

# Investment Feasibility Analysis of a Coal Project Related to Improvement Production Capacity

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**Abstract**—Indonesia is currently becoming one of the strongest emerging market in terms of economic growth. This achievement requires supporting facility such as transportation infrastructure, manufacture, etc. Such rapid growth will not last long if not sustained by an adequate supply of electricity. In order to meet the target, the government established some power plants which one of them is Naga coal-fired station in Aceh. In the end of 2017, PT. Bagan Ekuitas Losari (BEL) has successfully signed a Memorandum of Understanding (MoU) with PLTU Naga to provide an amount of 600.000 tons per year. Therefore, PT. Tirta Bara Unity (TBU) as a mining contractor of PT. Bagan Ekuitas Losari was assigned to enhance the yearly production capacity of coal from 120.000 tons to 600.000 tons with overburden removal of 192.000 bcm to 2.600.000 bcm with stripping ratio of 4.1. For such increasing, the question is how TBU can finance the project with a limited cash flow due to the high number of long-term receivables. Should they provide fully owned capital, fully rent, or lease from financial institution? How's the financial analysis that can be indicator of the chosen alternative? By identifying and analyzing all aspect, particularly in terms of financial aspect, the best decision can be determined.

**Keywords**—increasing production; financial analysis; coal mining contractor; balance sheet; scenario analysis

## I. INTRODUCTION

PT. TBU as a mining contractor is appointed to run coal project with significant production increase. The challenge is that for several years the coal production target in that area was only 120.000 tons per year and overburden removal was 192.000 bcm per year with stripping ratio (SR) of 1.6. According to mine plan design, to produce coal of 600.000 tons per year, it is required to excavate an amount of 2.600.000 BCM per year with stripping ratio of 4.1. For such increasing, the question is how TBU can finance the project with a limited cash flow. As seen on the balance sheet of the company, the cash and cash equivalent are limited due to the high number of long-term receivables. Should they provide fully owned capital, fully rent, or lease from financial institution? How is the financial analysis of capital budgeting can be an indicator of the chosen alternative?

“Survival” and “company growth” are the key aspect why TBU with this specific topic was chosen. This company concentrates on how to survive in the very limited cash flow, meanwhile there is a big opportunity for company to have a

“giant leap” by ramping up production volume many times over than existing production capacity. By using all available resources, the authors are forced to formulate a strategy that meet the company investment capacity while the production target must be achievable. Therefore, some scenario of financial feasibility analysis is proposed to present some possibilities that may occur in the future.

## II. METHODS

Analysis used in this paper will cover five important aspects: coal overview, marketing, legal, technical and also financial. Coal overview will provide the picture of coal market and price in the global and Indonesia region. Marketing analysis will explain domestic coal power plant and opportunity of coal export. Legal aspect will cover both PT. Bagan Ekuitas Losari (BEL) as the concession owner and also PT. Tirta Bara Unity (TBU) as the mining contractor. Moreover, technical aspect will elaborate available working scheme and production target [1]. At the end, as the core of this paper, financial aspect will be explained in details.

## III. RESULTS AND DISCUSSION

### A. Coal Overview

1) *Global coal overview*: Coal price in Indonesia highly depends on the global situation. China, India, and United States are playing significant role in the global coal market.

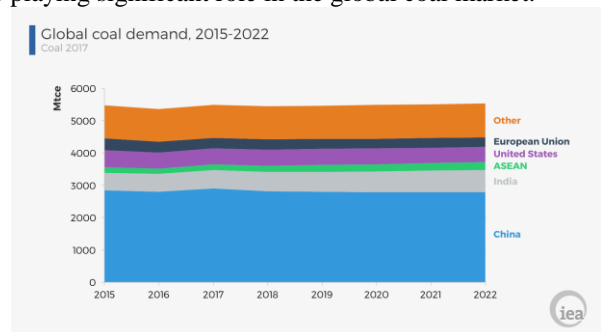


Fig. 1. Projected global coal demand period of 2015-2022.

According to the figure 1, there will be coal demand decline in Europe, meanwhile Asia will be “rising star region”.

2) *Indonesia coal overview:* As explained in the figure 2, 96% of Indonesia coal export focuses on the region of Asia with India and China.

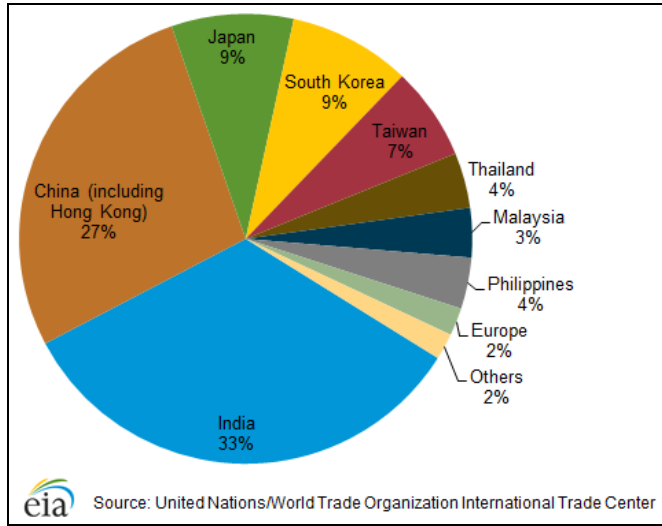


Fig. 2. Indonesia coal export by destination.

Coal in Indonesia is not only used for export, but also for domestic needs.

TABLE I. COAL PRODUCTION DATA DURING PERIOD OF 2013–2017

Description	2013	2014	2015	2016	2017
Total Production (Million Tons)	474	458	461	463	476
Export (Million Tons)	402	382	375	372	369
Domestic (Million Tons)	72	76	86	91	107
Domestic to Total Coal Production	15%	17%	19%	20%	22%

It is projected that coal domestic consumption will increase significantly due to the government policy for electricity using coal power plant. Rupiah per kwh for coal is the lowest price compared to other sources of energy. In 2017, the using of coal as source of energy valued Rp. 859 per kwh, meanwhile fuel valued Rp. 6.691 per kwh.

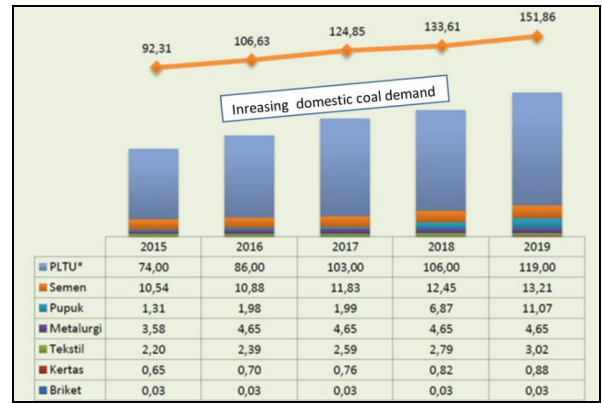


Fig. 3. Projected coal domestic consumption for types of industries period of 2015-2019.

B. Market Analysis

1) *Domestic coal power plant:* In Aceh area, the electricity peak load in 2017 has reached about 350 MW while the power supply capacity is about 250 MW. Therefore, some power plants are built to support the need of electricity.

Strong point of BEL is the location of mine area which is closely adjacent to PLTU (23 km). Meanwhile, total mineable coal reserve in the mine concession area is 38 million tons that will be sustainable in the long term.

2) *Coal export:* Aceh is located closely to India that becomes an advantage in terms of coal transshipment cost.

C. Legal Framework

PT Bagan Ekuitas Losari has a concession area of 1,495 Hectares (Ha) ended in September 2027. In terms of coal supply, BEL and PLTU Naga have signed mutual agreement for coal supply with minimum coal volume of ± 500.000 tons per year.

In terms of cooperation with BEL, TBU has signed coal mining services contract with period of contract for 10 years in 2012.

D. Technical Analysis

1) *Working scheme:* In the figure below, it can be seen the whole process of work of PT. Tirta Bara Unity as an integrated process from start to the end process.

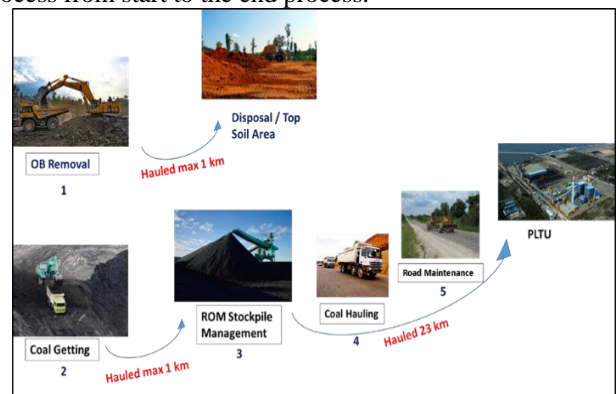


Fig. 4. Working scheme of TBU site Aceh.

## 2) Production target

TABLE II. PRODUCTION TARGET 2018-2021

<i>Target Production</i>	<i>Jan-18</i>	<i>Feb-18</i>	<i>Mar-18</i>	<i>Apr-18</i>	<i>May-18</i>	<i>Jun-18</i>	<i>Jul - Dec 18</i>	<i>2018</i>	<i>2019-2021</i>
<b>OB</b>	50,000	75,000	75,000	140,000	140,000	140,000	220,000	1,940,000	2,600,000
<b>Coal</b>	45,000	45,000	45,000	45,000	45,000	45,000	55,000	600,000	630,000
<b>SR</b>	1.1	1.7	1.7	3.1	3.1	3.1	4.0	3.2	4.1
<i>Production by Equipment</i>									
<b>OB</b>	50,140	66,771	75,346	151,312	144,395	130,707	251,937	1,926,690	2,622,773
<b>Coal</b>	46,283	46,226	52,163	48,636	46,413	42,013	61,185	599,395	636,959
<b>SR</b>	1.1	1.4	1.4	3.1	3.1	3.1	4.1	3.2	4.1

### E. Financial Analysis

In the financial analysis, some options that have been developed are as follow:

- Full Rental Equipment: all equipment will be rented from other vendors
- All Leasing Equipment: all equipment will be leased from financial institutions

- All Owned-Capital Based: all equipment will be purchased using self-capital.

The best alternative of investment will be chosen to maximize the profit of investment.

1) *Revenue projection*: Total revenue remain the same and only few type of cost will be changed.

TABLE III. REVENUE PROJECTION PERIOD OF 2018–2021

<b>Description</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>	<b>%</b>
<i>OB Removal</i>	38,533,794,687	52,455,456,973	52,455,456,973	52,455,456,973	195,900,165,605	54%
<i>Coal Getting</i>	8,691,223,379	9,235,907,246	9,235,907,246	9,235,907,246	36,398,945,116	10%
<i>ROM Stockpile Management</i>	3,896,065,653	4,140,234,282	4,140,234,282	4,140,234,282	16,316,768,500	5%
<i>Coal Hauling</i>	23,016,757,087	24,459,230,223	24,459,230,223	24,459,230,223	96,394,447,755	27%
<i>Road Maintenance</i>	3,615,000,000	3,615,000,000	3,615,000,000	3,615,000,000	14,460,000,000	4%
<b>Total Revenue</b>	<b>77,752,840,805</b>	<b>93,905,828,723</b>	<b>93,905,828,723</b>	<b>93,905,828,723</b>	<b>359,470,326,975</b>	<b>100%</b>

2) *Cost analysis*: Cost analysis consists of several main cost that can be derived into some details cost [2] as follow:

#### a) Cost of revenue

- Cost of Goods Sold

Cost of goods sold (COGS) is the direct costs attributable to the production of the goods sold in a company. It consists of rental cost, fuel cost, maintenance cost, and direct labor.

- Sales & General Administration Cost

Sales and general administration cost is the component of non-production cost such as indirect labor and overhead cost.

b) *Depreciation and amortization cost*: The amount of depreciation and amortization are calculated using straight line method for 4 years period with salvage value of 0.

c) *Interest cost*: Interest cost is calculated in the Leasing Scenario with interest rate assumption as stipulated on the table 4.

TABLE IV. LEASING EQUIPMENT PARAMETER

<b>Leased Period</b>	4 years	48 months
<b>Insurance Cost DT</b>	1.46%	5.84%
<b>Insurance Cost Heavy Equipment</b>	0.85%	3.40%
<b>DP</b>	30%	
<b>Interest Rate</b>	15% per year	
<b>Provision&amp;Administration</b>	1%	

d) *Corporate income tax*: Corporate income tax rate of 25 percent applies in Indonesia [3].

3) *Profitability analysis*: Profitability analysis will be carried out by performing three possibilities of scenario as follow:

a) *Full rental equipment*: Given the fact that rental equipment will bring up high operating cost, it can be seen that percentage of EBITDA is only 10.5% of revenue.

**TABLE V. PROFIT AND LOSS - FULL RENTAL EQUIPMENT SCENARIO**

Description	% to revenue	2018	2019	2020	2021	Total
<i>Revenue</i>		77,752,840,805	93,905,828,723	93,905,828,723	93,905,828,723	359,470,326,975
<i>Cost of Revenue</i>		65,101,538,016	85,213,436,268	86,081,087,897	95,280,850,489	331,676,912,670
<b>EBITDA</b>	<b>7.7%</b>	<b>12,651,302,789</b>	<b>8,692,392,455</b>	<b>7,824,740,826</b>	<b>-1,375,021,765</b>	<b>27,793,414,306</b>
<i>Depreciation &amp; Amortization</i>	1.2%	1,050,000,000	1,050,000,000	1,050,000,000	1,050,000,000	4,200,000,000
<b>EBIT</b>	<b>6.6%</b>	<b>11,601,302,789</b>	<b>7,642,392,455</b>	<b>6,774,740,826</b>	<b>-2,425,021,765</b>	<b>23,593,414,306</b>
<i>Interest</i>	0.0%	0	0	0	0	0
<b>EBT</b>	<b>6.6%</b>	<b>11,601,302,789</b>	<b>7,642,392,455</b>	<b>6,774,740,826</b>	<b>-2,425,021,765</b>	<b>23,593,414,306</b>
<i>Tax (25%)</i>	1.8%	2,900,325,697	1,910,598,114	1,693,685,207		6,504,609,018
<b>EAT</b>	<b>4.8%</b>	<b>8,700,977,092</b>	<b>5,731,794,342</b>	<b>5,081,055,620</b>	<b>(2,425,021,765)</b>	<b>17,088,805,288</b>

b) *All leasing equipment*: Earn After Tax (EAT) (>100%). To perform such increasing value, it requires increased significantly compared with Full Rental Scenario higher capital expenditure.

**TABLE VI. PROFIT AND LOSS - ALL LEASING EQUIPMENT SCENARIO**

Description	% to revenue	2018	2019	2020	2021	Total
<i>Revenue</i>		77,752,840,805	93,905,828,723	93,905,828,723	93,905,828,723	359,470,326,975
<i>Cost of Revenue</i>		31,141,538,016	43,849,436,268	44,717,087,897	53,916,850,489	173,624,912,670
<b>EBITDA</b>	<b>51.7%</b>	<b>46,611,302,789</b>	<b>50,056,392,455</b>	<b>49,188,740,826</b>	<b>39,988,978,235</b>	<b>185,845,414,306</b>
<i>Depreciation &amp; Amortization</i>	25.5%	18,294,309,875	22,908,128,500	22,908,128,500	27,521,947,125	91,632,514,000
<b>EBIT</b>	<b>26.2%</b>	<b>28,316,992,914</b>	<b>27,148,263,955</b>	<b>26,280,612,326</b>	<b>12,467,031,110</b>	<b>94,212,900,306</b>
<i>Interest</i>	5.4%	3794799581	4810120989	4810120989	5825442397	19240483955
<b>EBT</b>	<b>20.9%</b>	<b>24,522,193,334</b>	<b>22,338,142,967</b>	<b>21,470,491,337</b>	<b>6,641,588,713</b>	<b>74,972,416,350</b>
<i>Tax (25%)</i>	5.2%	6,130,548,333	5,584,535,742	5,367,622,834	1,660,397,178	18,743,104,088
<b>EAT</b>	<b>15.6%</b>	<b>18,391,645,000</b>	<b>16,753,607,225</b>	<b>16,102,868,503</b>	<b>4,981,191,535</b>	<b>56,229,312,263</b>

c) *All owned-capital*: This scenario requires the highest capital expenditure, but also will perform the highest earning.

**TABLE VII. PROFIT AND LOSS - ALL OWNED CAPITAL SCENARIO**

Description	% to revenue	2018	2019	2020	2021	Total
<i>Revenue</i>		77,752,840,805	93,905,828,723	93,905,828,723	93,905,828,723	359,470,326,975
<i>Cost of Revenue</i>		31,141,538,016	43,849,436,268	44,717,087,897	53,916,850,489	173,624,912,670
<b>EBITDA</b>	<b>51.7%</b>	<b>46,611,302,789</b>	<b>50,056,392,455</b>	<b>49,188,740,826</b>	<b>39,988,978,235</b>	<b>185,845,414,306</b>
<i>Depreciation &amp; Amortization</i>	23.9%	17,190,312,500	21,508,750,000	21,508,750,000	25,827,187,500	86,035,000,000
<b>EBIT</b>	<b>27.8%</b>	<b>29,420,990,289</b>	<b>28,547,642,455</b>	<b>27,679,990,826</b>	<b>14,161,790,735</b>	<b>99,810,414,306</b>
<i>Interest</i>	0.0%	0	0	0	0	0
<b>EBT</b>	<b>27.8%</b>	<b>29,420,990,289</b>	<b>28,547,642,455</b>	<b>27,679,990,826</b>	<b>14,161,790,735</b>	<b>99,810,414,306</b>
<i>Tax (25%)</i>	6.9%	7,355,247,572	7,136,910,614	6,919,997,707	3,540,447,684	24,952,603,576
<b>EAT</b>	<b>20.8%</b>	<b>22,065,742,717</b>	<b>21,410,731,842</b>	<b>20,759,993,120</b>	<b>10,621,343,051</b>	<b>74,857,810,729</b>

#### 4) Cash flow analysis

#### a) Full rental equipment

**TABLE VIII. CASH FLOW - FULL RENTAL EQUIPMENT SCENARIO**

Description	Y0	2018	2019	2020	2021	2022
<i>Cash from operating activities</i>		3,179,832,923	6,212,146,227	6,203,359,922	(608,374,883)	6,301,841,098
<i>Cash paid for capex</i>	(4,200,000,000)					
<i>Cash provided from (used to) investment activities</i>	(4,200,000,000)	-	-	-	-	-
<i>Cash before financing activities</i>	(4,200,000,000)	3,179,832,923	6,212,146,227	6,203,359,922	(608,374,883)	6,301,841,098
<i>Cash provided from (used to) financing activities</i>	-	-	-	-	-	-
<b>Net cash flow</b>	(4,200,000,000)	3,179,832,923	6,212,146,227	6,203,359,922	(608,374,883)	6,301,841,098

Table 8. Cont.

<i>Cash at the beginning</i>	-	(4,200,000,000)	(1,020,167,077)	5,191,979,150	11,395,339,072	10,786,964,190
<i>Cash at the end</i>	(4,200,000,000)	(1,020,167,077)	5,191,979,150	11,395,339,072	10,786,964,190	17,088,805,288

*b) All leasing equipment based*

TABLE IX. CASH FLOW - ALL LEASING EQUIPMENT SCENARIO

Description	Y0	2018	2019	2020	2021	2022
<i>Cash from operating activities</i>		27,015,610,287	43,902,208,599	43,893,422,294	39,095,227,939	13,195,841,098
<i>Cash paid for capex</i>	(18,525,234,000)	(15,822,780,000)				
<i>Cash provided from (used to) investment activities</i>	(18,525,234,000)	(15,822,780,000)	-	-	-	-
<i>Cash before financing activities</i>	(18,525,234,000)	11,192,830,287	43,902,208,599	43,893,422,294	39,095,227,939	13,195,841,098
<i>Cash provided from (used to) financing activities</i>	-	(15,093,018,331)	(19,131,245,989)	(19,131,245,989)	(23,169,473,647)	-
<i>Net cash flow</i>	(18,525,234,000)	(3,900,188,043)	24,770,962,610	24,762,176,305	15,925,754,292	13,195,841,098
<i>Cash at the beginning</i>	-	(18,525,234,000)	(22,425,422,043)	2,345,540,567	27,107,716,872	43,033,471,165
<i>Cash at the end</i>	(18,525,234,000)	(22,425,422,043)	2,345,540,567	27,107,716,872	43,033,471,165	56,229,312,263

*c) All owned-capital based*

TABLE X. CASH FLOW - ALL OWNED-CAPITAL SCENARIO

Description	Y0	2018	2019	2020	2021	2022
<i>Cash from operating activities</i>		25,790,911,048	42,349,833,727	42,341,047,422	37,215,177,434	13,195,841,098
<i>Cash paid for capex</i>	(43,085,000,000)	(42,950,000,000)				
<i>Cash provided from (used to) investment activities</i>	(43,085,000,000)	(42,950,000,000)	-	-	-	-
<i>Cash before financing activities</i>	(43,085,000,000)	(17,159,088,952)	42,349,833,727	42,341,047,422	37,215,177,434	13,195,841,098
<i>Cash provided from (used to) financing activities</i>	-	-	-	-	-	-
<i>Net cash flow</i>	(43,085,000,000)	(17,159,088,952)	42,349,833,727	42,341,047,422	37,215,177,434	13,195,841,098
<i>Cash at the beginning</i>	-	(43,085,000,000)	(60,244,088,952)	(17,894,255,225)	24,446,792,197	61,661,969,631
<i>Cash at the end</i>	(43,085,000,000)	(60,244,088,952)	(17,894,255,225)	24,446,792,197	61,661,969,631	74,857,810,729

5) *Balance sheet analysis*: Analyzing TBU as a whole is very important to have a more understanding whether the company is able to perform some proposed scenarios or some limitations will hamper the project [4]. Report of the balance sheet TBU during period of 2015 – Oct 2017 is as follow:

TABLE XI. BALANCE SHEET REPORT OF TBU PERIOD OF 2015 - OCT 2017

Description	Multi Period Spreadsheet		
	2015	2016	Jan-Oct 2017
<i>Assets</i>			
<i>Total current assets</i>	22,471,311,442	25,380,690,915	27,598,920,370
<i>Non current assets</i>	89,819,973,827	87,728,374,975	86,881,221,665
<i>Total assets</i>	<b>112,291,285,269</b>	<b>113,109,065,889</b>	<b>114,480,142,035</b>
<i>Liabilities and equities</i>			
<i>Total current liabilities</i>	17,015,638,131	17,495,132,676	18,818,719,732
<i>Total long term liabilities</i>	66,589,308,836	63,159,221,091	61,027,909,437
<i>Total liabilities</i>	<b>83,604,946,967</b>	<b>80,654,353,766</b>	<b>79,846,629,169</b>

Table 11. Cont.

<i>Total equity</i>	<b>28,686,338,302</b>	<b>32,454,712,123</b>	<b>34,633,512,865</b>
<i>Total liabilities &amp; equity</i>	<b>112,291,285,269</b>	<b>113,109,065,889</b>	<b>114,480,142,035</b>

- *Current Ratio*: 1.47, meaning that the company is able to cover its short-term liabilities with its current assets.
- *Debt Ratio* : 0.70, meaning that the company should carefully manage its debt since 70% of total asset consists of debt.
- *Working Capital* : Rp. 8,780,200,637,-, meaning that the company has some amount of money to run its business [5].



6) Financial feasibility studies

a) Full rental equipment

Cash Flow Y0 (4,200,000,000)	Cash Flow Y1 3,179,832,923	Cash Flow Y2 6,212,146,227	Cash Flow Y3 6,203,359,922	Cash Flow Y4 (608,374,883)	Cash Flow Y5 6,301,841,098
Hurdle Rate		16%			
IRR		97%			
NPV		Rp 8,445,250,486			
PBP		14 months			

Fig. 5. Financial feasibility indicator - full rental equipment.

According to the figure 6, it can be seen that with low capital resulting the high Internal Rate of Return (IRR), short term Pay Back Period (PBP) and positive Net Present Value (NPV).

b) All leasing equipment: Compared to the full rental equipment scenario, all leasing equipment may result lower IRR and longer PBP, but NPV may result higher.

Cash Flow Y0 (18,525,234,000)	Cash Flow Y1 (3,900,188,043)	Cash Flow Y2 24,770,962,610	Cash Flow Y3 24,762,176,305	Cash Flow Y4 15,925,754,292	Cash Flow Y5 13,195,841,098
Hurdle Rate		16%			
IRR		55%			
NPV		Rp 23,675,722,114			
PBP		23 months			

Fig. 6. Financial feasibility indicator - all leasing equipment.

c) All owned-capital: Scenario of all owned capital requires the highest amount of capital compared to other alternative scenarios. As the result, IRR will be the lowest and PBP will be the longest. Meanwhile NPV will be a slightly higher than all leasing equipment scenario.

Cash Flow Y0 (43,085,000,000)	Cash Flow Y1 (17,159,088,952)	Cash Flow Y2 42,349,833,727	Cash Flow Y3 42,341,047,422	Cash Flow Y4 37,215,177,434	Cash Flow Y5 13,195,841,098
Hurdle Rate		16%			
IRR		34%			
NPV		Rp 23,756,850,928			
PBP		30 months			

Fig. 7. Financial feasibility indicator - all owned capital.

Summary of all scenarios is as follow:

TABLE XII. FINANCIAL FEASIBILITY STUDY FOR EACH SCENARIO

Scenario Analysis	NPV	IRR	PBP	Capital Year-0	Total Capital Required
Full Rental	Rp 8,445,250,486	97%	14 months	(Rp 4,200,000,000)	(Rp 7,959,244,938)
All leasing	Rp 23,675,722,114	55%	23 months	(Rp 18,525,234,000)	(Rp 36,080,159,672)
Owned Capital	Rp 23,756,850,928	34%	30 months	(Rp 43,085,000,000)	(Rp 82,688,262,139)

According to the table 12, full rental scenario is the most suitable choice for current financial situation. Not only will bring the highest IRR and the shortest PBP, but also TBU has sufficient capital to meet total capital required.

7) Rise and fall analysis: Full rental scenario will be further exercised in terms of rise and fall analysis. In this project, fuel will be fully responsibility of mining owner. Price of services will not be in USD, but IDR.

Rise and fall analysis is carried out according to possibility of increasing cost in the near future with component as follow:

- *Manpower Benefit* : represented by the increasing minimum wage of labor.
- *Maintenance Cost* : represented by the increasing cost of spare part.
- *Rental Cost* : remain the same during 4 years project
- *Depreciation and Amortization* : remain the same since straight line method applied for this calculation.
- *Other overhead* : Constant factor.

TABLE XIII. RISE AND FALL - FULL RENTAL SCENARIO

Sensitivity Analysis - Full Rental			
Cost Component	IDR	Percentage	Decimal
Rental Cost (T)	147,930,000,000	45.4%	0.454
Depresiasi+Amortisasi (T)	4,200,000,000	1.3%	0.013
Maintenance Cost (M)	78,627,963,120	24.1%	0.241
Manpower Benefit (L)	79,271,579,400	24.3%	0.243
Other Overhead (C)	15,725,370,150	4.8%	0.048
Total Cost	325,754,912,670	100.0%	1.000
Parameter	Base	New	Change
Base National Labor (manpower benefit), L	Rp. 2,700,000 /Month	Rp. 3,000,000 /Month	11%
Base Material (Rental+Depr), T	1	1	0%
Base Maintenance, M	1	1.02	2%
Base Exchange Rate, E	1	1	0%
Raise and Fall Formula			
Index =	$Lc*(Li/Ei)/(L/E)+Mc*(Mi/M)+Tc*(Ti/T)+C$		
Index =	1.032		
Selling Price	Old	New	% Change
OB Removal	20,000	20,637	3.19%
Coal Getting	14,500	14,962	3.19%
ROM Stockpile Management	6,500	6,707	3.19%

Table 13. Cont.

<i>Coal Hauling</i>	1,600	1,651	3.19%
<b>Raise and Fall Formula</b>			
	= 0.243 x (Li/L) + 0.241 x (Mi/M) + 0.516		

#### IV. CONCLUSION

There are 3 (three) proposed scenarios for this project, namely full rental equipment based, all leasing equipment based, and all owned capital based. These three scenarios will result the same revenue but different cost since cost component vary one another. According to the balance sheet of TBU, current working capital is Rp. 8,780,200,637,-.

Based on scenario and balance sheet analysis in this study, proposed recommendation is full rental equipment. This scenario delivers the best financial outcome in terms of IRR (97%), PBP (14 months) and also requires minimum capital (Rp 7,959,244,938). TBU is able to meet this scenario using internal fund and strongly recommend to double up the production in the second year to generate more profit.

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