Value creation by capitalizing goodwill: equity funding using shareholder loan scheme to reduce electricity cost of provision

Surya Ibrahim Irsyam¹ and Herry Nico Siagian²

Business Development Unit, PT Pembangkitan Jawa-Bali, Bidakara Tower 2 16th Floor, Jl. Gatot Subroto Kav. 71-73, Jakarta 12870, Indonesia

*Email: ¹surya.ibrahim@ptpj.com, ²herry.siagian@pjbinvest.com

Abstract. In order to support national economic growth, the government created a 35,000 MW program for Indonesia. PT PLN (Persero) has assigned PT PJB to develop some projects under the IPP scheme as shareholders and project sponsors. PJB through its subsidiary, PJBI, has to carry out its role as a shareholder and project sponsor of projects with a 51% stake. PJBI could only deposit cash equity of 10% equity. The equity portion of 49% is the responsibility of the partner and 41% of the equity portion is fulfilled through loans. There are three equity funding scheme options discussed in this paper, namely a loan partner (option 1), shareholder loans (option 2), and bond issuance (option 3). It is assumed that the three options have the same project profiles. The feasibility indicators calculated in this paper are Net Present Value (NPV) and Internal Rate of Return (IRR) Project, IRR Equity, NPV of PJBI, and IRR of PJBI. The approach taken is to lock the tariffs of components A, B, C, D, and E on the three options, so that the effect of differences between schemes is generated in each output. Financial model calculations show that option 2 offers the largest NPV and IRR for PJBI, up to US$ 68,385,771 and 16.90%, followed by option 3 and option 1. Based on these calculations, option 2 is giving the greatest benefits to PJBI and suggested as the equity-funding schema.

1. Introduction

In order to support national economic growth, the government created a 35,000 MW program for Indonesian electricity, targeted achieved in 2024. The 35,000 MW figure in the program is not only a target to be achieved, but is also the needs of the Indonesian people. The RUPTL projects have been prepared to support the achievement of these targets.

This 35,000 MW program requires enormous funds. Based on data from PT PLN (Persero), to support this program, it costs more than Rp. 1,100 trillion. To continue to be able to support the implementation of the mega project and to maintain its financial capability, PT PLN (Persero) shares the work of the 35,000 MW program. Of the 35,000 MW, the capacity of 10,000 MW is the work of PT PLN (Persero), while 25,000 MW is the work of the private sector.

As a subsidiary of PT PLN (Persero) which is engaged in the electricity industry, PT PJB has been assigned to develop some projects. It was decided that in each of the assignment projects above, the minimum shareholding of PT PJB was 51%. The decision was made to maintain the authority of PLN Group over the project company that will be formed, and retain the energy security by PT PLN (Persero). PT PJB assigned PJBI, as a subsidiary engaged in electricity investment, to carry out its role as a project sponsor and shareholder with a share portion of 51% in the assignment project.
In implementing a project, funds are needed to support the project's operation. Likewise, with the case with power generation projects. Project funding sources are obtained from debt and equity. Debt is a loan given by lenders. The loan will be returned by the borrower in a mechanism and a certain period in accordance with the agreement of the two parties. In general, repayments to lenders are paid in installment every year for a certain period in the form of principal plus interest. While equity is a source of funds obtained from shareholders in the form of capital deposits. If the project makes a profit, shareholders will receive dividends according to the portion of their respective share ownership.

Comparison of the portion of debt and equity to fund projects varies. For projects in this paper, the debt-equity ratio is 75/25. That is, the source of project funds by 75% comes from debt, while the remaining 25% comes from equity. In general, the amount of equity that must be paid by the company is in line with the number of shares owned. Based on the portion of shares owned by PJBI, which is 51%, then the PJBI should provide funds worth 51% equity. For the assignment project mentioned above, there is an agreement between PT PLN (Persero) and PT PJB regarding the portion of the equity that can be deposited by PT PJB through PJBI. It is decided that the equity portion of PT PJB were:

• 10% cash deposit by PJBI; and
• 41% through equity loans

This decision is to capitalize on the goodwill of PT PLN (Persero). The term goodwill means the difference between the value of a business enterprise as a whole and the sum of the current fair values of its identifiable tangible and intangible net assets. Valuation of goodwill may occur for different reasons which include the sale of a sole proprietorship firm, a new partnership taken, and existing business enterprise being taken with or amalgamated with another existing business enterprise. Goodwill is an intangible and invaluable asset [1].

These limitations make PT PJB need to consider the equity funding strategy for the IPP assignment project. This is what the writer will analyze in this paper. The authors expect that with PT PJB's limitations in project funding, the authors can provide a reference to the best equity funding strategy to be applied commercially through this paper.

The purpose of this study is to assist PT PJB in determining the best equity loan funding strategy to be applied commercially. The authors will analyze several equity funding options that PT PJB might do in the IPP assignment project. It is expected that from the results of the analysis, it can be
seen that the equity funding scheme is the most profitable for PT PJB from the commercial aspect by comparing the results of each option calculation. So, if in the future there is a similar IPP project assigned to PT PJB, this paper can be a reference for PT PJB in implementing the equity loan funding strategy.

2. Method
2.1. Net present value
NPV is one of the indicators most often used to determine the feasibility of a project. NPV is defined as the present value of cash inflows minus the present value of cash outflows [1]. NPV is the present value of the company's cash inflows minus the project investment costs [2] as shown in Equation 1.

\[ NPV = \sum_{t=1}^{n} \frac{CF_t}{(1+r)^t} - Initial \ Investment \]  

(1)

Where:
- \( CF_t \) is cash inflows in year \( t \)
- \( r \) is the cost of capital of the company
- \( t \) is the year

NPV calculations help companies make decisions about whether a project is worth investing in or not. Feasible or not a project can be known through the NPV calculation results, namely if:
- \( NPV > 0 \), then the project is feasible
- \( NPV < 0 \), then the project is not feasible

2.2. Internal rate of return
Like the NPV, IRR is one of the most widely used indicators to determine the feasibility of a project. IRR is the discount rate when NPV = 0 (Brealey, Myers, & Marcus, 2001). IRR represents the discount rate when the Net Present Value (NPV) value is 0, where the present value of the inflow is equal to the current value of the outflow [3].

IRR shows the rate of return obtained if someone or a company invests money in an investment project. By looking at the value of IRR, it can be noticed whether the money invested can provide the desired return. The greater the value of IRR, the more profitable the project. Because, it provides a greater return on investment to the company.

IRR is the rate of return when NPV = 0, so:

\[ \frac{Initial \ Investment}{\sum_{t=1}^{n} \frac{CF_t}{(1+r)^t}} \]  

(2)

There are three IRR calculations used in this paper, i.e. IRR Project, IRR Equity, and IRR PJBI. The IRR calculation which only considers the project's cash flow is called the IRR Project. IRR Project observes cash flow from the project company side, without considering funding activities. Cash flows considered in the IRR Project are outflows from investment costs and cash inflows from project revenues. The intended project revenue is revenue which has been reduced by cost and tax.

In addition to the IRR Project, there are other IRR calculations, namely IRR Equity. Unlike the IRR Project, IRR Equity's cash flow has taken into account the funding activities in it. Cash flow in IRR Equity is the cash flow seen from the shareholder side, namely the cash outflow to fulfill equity and cash inflows of project income after deducting funding activities. Funding activities include loan repayments and interest payments.

Cash available to shareholders is distributed to shareholders according to the number of shares held. The cash flow of each shareholder can also be calculated as the value of the IRR. In this paper, IRR will be calculated for PJBI.
2.3. Framework of study
Based on the background, problems, and study of the concepts above, the framework is arranged as shown in Figure 3.

![Figure 3. Framework of Study](image)

3. Results and discussions
As aforementioned in the previous chapter that the source of project funding comes from debt and equity. Debt is a loan made by a company, including bonds, and returned according to a predetermined payment schedule [4]. Equity is funds provided by shareholders to be returned based on company performance [5].

Based on the project data, the project cost obtained is US$ 1,114,517,996. The cost includes EPC Cost, Development Cost, Initial Working Capital, and Financing Fee, with details as the table below.

| Cost Description       | Amount       |
|------------------------|--------------|
| EPC Cost               | US$ 908,125,000 |
| Development Cost       | US$ 58,581,250 |
| Initial Working Capital| US$ 2,207,520  |
| Financing Fee          | US$ 145,604,226 |
| Project Cost           | US$ 1,114,517,996 |

EPC Cost is the cost imposed on the construction of the plant itself. Costs for the engine, turbine, and generator construction are included in the EPC Cost. Development Cost is the cost imposed on the development of a power plant. It includes the cost of consultants and licensing. Initial Working Capital is the cost used for initial plant operations. Initial Working Capital cost consists of O&M costs and fuel costs. Financing Fee is cost arising from the party giving the loan, such as upfront fees, commitment fees, management fees, etc.

Based on the project cost above, the authors analyze the three equity funding scheme options with the financial model as an analysis tool. The financial model is a tool to estimate the financial performance of business activity. Through the financial model, we can see an overview of financial performance estimates, including NPV and IRR.

The analytical approach taken is to lock in the rates of components A, B, C, D, and E for each option so that the 3 equity funding options have the same component tariffs A, B, C, D, and E. By using the same input data, it can be seen the effect of different equity funding schemes on the output results. The component rates to be locked on the three options are shown in Table 2.
Table 2 Tariff

| Tariff            | Amount            |
|-------------------|-------------------|
| Component A year 1-7 | 4.9754 cUS$/kWh   |
| Component A year 8-20 | 2.9852 cUS$/kWh   |
| Component A year 21-25 | 1.7911 cUS$/kWh   |
| Component B        | 0.4120 cUS$/kWh   |
| Component C        | 2.7083 cUS$/kWh   |
| Component D        | 0.2010 cUS$/kWh   |
| Component E        | 0.4756 cUS$/kWh   |

The indicators used by the authors in this paper are NPV, IRR Project, IRR Equity, NPV PJBI, and IRR PJBI. Through PJBI's NPV and PJBI's IRR, it is expected to see the level of return that will be obtained by PJBI based on the equity cash flow issued by PJBI and the income received by PJBI.

In funding option 1, the Partner provides a loan to PJBI of 41% equity, so that PJBI can fulfill its obligations in terms of meeting the equity payment of the portion of shares, which is 51%. A loan from the partner will be returned by PJBI through instalments every year in the form of principal instalments plus interest at 5% for 8 years as of COD.

![Figure 4. Option 1](image)

In funding option 2, the Partner provides a direct loan to the Project Company in the form of a 41% Shareholder Loan, so that the 41% equity deficit of PJBI can be fulfilled. The Shareholder Loan will be returned by the Project Company through annual instalments in the form of principal instalments plus interest at 5% for 8 years as of the COD.

![Figure 4. Option 2](image)

In funding option 3, a 41% shortage in the PJBI equity portion is fulfilled through the issuance of bonds by PJBI to Partner. Through the issuance of this bond, PJBI will receive a fund of 41% equity which will be deposited to the Project Company. Bond returns are made by PJBI to the Partner by paying a coupon of 5% every year until the maturity date and the principal will be paid at the maturity date, which is the 8th year after COD.
The three options have the same number of interest/coupon rate and repayment period, which is 5% and 8 years, respectively. The authors believe that the same interest/coupon rate and repayment period between the three options are needed to assure the fairness of the comparison.

| Option | Scheme | Interest | Repayment Period |
|--------|--------|----------|------------------|
| 1      | A loan from partner to PJBI • PJBI must repay the loan to the partner | 5% | 8 years |
| 2      | A loan from partner to Project Company • Project Company must repay the loan to partner | 5% | 8 years |
| 3      | PJBI to issue a bond to Partner • PJBI has the obligation to pay back the principal | 5% | 8 years |

Based on the results of the calculation of the three options, the authors analyze by comparing the results of the calculation of each option. Looking at the results of the analysis, the NPV value for the three options is greater than 0, indicating that by applying the scheme and tariff set out above, the project is worth investing in.
Based on the calculation of the PJBI NPV for each option, it demonstrates that the option 2 scheme provides the greatest NPV value for PJBI, which is 68,385,771 US$. If implementing option 3, namely bond issuance, the NPV obtained by the PJBI is 47,95,525 US$. Through the application of option 1, PJBI received the smallest NPV value, amounting to US$ 39,513,414 (Figure 6).

If you check the IRR comparison above, options 1 and 3 have the same IRR Project and IRR Equity values. This is because the cash flow of both options is the same. There is no repayment of a loan made at the project level at options 1 and 3 (Figure 7). The lending at options 1 and 3 is carried out by PJBI as shareholders, hence the difference in cash flow in options 1 and 3 occurs only at PJBI cash flow. Since there is a repayment loan made by the project company in option 2, the interest expense to be paid by the project company is greater compared to the other 2 options, which is resulted from the bank interest payment and partner interest payment. It leads to less pre-taxable income for the project company, thereby causing even fewer taxes to be imposed. Because taxes are less than options 1 and 3, revenue for the project company is greater.

IRR Equity in option 2 has a smaller value than the other two options, namely 16.90%. This occurred because, in option 2, the project company repays the loan before the money is available for the shareholders. Whereas for options 1 and 3, loan repayments are made by PJBI, not by the project company, so the money available to shareholders is greater than option 2. This causes the IRR Equity option 1 and 3 greater than option 2, namely 19.11%. If implementing option 1, the IRR obtained by PJBI is 14.69%, while option 3 offers a PJBI IRR of 15.59%. The difference in the PJBI IRR value in option 1 and 3 relates to the loan repayment method mentioned above. PJBI IRR and Equity IRR in option 2 have the same value because there is no partner loan repayment activity carried out by PJBI in option 2.

Looking at the calculation of PJBI NPV and PJBI IRR above, it can be seen that funding option 2, namely by using the Shareholder Loan scheme, offers the highest NPV and IRR values for PJBI, amounting to 68,385,771 US$ and 16.90%. Through this data, by implementing an equity funding option through shareholder loans, PJBI gets a greater return than option 1 and 3. Based on the discussion above, it can be concluded that the calculation of NPV, IRR Project, IRR Equity, NPV PJBI, and IRR PJBI from the three equity funding options are as in Table 3.
Table 4 Summary of the results

| Option   | NPV       | Project IRR | Equity IRR | PJBI NPV   | PJBI IRR |
|----------|-----------|-------------|------------|------------|----------|
| Option 1 | US$ 491,565,080 | 12.00%      | 19.11%     | US$ 39,513,414 | 14.69%   |
| Option 2 | US$ 495,767,630 | 12.05%      | 16.90%     | US$ 68,385,771 | 16.90%   |
| Option 3 | US$ 491,565,080 | 12.00%      | 19.11%     | US$ 47,959,525 | 15.59%   |

4. Conclusions

Based on the data above, it can be concluded that option 1 is not the best option to implement because options 2 and 3 offer a higher return for PJBI. Of the three possible options, option 2 has the highest PJBI NPV and IRR values. From the financial aspect, the best equity funding scheme to be implemented by PJB in the IPP assignment project is option 2, namely by using a Shareholder Loan because the option offers a higher return value for PJBI compared to the other two options as discussed above.

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