SPV is often set up as a joint venture. Passive investors are investment funds who join at a later stage in the project and contribute further equity investment. These passive investors are usually insurance companies, pension funds or sovereign wealth funds. Sponsors usually have the right to sell their equity on a secondary market after a certain lockup period.

There are two kinds of sponsors which are worth discussing more in depth: Infrastructure funds and Contracting Authorities. Infrastructure funds are usually highly specialized in project finance and because of their high amount of deals, the cost of building in-house expertise is justified. They actively bid for projects, and they are usually the lead sponsor in the project. Contracting authorities on the other hand are equity investors who originally commissioned the project. Contracting Authorities can be municipal or regional governments who

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initially opened the bid for the project. The rationale behind such investments is usually to keep a certain level of control over the project and to eventually benefit from the profits.

Lenders

Sponsors usually hire a financial advisor who will determine the optimal capital structure for the company. Project finance is very debt heavy, and the debt needs to be long term. Thus, it is very different from corporate finance where the loans can be rolled over after short periods of time. There are three sources of debt for a project company: commercial banks, the bond market, and private debt investors. Commercial banks are usually the primary source with nearly 90% of the project financing coming from them.

It should be noted that the cost of giving a project finance loan is significantly higher than regular corporate or consumer credit. This is because project finance is a non-recourse method of financing, which essentially means that the lenders have no claim over the assets of the sponsor companies. The only collateral that the lenders have is the real assets of the project company and the contracts it has with off-takers, suppliers, and construction companies. This means that banks have to conduct extremely deep due-diligence into the financial viability of the project and the ability for the project company to service its debt load. Due to this high cost of due-diligence, banks usually only engage into project finance with bigger loan amounts ($+100 m). Banks/lenders are also extremely involved in the negotiation of project terms and contracts with other stakeholders, as they want to ensure that the project company is able to transfer as much risk as possible across to its counterparties.

Banks usually won't provide the whole debt alone. They spread out the risk by creating a syndicate of banks who will lend to the project company. Thus, it is common that the project company appoints a "lead arranger" who underwrites the debt. A lead arranger is appointed in the late development process of a project. Alternatively, the sponsor can appoint a lead arranger early on in the project, which bundles its service with financial advisory. This might reduce the cost of the service due to efficiencies in the process. Nevertheless, some projects will opt for a different financial advisor and lead arranger to keep checks and balances and increase competition among banks.

The biggest investors in project finance debt are French, Japanese, and Indian banks. They usually have specialized departments in project finance to offer financial advisory coupled with loan arrangement.

Governments

In some cases, the government takes on the role of project sponsor or co-sponsor, like in the case of Public-Private Partnerships (PPPs). However, it is much more likely that the government gets involved since it acts as a "host" to the project. As a result, the government is the ultimate public entity from which the project company needs to gain approval from.

The agreement between the project company and a public-sector entity (the contracting authority) is called a "concession deed". The concession agreement concedes the use of a government asset, such as a plot of land or river crossing, to the project company for a specified period. A concession deed would be found in most projects which involve the government such as in infrastructure projects. The concession agreement may be signed by a national or regional government, a municipality, or a special purpose entity set up by the state to grant the concession. For example, a concession deed is required for utility projects where payments are made by a municipality or by end-users.

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When the government is involved, there are some standard contractual methods used in project finance and PPPs. These include:

- **Build-Operate-Transfer (BOT).** Under BOT, a concession is granted to a contractor to design, finance, operate, and maintain a facility for a period, usually between 10 and 30 years. 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.

- **Build-Transfer-Operate (BTO).** Under BTO, 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.

- **Build-Own-Operate-Transfer (BOOT).** 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.

- **Build-Own-Operate (BOO).** BOO projects, instead, resemble outright privatization of a facility. These 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.

Apart from the task of granting a concession, the government might also assume some of the risks that come along with the project, such as demand risk.

Off-takers

Within the context of project finance, the offtaker is the party who is buying the product or service that the project produces or delivers. In a project financing, the revenue is often contracted rather than being sold on a merchant basis and the mechanism of price and volume which make up revenue is governed by the "off-take agreement". The intention of this agreement is to provide the project company with stable and sufficient revenue to pay its project debt obligation, cover the operating costs and provide certain required return to the sponsors.

If the project has a few or only one buyer, the sponsor typically enters into a "**take-or-pay**" contract with the buyer which means that the buyer must purchase a specified quantity of the project's output and at the specified price in the contract. The buyer must purchase the output when it is delivered. This type of contracts generates a stable cash flow to the project company as there is no way the buyer can back out of such contracts.Through government support which provides some minimum payments to the project to cover projects fixed costs and debt repayments in case revenue falls short of planned amount (available only if the

If there are multiple buyers of the project's output - for example in case of toll road projects - the demand risk can be mitigated:

project is developed as a concession)

- Through in-depth and detailed market studies to generate more reliable cash flow predictions

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Essentially, it is either the government under concession agreement or sponsors and lenders that take the demand risk. In the latter case, the project may not be financeable because such revenue uncertainty affects the project's debt capacity and the cost of financing.

Other off-take agreements that can be found in project finance are:

- **Take-and-pay**: The off-taker only pays for the quantity of product taken on an agreed price basis.

- **Long-term sales**: The off-taker agrees to take agreed quantities of the product at market prices (sometimes subject to a certain floor minimum price). It is used when off-takers are not willing to take on the price risk.

- **Contract for differences**: The project company sells its product into the market and not to the off-taker. However, if the market price is below an agreed level, the off-taker pays the difference to the project company, and vice versa if it is above an agreed level.

It should be noted that supply contracts for the project finance company are also structured in a similar way as off-take agreements. The only difference is that in the case of a supply contract, the project company is positioned as the off-taker.

Construction Companies:

Project companies usually hire one contractor that is in charge of managing the entire EPC (engineering, procurement, and construction) process of the project. Sponsors and lenders usually try to transfer as much of the construction risk as possible on to this contractor through the EPC contract. The EPC contract usually requires the construction to be completed by a fixed date, at a fixed cost, and at a fixed quality. Any cost-overruns will be borne by the EPC contractor. Any delays in construction or problems with performance, on the other hand, will make the EPC contract liable for liquidated damages (LDs) or even termination of the contract.

Delay LDs: The most common forms of LDs are damages paid for a delay in the project completion (unless a delay is caused by unexpected sources). These LDs are calculated on a daily basis and should, at a minimum, cover the project company's debt servicing costs, fixed overheads, and penalties paid to an off-taker (if the off-taker requires a minimum level of output). That being said, ideally a project company would aim to negotiate LDs that would cover at least some of the revenue lost in the delay period. Most lenders expect such LDs to cover at least a 6-month delay in construction and these LDs are usually capped at 15%-20% of the total value of the EPC contract.

Performance LDs: Such LDs are used when the project financed is a process plant (i.e. petrochemical, hydropower, solar plant…etc) and the performance of the plant fails to meet the requirements stated in the EPC contract. For example, if a LPG power plant is unable to produce x amount of power or burns over y units of fuel per megawatt of energy produced, a construction company would be liable for performance LDs. Such LDs are usually calculated through estimating the loss of revenues/increase in operating costs and discounting these figures to get their NPV. These LDs are also capped at a specific level.

Termination: If the construction is not completed till a hard stop date that has previously been agreed upon and/or the cap of LDs has been reached, a project company can terminate the EPC contract. Under such circumstances the project company may employ another contractor to finish the construction, and the additional costs of doing so would be borne by the defaulted contractor. Another method of recouping costs for the

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project company would be forcing the EPC company to repay any payments that were made during the construction period and compelling them to restore the construction site to its previous state.

It should also be noted that most contracts allow construction companies to terminate contracts with a project company. For example, if the project company defaults on payments to a contractor, the contractor is usually allowed to suspend construction for a specific period of time. If the project company eventually makes the payments, the contractor can resume construction and sometimes even seek damages from the project company. On the other hand, if the project company remains defaulted, the contractor can fully annul the EPC contract.

Bonus: Most EPC contracts also have a bonus feature where the contractor is rewarded for completing the project ahead of schedule. This essentially leads to the contractor getting some exposure to the upside derived from an earlier start of the revenue streams for the project.

Apart from a typical carrot and stick approach which punishes and rewards the construction company for different types of behavior, EPC contracts also require contractors to provide some kind of security to "bond" them to the project. A common method of doing so is the payment of a performance bond worth 10%-15% of the contract value to the project company. This project bond covers the construction company's ability to pay some LDs and gives them an incentive to complete the project.

Benefits and disadvantages of project finance

Project finance benefits sponsors because it is non-recourse and does not put their assets at risk, as lenders only have claims to the assets of the project company/SPV. Furthermore, due to the high leverage levels of the project company, sponsors are able to significantly boost their returns. This is very important considering that large scale infrastructure projects do not usually generate very high equity returns without significant debt levels. Projects also have a finite life (depending on the length of their contracts/licenses/reserves of natural resources), giving lenders certainty with respect to when the debt is expected to be fully repaid. Nonetheless, perhaps the greatest benefit of a project finance structure is the way it spreads risk across the web of stakeholders to ensure that no one party has concentrated risk exposure. This is extremely crucial especially for long-term infrastructure projects, most of which require very large investments expose both lenders and sponsors to significant uncertainty. With a project finance structure, a number of these uncertainties are eliminated through the fixed contracts with the different project parties.

On the other hand, project financing may be a slow and very complex process that needs constant monitoring and awareness by the participating elements. Unlike other approaches to financing projects, Project Finance affects all aspects of a project's development and contractual agreements. This implies that all parties involved in the project – from the project director, lenders, developers, and engineers to the contractors, suppliers, off takers, and, eventually, the government – need have a solid awareness of how their part of the project is linked to the whole structure and a strong understanding of how Project Finance works. However, despite these 'complications', lenders' margins over the cost of funds may be 2 or more times those when using corporate financing, which is an incentive for lenders to take part in project financing.

TAGS: Project finance, Investors, Construction Companies, PPP, Natural resources, Infrastructure, SPV, Non-recourse, Risk transfer, Sponsors, Contracting Authorities, Governments, Investors, Commercial Banks, Lead arranger, Lender, Public-Private Partnerships, Build-Operate-Transfer, BOT, Build-Transfer-Operate,

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BTO, Build-Own-Operate-Transfer, BOOT, Build-Own-Operate, BOO, engineering, procurement, construction, EPC, liquidated damages, LD

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