**Project Cost**

For the proposed 500 MW coal-fired power plant, the total costing is presented in the summary below. Included are the installed capacity, capacity factor and the expected operating years of the proposed power plant.

**Table**

**Project Costing Summary**

|  |  |  |
| --- | --- | --- |
|  |  |  |
| installed capacity | [MW] | 500 |
| capacity factor |  | 55 |
| Energy | GWh/year |  |
| cost/kW | [Php/kW] | 9.80 |
| capital cost | [Php] | 137,374,300,836.88 |
| Life | Years | 25 |
| discount rate |  | 0.05 |
| Capital recovery factor |  | 0.055084036 |
| Annual capacity cost | PHP | 11,799,034,681.88 |
| Fixed O&M | PHP | 1,311,003,853.54 |
| total fixed cost | Php | 4,945,474,830.13 |
| Fixed cost/kWh | [Php /kWh] | 9,890.95 |
| Variable cost/kWh | [Php /kWh] | 1,311.00 |
| LCOE | [Php /kWh] | 0.37 |

Based from the table above, the proposed power plant with an installed capacity of 500 MW will have a capital cost of approximately Php 137,374,300,836.88. The fixed operating and maintenance cost of the power plant are also presented in the table for the expected operating life of 5 years.

**Depreciation**

**Table**

**Depreciation Costs**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Book Value (Php)** | **Salvage Value** | **Service Life (yrs)** | **Depreciation (BV-SV)/SL** |
| Purchased Equipment | 74,751,908,000.00 | 3,737,595,400.00 | 25 | 2,840,572,504.00 |
| Instrumentation and Control | 14,950,381,600.00 | 747,519,080.00 | 25 | 568,114,500.80 |
| Service Facilities | 1,966,505,780.31 | 98,325,289.02 | 25 | 74,727,219.65 |
| Capital Cost | 137,374,300,836.88 | 6,868,715,041.84 | 25 | 5,220,223,431.80 |
| Miscellaneous | 7,475,190,800.00 | 373,759,540.00 | 25 | 284,057,250.40 |
| Total | | | | 8,987,694,906.65 |

Table \_ shows the depreciation values of the purchased equipment, instrumentation and control, service facilities, capital cost and other miscellaneous costs. It also presents the book value, salvage value and depreciation of the purchased equipment and other expenses with service life of 25 years. The total depreciation of the proposed power plant equipment and facilities amount to Php 8,987,694,906.65.

**Return of Investment**

**Table \_**

**Return of Investment**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Year** | **Period** | **TCl** | **Net Income After Tax** | **ROI** |
|  | **(Php)** | **(Php)** | **(%)** |
| 2022 | 2 | 137,374,300,836.88 | 31,124,965,318.12 | 22.66 |
| 2023 | 3 | 106,249,335,518.76 | 31,124,965,318.12 | 29.29 |
| 2024 | 4 | 75,124,370,200.64 | 31,124,965,318.12 | 41.43 |
| 2025 | 5 | 43,999,404,882.53 | 31,124,965,318.12 | 70.74 |
| 2045 | 25 | 578,499,901,479.78 | 31,124,965,318.12 | 5.38 |
|  |  |  | **Average** | 33.90 % |

Table \_\_ presents the return of investment of the proposed power plant in a service life of 25 years. It shows the TCl, net income after tax and rate of investment with the corresponding period of year. The average rate of investment is 33.90 %.

**Payback Period**

**Table \_**

**Payback Period**

|  |  |  |  |
| --- | --- | --- | --- |
| **Year** | **Net Income after** | **TCl** | **Depreciation** |
| **Tax (Php)** | **(Php)** | **(Php)** |
| 2022 | 31,124,965,318.12 | 137,374,300,836.88 | 128,386,605,930.22 |
| 2023 | 31,124,965,318.12 | 106,249,335,518.76 | 119,398,911,023.57 |
| 2024 | 31,124,965,318.12 | 75,124,370,200.64 | 110,411,216,116.92 |
| 2025 | 31,124,965,318.12 | 43,999,404,882.53 | 101,423,521,210.26 |
| Average | 31,124,965,318.12 | 90,686,852,859.70 | 114,905,063,570.24 |
| **Payback Period** | **4 2/5** | | |

Table \_ presents the length of time required to recover the initial investment of the proposed power plant. The table includes the net income after tax, TCl and depreciation in four year and the average. The payback period is 4 years and 2/5 months.

**Sensitivity Analysis**

**Table \_**

**Sensitivity Analysis**

|  |  |  |  |
| --- | --- | --- | --- |
| Particular | Change | ENPV | EIRR |
| Base case |  | PHP | % |
| Construction delay | 1 year | 31,124,965,318.12 | 3.35737112 |
| Reduce of Power Generation by 10% | 10% | 30,595,597,169.87 | 3.286475234 |
| Increase of Fuel Price by 10% | 10% | 26,984,754,495.83 | 2.768930845 |
| Drop of fuel price by 10% | 10% | 32,370,418,978.98 | 3.519706581 |

Table \_ shows the possible outcome in some cases such as construction delay, reduce of power generation by 10%, increase of fuel price by 10% and drop of fuel price by 10%. Based on the table, if there will be a delay in construction, there will be approximately 3% of internal rate of return. For the reduction of power generation, the EIRR is approximately 3.29%. While increasing and decreasing of fuel price by 10% will have an EIRR of 2.77% and 3.52%, respectively.