Infrastructure Finance
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Lecture - 19
Project Finance Markets

Hello and welcome to this course on Infrastructure Finance, this is lecture 19 and we will continue our discussion on Project Finance Markets. And essentially, what we mean by project finance markets to recapture what we have been talking is to look at different sources of financing for a project finance investment. And there are various sources, in which one can actually obtain finance for any investment, and we are going to look at some of the characteristics of these major sources of finance.

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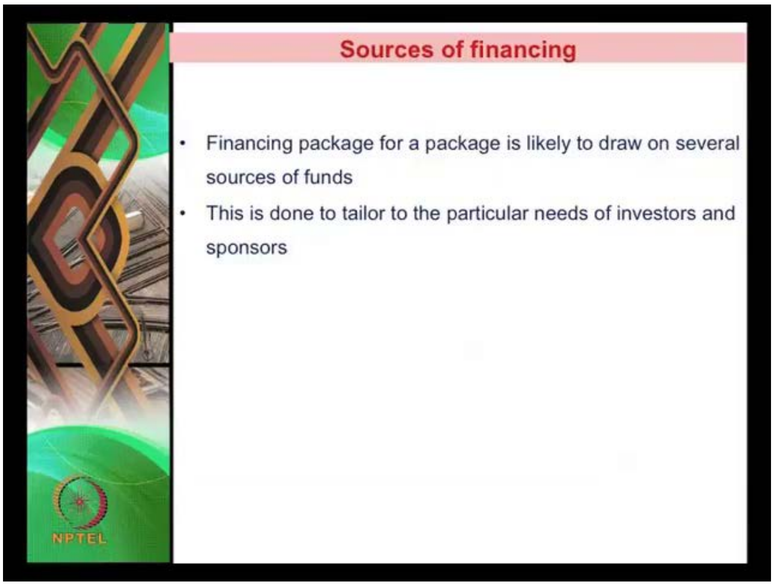

See, first of all when you look at the source of financing, we have to really understand that, the source of financing is not very simple in project finance deal. Mainly because the projects are very large, and the need for funding is very large and because of that the financing package is likely to draw from several sources of funds. So, it is not going to be from one or two sources, but essentially is going to be from multiple sources of funds, simply because of the fact that the project is very large, and there is a lot of complexity associated in financing such large project.

And more often than not, we also need to look at some of the particular needs of the investors and sponsors, see for example, it is not possible for the project to be funded by 100 percent equity. Because of the fact that, equity capital is very costly and therefore, the equity investors would like to have certain amount of debt in the project capital structure. Similarly, it is not possible to fund project entirely by debt, because of the fact that, the debt holders would like to have a certain amount of equity commitment and therefore, equity contribution is essential for the purpose of the project.

Similarly, if you look at it, it is not possible to fund an infrastructure project entirely by foreign capital, because it then exposes the project to substantial amount of a currency risk. Why this currency risk, as we have seen earlier, the projects revenues are largely is going to be in term of home currency. Let us say, if you are looking at an Indian project, the project revenues are largely going to be in terms of rupees, but if you are looking at getting some foreign equity, the foreign equity or foreign debt, the returns to that investment is largely going to be in terms of, let us say foreign currency.

If it is a dollar based investment then we will have to give returns in terms of dollars then for any currency fluctuation between the rupee and the dollar, it exposes to fluctuations in the returns as well. So therefore, it is unlikely that, we get a project completely funded by foreign investment, so we need to have proportion of domestic and foreign investors as well. And it is not possible to get the entire investment funded by a one investors, because of legal restrictions or because of certain in house requirements that the organizations have.

Let us look at the case of a bank, a bank has legal limitations of not exceeding certain amount of funding for a particular project, because of it is capital structure, because of the amount of borrowings in a particular year and so on. Sometimes, the bank will have its internal requirements of, how much they can lend to a particular project. So therefore, it is not possible to get an entire funding done by a single bank, so it might be possible to actually have a group of banks come together to finance a single project.

So therefore, we actually see that, because of this various reasons, we actually have a financial structure, which actually has from different sources of funds. So, it is like for example, if you go to an ice cream parlor and you want to actually have several choices, in which you can pick and choose from, similarly for a project sponsor, there are several sources of funds and they will have to pick and choose right quantum of capital from different sources, to make the entire project structure viable and sustainable.

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So, now let us look at some of the major sources of capital and see the characteristics of the different sources of capital. Let us look at equity, equity is the owner's contribution to the project and as a residual, as people who actually have only access to the residual cash flows, the equity investors assume the most risk for the project. So that means, the returns that the equity holders expect is also going to be highest, as compared to all other investors in the project.

So, normally if you look at the equity investors, equity investors can be classified into two categories. The category 1 is sponsors or active investors and category 2 could be financial or passive investors. Originally, when we started having a private sector participation in a infrastructure project, largely equity investment came from the sponsors or the active investors. It is only of late, we have seen a special category of investors on, either passive or financial investors taking part or making a investments in infrastructure projects.

Now, who are these active investors, so active investors are typically we call them as sponsors. So, sponsors are those, who actually have substantial interest in terms of the project governance, a monitoring, they actually play a large role in the management, day to day management of the project company as well. But typically, active investors are those, who will benefit from the operation of the project. So, there are several ways, in which they are actually connected to the project operations.

So, for example, they may be responsible for supplying an input to the project, they may be responsible for, they may be having ownership for certain amount of cash resource for the project. So, whenever we have a participation or investment from those sponsors, who are actually involved in some way the operations of the project, they are called as your active investors. So, let us take the case of the Bangalore international airport project. So, when you look at the Bangalore international airport project, which is one of the flagship public private partnership investments in the country, we have several sets of sponsors. So, let me list out the various sets of sponsors as an illustration.

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So, you have the Bangalore international airport project and the special purpose vehicle is called BIAL, Bangalore International Airport Limited. So, the equity investors in this project are Siemens then we have Larsen and Turbo and then you have a Zurich airport and then you have airport authority of India and then you have a KSIIDC. So, when we really look at, remember these are the equity sponsors at the time the project was being conceptualized and the time at it is been constructed.

So, if you really look at it, each one of them are going to be involved in the operations of the airport in some way. So for example, Siemens, Siemens is an equipment supplier for the airport project, so it supplied lighting equipment, it supplied electrical equipment. So therefore, they are connect in some way to the operations of the project then you have Larsen and Turbo.

Larsen and Turbo is again construction company involved in providing construction activities and construction related services, engineering, design and all those services to the airport, so they are connected with some way to the operations of the airport. And Zurich airport is again vested with the responsibility of providing operational expertise, how do you actually run the airport. What are the facilities that are needed to be provide in the airport and what should be the kind of services that needs to be provided, what should be the quality expectations and how you maintain the quality of the services and so on. So, they actually provided expertise on this nature, so to that extent, they are also connected with the airport operation.

So, if you look at it, these three are actually suppliers of some service or product to the airport and therefore, they are the equity sponsors. So then you have the airport authority of India, airport authority of India is again an organization of the government of India and they actually provide in some sense, the licensing. For example, the air traffic control is all provided by the airport authority of India and as representative of the government of India, they actually provide the license to operate the airport.

So, in some sense, they actually are providing a scarce commodity, because it getting a license for operate operations, is considered to be scarce resource and airport authority of India provide this scarce resource and therefore, they are the part of the equity. And then you have KSIIDC, KSIIDC is Karnataka State Industrial and Infrastructure Development Corporation, they actually provide our representative of the state government, which is where the airport is located.

So, KSIIDC is responsible for acquiring land for the airport project ensuring that, there are several other state government clearances are obtained. So, it actually captures the state government's interest in the project, so if you really look at it, all of this five equity investors are in some way connected with the operations of the project and therefore, they can be called as active investors.

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So, what is the responsibilities of active investors, active investors for example if there are project that are undergoing any cost overruns and time overruns and active investors have to take responsibilities for that. Let us say for example, if the project is having cost overruns, any cost escalation that had been budgeted for, will have to be contributed by the active investors. So, initially when the project starts, the project is expected to cause certain amount of rupees and part of that is divided into equity and part of that is divided into debt.

Now, if there is increase in the project cost, who is going to bear this increase in project cost. So, debt holders would normally put a condition that, any such project cost increases will have to be bound by the equity investors. So, active investors will have to actually take the responsibility of providing the additional capital that is needed in the case of cost overruns.

Now, what happens in the time overruns, so in the case of time overruns, essentially active investors will actually going to get delayed in beginning the operations and delay in beginning the operation can also mean, certain amount of delay in getting the dividends. So therefore, any cost and time overruns will have to be absorbed, will have to be compensated to some extent by the active investors and therefore, they bear the residual risk that exist in a project.

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So now, let us look at another category of investors, you may call as financial investors or passive investors. So, if you look at it, recently there has been several investments funds that have been set up for equity investment in infrastructure. So, these are called as private equity investments and these private equity investors do not actually have any major connect with the operations of the project. For example, unlike the case of the BIAL, where we actually see suppliers, where we actually have service providers, who are some way connected to the airport operations.

In the case of financial investors, they largely provide only the capital, they do not provide any equipment, they do not provide any operation expertise. But, they rely on the expertise, they rely on the suppliers of the project company to ensure that, the project is up to running. So, these sets of investors are called as passive investors, mainly because their role is restricted in terms of only providing capital and they also get returns only by a way of returns from the project.

Active investors on the other hand, can actually get some amount of returns by way of contracts that they have the project company. For example, L and T is an equity investors in the project and L and T is also the contract for the project, so the returns from the construction contract to certain extent can be seen as return on the equity investment. Similarly, in the case of Siemens, Siemens provide electrical equipments, Siemens provide let us say lightning equipment and so on, and the returns that they get from this contracts can be seen as a kind of return on it is equity investment.

But, in the case of financial investors, they do not have the scope for getting this kinds of contract from the project company. So, they will have to largely rely on the financial returns that they will get at the time of exit. So, if you really look at it, either the sponsor equity or the passive investors equity, they are all private equity, in the sense they are contributed by certain limited number of participants.

Public issue of equity is very rare, normally people, project finance companies desist from issuing public equity. Because, issuing public equity is an expensive and it takes lot of time to actually issue public equity, because of the regulatory complains that are to be met before issuing public equity. Second is information dissemination, it is going to be very difficult for common investors to understand the merit of the project and it needs certain amount of financial sophistication to understand the project at least in the initial stages.

So, because of these reasons, most of the time we actually have equity raised by limited set of partners, public issue of equity is very rare. But, as I was mentioning, the exception still exist, there are several projects that have raised equity from the public. I can say two examples, the first example is the hero tunnel project that was being constructed that is, basically a rail link between UK and the mainland Europe. So, when this project was being constructed, the equity was raised from the public even at the initial stages.

So, public contributed by the way of invested in the shares of the project company even at the initial stages, even the project was being constructed. The second example that I could think of, is a telecommunication company call Iridium, Iridium was telecommunication company that actually was started by Motorola in 1990's. And at the initial development phase of the Iridium project, they actually obtain equity investments from the public investors. So, there have been example, where public equity has been raised, but there are very, very rare and very few.

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So, next we look at the debt market, so as we largely look at the kind of classify source of financing into two categories, equity and debt, so we have looked at equity, now we look at debt. So, I specifically mention long term debt market, because infrastructure project have very long life and by nature, they need to actually have a long term funds. So therefore, when you talk about debt, debt market can actually be classified into two categories, a long term debt and short term debt.

So, most of the capital raising has to happen from the long term debt market as far as infrastructure project are concerned, because of the fact that, the projects are of long destination and they need lot of time before they can actually repay the loan. So now, who are the providers of long term debt in the market, so we have what is called as commercial banks then you have financial institution like insurance companies, pension funds and so on.

So, let us look at some of these institutions in some detail, so I talked about commercial banks, now what are commercial banks. Now we talk about commercial banks, the question that you may have in your mind is, do we have something then like non commercial bank, yes there are different types of banks and each of this banks have their set of mandates and objectives. So, when we talk about non commercial banks, they are banks which do not really expect to get commercial returns.

They do not expect to lend on a commercial returns, there would probably lend on a very, very subsidized basis, they would be able to get very subsidized capital from the government and so on. So, one example of, what could be called as non commercial bank, sometimes the non commercial bank also referred to as development banks. So, in addition to actually making an investment, these kinds of banks also have a development objective.

And so therefore, they do not actually see to obtain commercial return on the investments that they make. So, when we talk about commercial return, essentially the returns that, one would be get from the market proportion to the risk of the investment. So, if this proportion is not met then sometimes the banks have other objectives to lend to. So, it could be due to development or it could be in terms of catering to the national priority area and so on.

So, you have certain categories of banks called as a development banks, one example of the development bank is called as NABARD, so you have this national bank for rural development. So, that again is a bank, which actually has a development motive, not really only a commercial motive, so you have institution like this. But, when we talking about commercial banks, we are largely talking about banks, which when they actually make an investment, they expect to get commercial returns that is, returns proportion to risk of the project from the investment.

So, any bank that you actually see in the market is largely a commercial bank, so for example, you have State Bank of India, you have Canara Bank, then you have United Bank of India, so these are all, what is called as public sector banks. And then if you really look at, there are several private sector banks like ICICI bank, you have HDFC bank and then you have some of the foreign banks as well like for example, you have CITI Bank, Moocher bank and so on.

So, all of them are largely, what is called as your commercial banks and then you have insurance companies, pension funds and so on. So, they also are making substantial investments in the infrastructure projects and there are differences between these two institutions. So, let us try and understand the differences between these two institutions.

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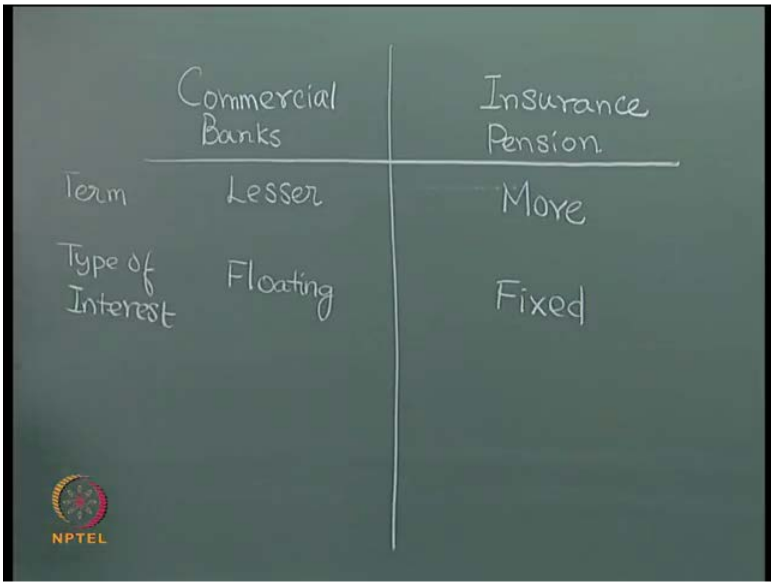

So, I am going to actually try and compare, who is called as your commercial banks and then you have institution like insurance and pensions. Let us look at, try and compare the key differences between these two sources of financing, first is let us say term of the loan. So, normally the term of the loan is also depending on, where this institutions are obtaining their funds from. For example, where do the commercial banks get their money from., so commercial banks get their money from individual depositors like you and me.

For example, when you actually go ahead and make fixed deposit or any other deposit in the bank, the bank does not keep your money idle, the bank then makes an investment in projects and then it then share some of the returns that it makes to you as a depositors. So therefore, the source of money for banks are individual depositors largely and therefore, the tenure in which this banks can make an investment is not going to be very large, because individual investors are unlikely to make deposits of a longer duration.

So, when you go to the bank or when I go to the bank, the normal duration of the fixed deposit could be 3 years, could be 2 years, could be 5 years, it is unlikely to be 10 years or 15 years. So therefore, it becoming the fact that, the liabilities that is, the deposits that they obtain from the investors are for a shorter duration, most of the banks also tend to make an investment not of a very long duration. So, the tenure of the commercial bank loan is going to be lesser as compared to, let us say the insurance or the pension funds.

Why, because insurance and pension funds are able to obtain very long sources of capital from the investors. Let us say, if you take an insurance policy, the policy is actually for a longer duration, it could be for 10 years, it could be 15 years and in some case, it could be as high as 30 years. For example, I have taken a life insurance policy, which has a term of 35 years, so they actually are able to get funding for a long duration of time.

And they also look at, most of the time this policies take a long time to mature and because of the fact that, they get money for a longer duration and the cash outgo is also going to happen over a longer duration, they are able to make investment for a higher tenure. So, the term of debt from insurance and pension funds is going to be comparatively more. So, over a period of time, the commercial bank have also developed expertise, in terms of making a loans of a longer duration.

So, earlier let us say for example, about over two decades back, commercial banks were finding it very difficult to make loans for infrastructure projects, they are unable to actually have the expertise for making long duration loans. But, the last couple of decades, commercial banks they developed expertise, they have developed the comfort to lend for infrastructure project. So, the terms of the loan obtained from the commercial banks have increased over a period of time, but nevertheless when compared to insurance and other pension funds, they happen to be comparatively lesser.

Now, let us look at another comparison, other comparison could be type of interest, so if you look at commercial banks, in most instances commercial banks charge, what is called as your floating interest rate. So, they tend to benchmark loan interest to certain comparative industry benchmarks, but if you look at insurance and pension funds, they are able to provide loans at fixed interest rates. It is also not possible to actually provide a floating interest rate for long duration loans, because then it will be very difficult to the borrowers, to actually hit their risks.

And it is very difficult for the borrowers to predict, what is going to be the interest rate, let us say 8 years from now, 10 years from now and it is also going to be very difficult to hedge this interest rate risk for a longer duration. There is no hedging mechanism that are available, there are no hedging products that are available, whereby the borrower will be able to hedge those risk. Whereas, in the case of a floating interest rate loan for a shorter durations, it is possible to actually hedge the interest rate risk through a suitable hedging mechanism that are available in the market. So therefore, the kind of the type of the loan that these two institutions offer is also different.

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So, long term debt market again consist of broadly two categories, one is your private debt, a private debt is what you actually raising it from institutions like commercial banks, insurance companies and pension funds and so on. And then like we have public issue of equity, we can also have a public issue of bonds, public issue of debt, so public issue of debt is called as bonds. It is possible to raise long term debt by issue of bonds, but like we saw in the case of our equity, very rarely the project resort to issuing of public equity of debt. So, there are various reasons for this, let us try and discuss some of those reasons. So, what you are going to now see is to really compare the various features of long term debt raised from institutions vis-a-vis public issue of debt.

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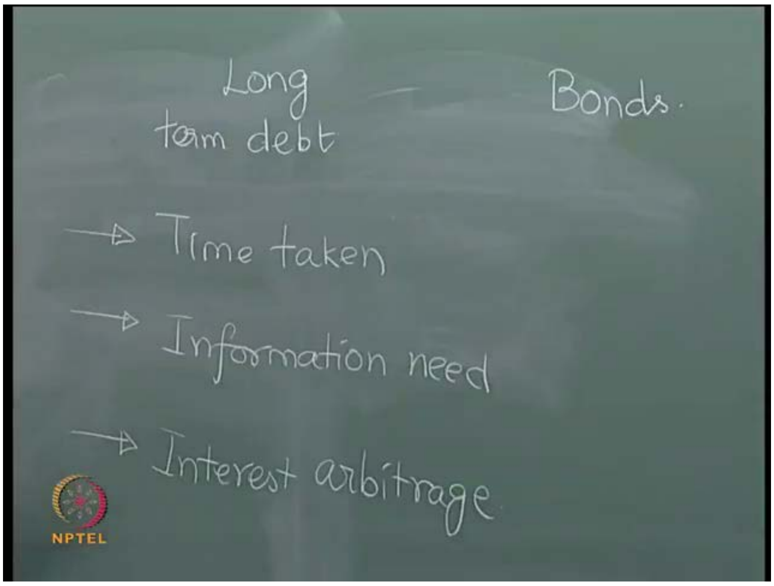

So, we will talk about long term debt and then we talk about bonds, so both are long term in nature, we are able to get money for a longer duration. But, why do we actually choose to go for largely long term debt rather than public issue of debt is, because of the following reasons. One is the time taken, when you actually try an issue of public debt or a public bond issue, one needs to actually comply with a lot of regulatory requirements. And normally, what happens when you actually beginning to develop the project then you need to actually get your money faster.

So therefore, the long lead time that it takes to raise money from the public capital markets does not make it as a preferred choice. So, you need to actually be able to raise money quickly, but the public issue of debt is not going to make that happen, so therefore there is a tendency towards shifting to raising money from the institutions. The second is, basically the information need, so at the initial inception of the project, a common investors, it is found that common investors would not be able to understand some of the project features.

You would not needs to actually have sophisticated financing experience to be able to understand the merits of the particular project. So therefore, the kind of information that needed to be provided of the common investors are going to be very large, it is going to be time consuming, it is going to intake lots of effort and cost, so therefore try and raise money from institutional investors. And then the third is another important feature, which is basically called as your interest arbitrage.

So, this is a very important concept that you should be aware of, so what is this concept about interest arbitrage. So, when you actually take a loan and from the time you actually receive the money, you have to start paying interest. So, when you actually look at raising money from the bank, though you may actually need a large amount of money, most of the money is not needed upfront. So, let us see for example, you are taking the construction loan of about 100 crores and the construction period is about 2 years.

So, the money that you need 100 crores can be spread over 2 year period, see for example, you may actually withdraw about 25 crores, the first half of the first year, you may withdraw 25 crores in the second half of the first year, and then the third 25 crores in the first half of the second year and the last 25 crores in the second half of the second year. So, though you are actually taking the loan of 100 crores, this 100 crores is not withdrawn upfront, it is withdrawn over a period of time depending on your expense requirements, depending on when the cash outflows are expected and so on.

So, the interest that you pay is actually from the time you withdraw the loan from the bank. So, when you withdraw the first 25 crores, you actually pay interest only for the first 25 crores, but not the entire 100 crores that the bank has sanctioned you. So, only when you start withdrawing the loan from the bank, will you actually start paying the interest. Now, if you look at raising money from the public issue, what happens is, you actually raise money upfront.

When you talk about the public issue, it is going to be very difficult to raise money at smaller amounts, because whenever you approach a market, it actually involves certain amount of cost. So, when you try and go raise money from the public market, you try and raise all the capital at one go. So, when you raise all the capital at one go, you need to start paying interest right from the time the investor is actually invested in the issue. So, you may not actually need all the capital upfront, despite that fact, you will have to start paying interest.

So, when you do not need all the capital upfront, what happens, so you utilize only the necessary capital and then you make the surplus capital that you have raised in a different investments. See for example, you may actually be investing the surplus capital that you have in a government bond and so on. So, the interest that you actually get by investing in this government bonds, the surplus capital that you have, the interest that you actually get on the surplus capital is not going to be adequate to meet the interest requirements of your lenders.

So therefore, though you may not need the capital, you may actually end up paying, because you are taken money from them, the lenders are actually invested in the bond issue. And the return that you get by investing the surplus capital in other investment avenues will not be adequate to actually meet or the service return requirements of your investors, so this is called as your interest arbitrage. So, there is a negative interest arbitrage when you actually raise money from bonds, which is not the case when you actually take money from financial institution.

Because, you do not actually have surplus capital, you actually withdraw capital as an when you needed it and you start paying interest only when you withdraw. So, this negative interest arbitrage that actually occurs when you try and raise money from the public or the construction phrase is avoided, when you try and raise money from the bank markets.

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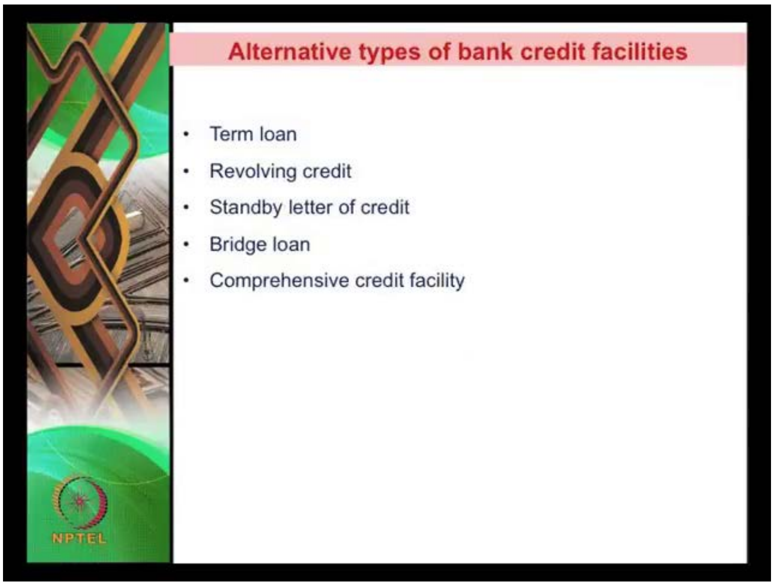

Let us like, now look at different types of bank credit facilities, so when you look at different types of bank credit facilities, they can be classified into one of these five categories. The first is, what is called as a term loan, the term loan is the most simplest of the credit facilities that are actually provided by the bank. So, normally what happens is, the bank gives you a term loan of a fixed period, it actually has a specified interest rate. And at the end of the term, we actually repay the entire loan or the loan is periodically repaid throughout the loan term.

So, we talked about bullet repayment, we talked about balloon repayment, we talked about amortizing repayment and so these are the different types of repayment. But essentially, the term loan means that, the loan is for fixed term, it could be 5 year term, it could be 7 year term, it could be 8 year term, whatever it may be, it is a fixed term loan. So then you have what is called as your revolving credit, so revolving credit is a certain amount of credit is sanctioned to you and you utilize the credit.

And then when you utilize the credit, after you have completely utilized the credit, you can repay it and still you can start utilizing after you have replenish that previous credit that you have enjoyed. So, this is very similar to the credit card that we normally have, so when you actually buy a credit card, the credit card comes with the sanctioned credit limit from the bank. So, you actually start making purchases till you actually reach the credit limit.

And once you have reached the credit limit or whenever you have repaid the credit that you have taken from the bank, you can continue to use the credit card, so that is called as a revolving credit facility. It actually is valid for a particular duration of time, but you do not have to actually obtain approval for each and every purchase, the credit is approved and within that credit, you can continue to use it, provided you have refinished your earlier credit. So, when do people actually use the revolving credit, let me give an example, where this can actually come in handy.

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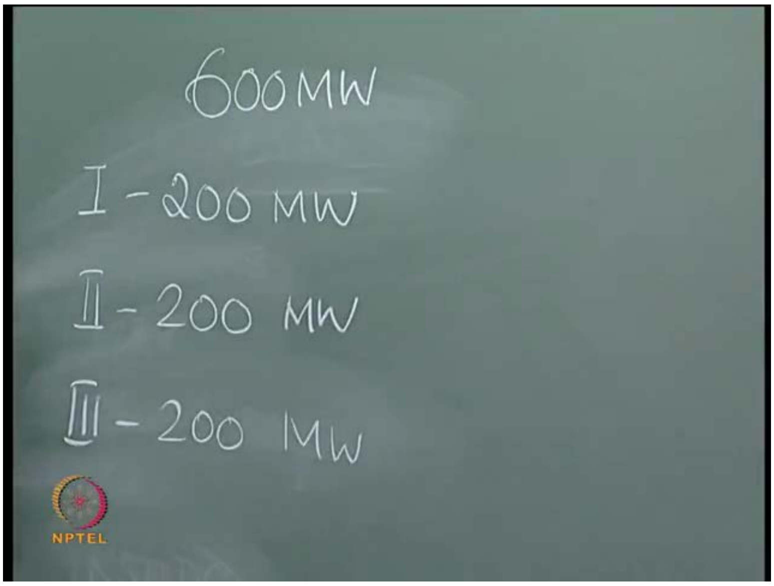

So, let us say, there is a power project that is been developed and the power project let us say for example, has the capacity of 600 Megawatt and instead of being developed at one phase, the plant is been developed over three phases. So, phrase 1 will be 200 Megawatt, so phase 2 could be another 200 Megawatt and phase 3 could be 200 Megawatt. So, all these phases let us assume that, they are going to develop sequentially that is, phase 1 is complete and after phase 1 completion then you go to phase 2 and after completion of phrase 2, so you actually go to phase 3.

So, these are going to be developed sequentially rather than simultaneously, so revolving credit can be very useful in this kind of circumstances, simply because you can actually get a credit facility for developing 200 Megawatt plant. Now, after completing the first phase, you can refinance, you can actually use revolving credit facility during the construction phase of the first phase. And after the construction is complete, you can refinance their revolving credit through some other form of credit.

And then you can use the same revolving credit after replenishing whatever has been utilized for the first phase, for the second phase. Similarly, after you have financed second phase using a more permanent form of a credit, you can again use the same revolving credit facility for the third phase as well. So, what is the advantage of revolving credit as compared to the term loan for example, you can also finance this by taking three term loans, you can take a term loan for phase 1, you can take a term loan for phase 2 and you can take a term loan for the phase 3.

So, the advantage of the revolving credit facility is that, you do not have to repeatedly go to the bank for a fresh approval. In case of a term loan, each of the term loan would have to be approved a fresh, so that means, submitting an application that means, interacting with the bank and that will take again a lot of time. But, if you look at revolving credit, the entire approval for credit facility is obtained at one shot and you actually decide, how much of credit you use and for what phases of the project. It saves from lot of transaction cause and time in the case of a revolving credit.

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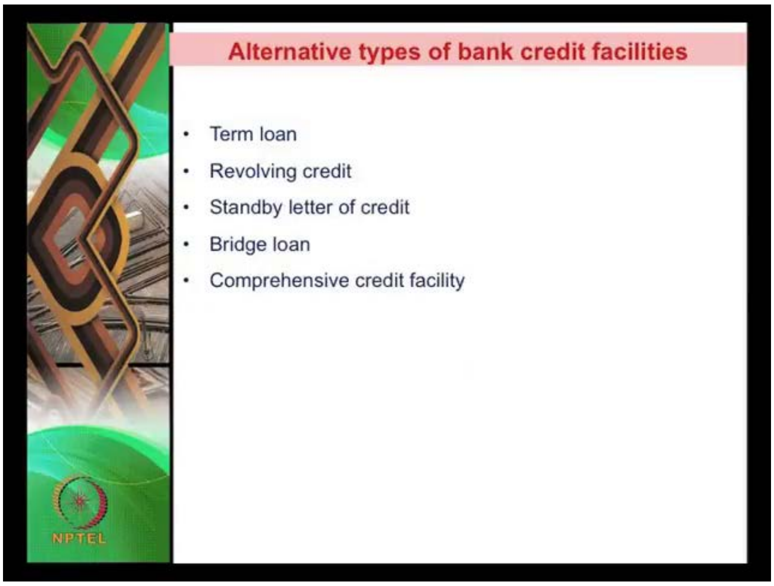

So, standby letter of credit, so what is the letter of credit, so a letter of credit is a simple facility that is provided by the bank, which would state that, in case the project finance company is not able to pay then the bank will pay the creditor. So, that is actually a letter of credit, a letter of credit normally does not involve any upfront, but it will actually only give a kind of comfort to the lender. So, in many cases, the lenders would actually insist on the letter of credit, because they may not be comfortable with the financial standing of the borrower.

So, they would actually insist on getting a letter of credit from a highly creditworthy bank and a creditworthy bank can actually provide a letter of credit, which will simply state that, in case there is a delay in the borrower, which is a project finance company repaying a loan then the bank will repay the loan. So, it actually gives a lots of comfort to the lender, this letter of credit from a banker or any of the other agencies can actually provide comfort.

And whenever the letter of credit is provided by the bank, they actually charge certain amount of fee for providing this facility to the borrowers. And then the fourth type of category is called as a bridge loan, so what is this bridge loan, so as we have seen earlier, financing package of the company involves getting money from different sources. So, whenever there is a delay in getting money from one source, but you need a capital on an urgent basis then you actually obtain for a bridge loan.

So, let us say for example, you actually need certain amount of capital today, but the loan that has been sanctioned to you will be arriving only, let us say 6 months down the line. So, for this 6 month period, you actually need certain amount of capital, so this bridge loan is normally sanctioned by the banks to actually account for the differences, when you actually going to get the loan. So, it is basically to take care of short term gaps in the funding, rather than providing more permanent capital, more permanent sources of financing for the project.

So now, we actually use each of this credit facility depending on what the nature of the product is, depending on what the need for the borrower is and so on. And finally, there is something called as a comprehensive credit facility, so comprehensive credit facility can actually comprise one or more of the components that I have discussed previously. For example, it can actually comprise certain amount of term loan, it can actually also include letter of credit, it can also comprise a bridge loan. So, essentially it is trying to meet the entire requirements of the borrowers in various ways, it is not just one instrument, but taking care of all the credit requirements, taking care of all the financial requirements of the borrowers.

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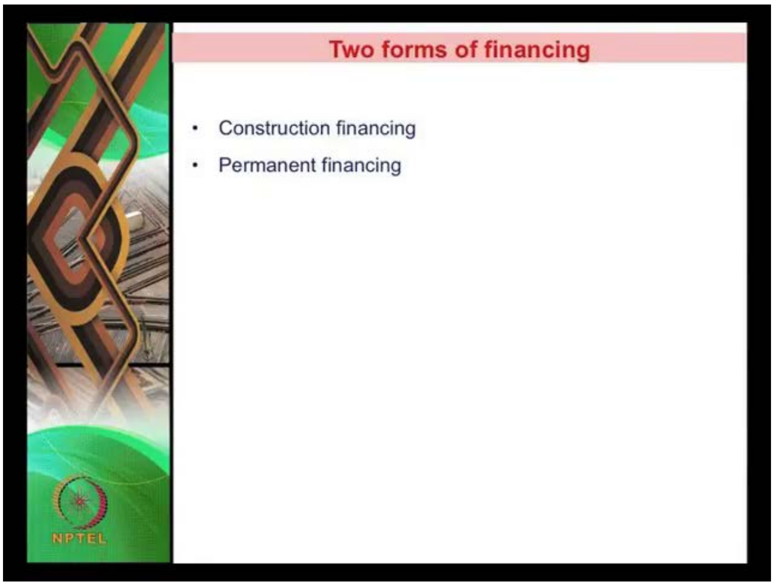

If you look at it from a life cycle prospective of infrastructure project, there are largely two phases.

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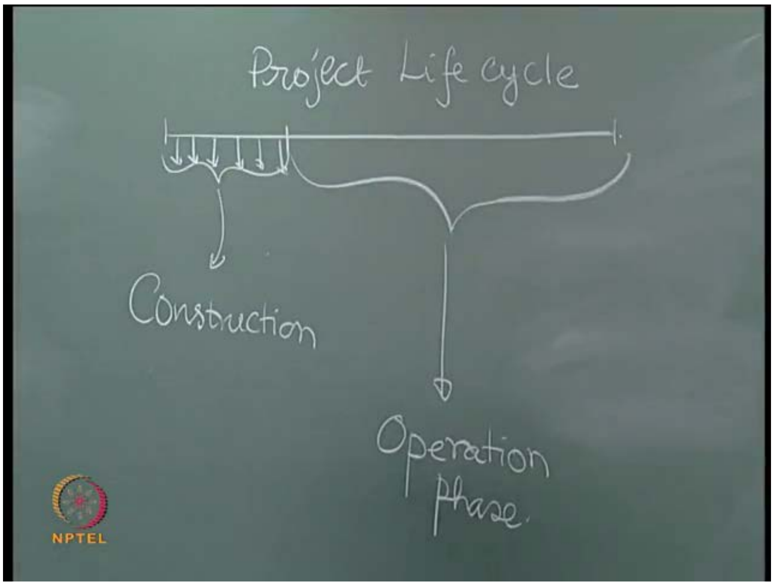

So, this let us say the project life cycle, so it can be divided into a two phases, the first phase is your construction phase and then the second phase is your operation phase. So, during the construction phase, there will be a lot of project development activity and there will be largely cash outflows. And during the operation phase, the plan begins operations, the project starts to offer services and that is what ((Refer Time: 42:53)) when the project will have cash inflows.

So, in many instances, it is common to find people using different sources of capital for the different phases of project. When you actually looking at construction phase, the cash outflow is going to be fairly uniform, let us say during the entire construction phase, the outflow is going to be fine large uniform. We do not need all the capital at one go at the beginning of the construction, you need capital as the construction progresses. So therefore, during the construction phase, it is very common for projects to actually go ahead and get money from commercial banks or any of the other financial institutions.

Because, you can actually pay interest depending on, how your utilization is going to be and during the operation phase, the company starts to get revenues and the loan repayments or service from the revenues or surplus that the company generates. So, where the project begins the operations, there are no any major requirements for capital, because the assets are long duration and any requirements for maintenance and so on. The revenue will be able to meet the requirements of such a small funding needs, so the bulk of the funding needs are complete after the construction phase is over.

And so therefore, in the operation phase, the largely it begins to actually service the requirements of the loan that I have been checked. So, to service the loans, the projects were normally like to obtain loan from those sources that are less expensive. So, as the construction is complete, normally what the project do is, to engage in the process of refinancing.

So, if you really look at it, between the two sources of financing, public issue of debt vis-a-vis getting debt from the commercial bank and other institutions, the interest on the public issue of debt is lesser, as compared to obtaining money from commercial banks. So, people actually do, what is called as a refinancing of the construction loan taken when the project begins operation. So, when project begins operations, you know for sure how much of loan has been obtained.

So, you can refinance the entire loan by public issue of debt and by doing that, you are replacing a costly loan vis-à-vis a loan that is less expensive. And you will be able to a kind of service, the loan repayment and lot more economical way, because the interest rate is going to be lower as compared to our bank. So, that the common way, in which to fund an infrastructure project is to really look at construction financing from banks and other financial institution. And in the case of the permanent financing that is, when you talk about funding, the capital during the operations of the project, it is obtained from the public issue of debt.

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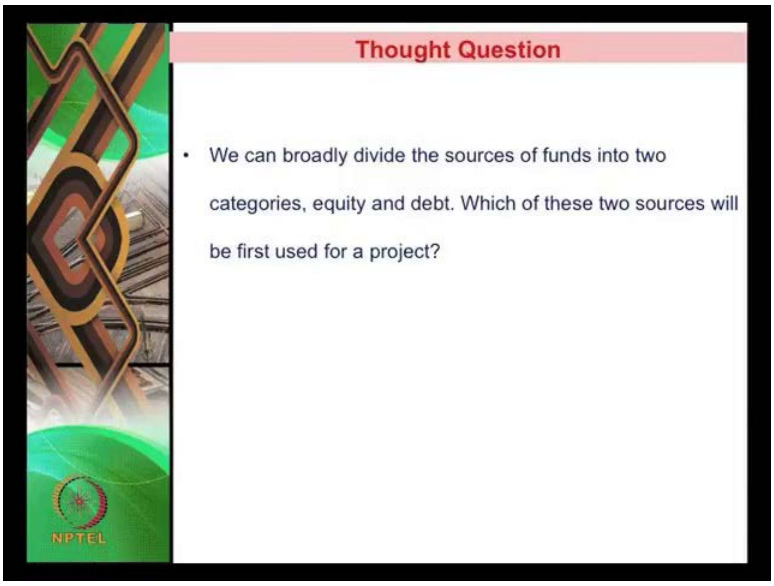

So, before we end today's lecture, I have quick thought question, so let us say for example, we divide the sources of capital into two categories, equity and debt. So, my question to you is, between these two sources of capital, which would be the first that could be used in a project, whether it would be a equity or whether it would be a debt. So, think about it and we will discuss this in the next session.