



BUSINESS PIVOTING STRATEGY IN THE MINING INDUSTRY (CASE STUDY: PT MEMBARA BERSAMA ABADI, EAST KALIMANTAN, INDONESIA)

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ABSTRACT

PT Membara Bersama Abadi (MBA), a coal mining company in East Kalimantan, Indonesia, is facing a critical business challenge due to the impending expiration of its mining license in 2029 and increasing pressure from global energy transition trends. The company risks significant revenue loss unless it finds a sustainable business model beyond coal. This research aims to evaluate the financial feasibility and strategic viability of converting MBA's existing coal hauling road into a commercial logistics corridor. The study employs a quantitative approach, analyzing project cash flows, Net Present Value (NPV), Internal Rate of Return (IRR), Payback Period, and Weighted Average Cost of Capital (WACC) using different financing models. The results indicate strong financial performance with a positive NPV ranging from IDR 37.1 to 46.2 billion and IRR exceeding 40%, ensuring payback within 1–2 years. Sensitivity analysis reveals volume risk and regulatory delays as the main threats. The study concludes that infrastructure monetization is a viable strategic pivot for PT MBA, offering long-term financial stability while aligning with Indonesia's sustainable development goals. The findings provide a model for similar firms navigating post-mining economic uncertainty..

INTRODUCTION

The global coal sector is experiencing a mounting burden with the international campaigns for decarbonization and changing trends in energy use. Several countries have pledged to achieve net-zero emissions, which requires a shift to cleaner forms of energy and significantly burdens economies that rely on coal (Hauenstein, 2023; Hia et al., 2023; Huang et al., 2018). In Indonesia, one of the largest producers of coal in the world, these burdens are apparent as environmental regulations become stricter and the demand for thermal coal becomes increasingly unstable.

In 2023, coal production reached 775 million tons, representing a 13% increase, while exports totaled 518 million tons, up by 11%. China was the largest export destination, with a volume of 218 million tons. Domestic coal sales slightly declined to 212 million tons, a 1.3% drop compared to the previous year. However, sales in the iron, steel, and metallurgy sector increased by 10 million tons. The average benchmark coal price for 2023 was 201.15 USD per ton.

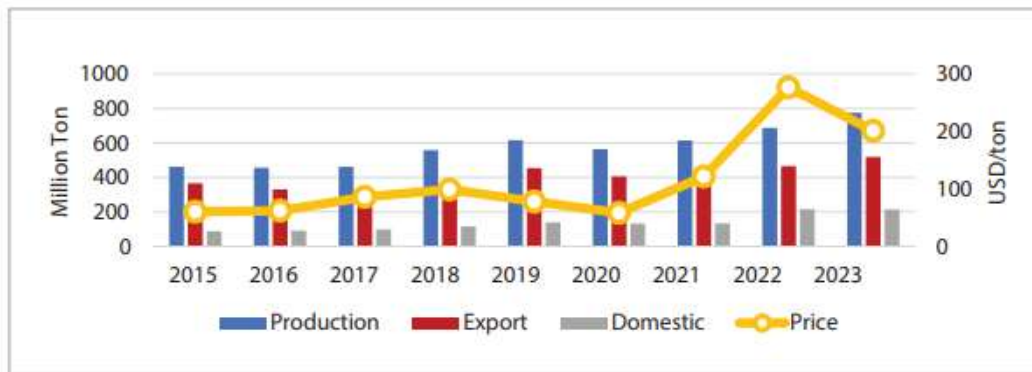


Figure 1. Indonesia's Coal 2015-2023

Source: Ministry of Energy and Mineral Resources of the Republic of Indonesia. (2023). Handbook of Energy and Economic Statistics of Indonesia 2023.

Even if coal still comprises the majority of the primary energy supply like the image above. The below supply of fossil fuels, including crude oil, its derivatives, and coal, saw a slight decrease compared to the previous year. In contrast, natural gas and renewable energy (NRE) products increased by 3% and 13.8%, respectively. Coal remains the largest component of the primary energy mix at 39.69%, followed by petroleum at 29.91%, natural gas at 17.11%, and NRE at 13.29%. The target is to increase the NRE share to 23% by 2025. By the target of NRE's share by 2025, there are high chance that fossil fuels including coal will decline in the coming year, which will affect the financial performance of the Coal Mining Company.

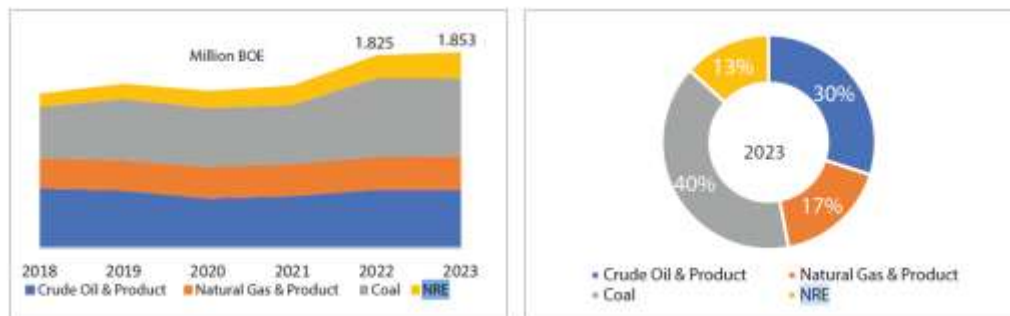


Figure 2. Indonesia's Crude Oil Product, Natural Gas & Product, Renewable Energy Consumption

Source: Ministry of Energy and Mineral Resources of the Republic of Indonesia. (2023). Handbook of Energy and Economic Statistics of Indonesia 2023.

The obligating social and environmental responsibilities paired with the expanding Omnibus Law 11/2020 and Minerba (Law 3/2020) legislation that granted more mining permits is a case in point. Additionally, the roadmap for eliminating coal-powered facilities prescribed by Presidential Regulation No. 112 of 2022 sets the target for Indonesia to achieve Net-Zero Emissions by 2060, which shows a changing direction in policy focus away from coal. These changes bring about a critical turning point in strategy for companies mining coal: they will need to change their business focus if they wish to remain in business and not solely depend on extraction of coal.

Despite remaining one of the avenues through which Indonesia receives foreign exchange, coal mining still exhibits the bleakest prospects in the region. Indonesia's coal

demand is lowering, and the coal prices are becoming increasingly volatile (Brodny & Tutak, 2022; Chu et al., 2021; Le & Dong, 2021; Mbedzi et al., 2018). Australian Thermal coal, known for being one of Asia's benchmarks, averaged a price of about 100 dollars per ton at the start of 2025, a level that had not been observed after 2021, post price surge. This volatility makes it so much tougher for miners to devise any long-term strategies to counter it.

This significantly impacts Indonesian coal producers such as PT Membara Bersama Abadi (MBA) is faced with the problems of dwindling coal reserves and permits, posing a significant challenge for the company to generate revenue. The compelling problem of decline is exacerbated by low consumer confidence and the economy's recession coupled with international competition. After mines reach depletion, permits expire and mining ceases. The properties gradually lose their worth, until sustainable solutions are discovered. Overall, 'traditional' mining operators are undergoing drastic transformation due to continuous market shrinkage, mounting regulations, and other limiting factors, leaving them nothing but searching for ways to sustain these adverse school outcomes.

The challenges also present an opportunity: some coal companies can still profit while pivoting towards new areas of interest, and with their resources and expertise, many can focus on sustainability. Some global mining companies are attempting to fulfil ESG (environmental, social, governance) requirements by investing in renewable energy, transforming existing infrastructure and mining assets, and selling them (Adebayo & Ackers, 2024; De Lucia et al., 2020; Pascoal et al., 2023; Sládková et al., 2022; Teneta-Skwiercz & Sikacz, 2023).

This research seeks to understand how MBA can sustain its strategy during this change. In particular, how can MBA sustain economic value utilizing existing assets after coal mining activities have ceased. The international coal market is under increasing threat from the global decarbonization agenda and changes in the energy mix. A significant number of nations have pledged net zero emission targets that will necessitate the adoption of cleaner energy technologies and severely impact coal-centered economies. One of the largest coal producers, Indonesia, is facing these challenges as environmental standards become stricter and the market for thermal coal highly fluctuates.

Company Profile

PT Membara Bersama Abadi (MBA) is a mining company in Indonesia that specializes in coal and is based in East Kalimantan. The company has a Coal Contract of Work (Perjanjian Karya Pengusahaan Pertambangan Batubara, PKP2B) that remains active until 2029, and after that, the mining license may no longer be valid. In MBA's years of operation, the company built up considerable internal infrastructure, particularly a private haul road which links MBA's Block I and Block II mine sites located in West Kutai, East Kalimantan to the port facilities located in Balikpapan. This road is essential for the shipment of MBA's coal with high calorific value from the mines to the ports. Nonetheless, MBA is supposed to surrender all infrastructures associated with the coal contract, including the hauling route, after the PKP2B expires.

Essentially, MBA stands to lose the road upon the expiration of the mining license should no new legal provisions be passed, which creates a strategic issue. The valuable asset, the haul road, which can be used for several purposes, cannot be lawfully or commercially operated by MBA beyond 2029 under the existing structural arrangements. In preparation for this issue, MBA is shifting its tactics towards infrastructure

monetization. The company is considering how to commercially exploit its hauling road by proactively allowing access to third parties for a fee.

The intention is to establish a formal toll system that allows capturing value from local companies such as other mining or plantation firms in the area by charging them for transporting their commodities on MBA's road. This scheme is novel for MBA as it fundamentally turns a mining logistical asset into a revenue-earning infrastructure enterprise. Interestingly, this approach is in tandem with an industry wide phenomenon where mining firms shift into infrastructure or renewable energy brought about by the aging or closure of their mines. MBA seeks to make money outside coal mining through the use of its existing road by capturing toll revenues even after its coal mining activities stop permanently.

Indonesia's coal mining sector is currently navigating a critical juncture as global energy trends shift decisively toward renewables and national regulations increasingly prioritize decarbonization. PT Membara Bersama Abadi (MBA), a coal mining company operating in East Kalimantan, finds itself under mounting pressure as the market for coal shrinks, prices fluctuate unpredictably, and its coal mining contract (PKP2B) is set to expire in 2029. The company's business model, which is entirely dependent on coal extraction, renders it highly vulnerable to these structural changes. Without strategic intervention, particularly in the form of business diversification or asset repurposing, the company risks financial instability and long-term irrelevance. This problem illustrates a broader dilemma faced by many extractive industries in Indonesia, where economic dependence on fossil fuels must be reconciled with the need for sustainable transition. Thus, the research addresses the pressing question: how can PT MBA pivot its business to secure future viability in a rapidly changing industrial and regulatory landscape?

The urgency of this research lies in both temporal and structural factors. Time is running out for PT MBA, with less than five years remaining on its mining permit, and little clarity on future concessions. The volatility in coal demand, coupled with increasing environmental scrutiny and declining investor interest in fossil-based assets, creates a scenario where inaction could lead to operational and financial collapse. Additionally, the lack of regulatory clarity on post-mining land and asset utilization further complicates long-term planning for mining companies. In such a high-stakes environment, strategic decision-making cannot be delayed.

Moreover, this case holds strategic significance beyond a single company. The idea of repurposing existing mining infrastructure—particularly hauling roads—into commercial logistics corridors is an innovative and underutilized approach in Indonesia. It provides a path for mining companies to extend asset utility and generate alternative revenue without large-scale environmental disruption. As many other mining firms will soon face similar transitions, this study becomes not only timely but also replicable. The success of such a pivot strategy could provide the foundation for a new model of industrial transformation that aligns with Indonesia's broader commitment to sustainable development and energy transition.

Burnell et al. (2023) emphasize that business model pivots are most effective when undertaken early, especially in industries susceptible to rapid disruption, such as mining. Their research suggests that transforming physical infrastructure into new service offerings such as converting mining roads into logistics assets—can help companies maintain value in the face of declining core markets. This supports the view that proactive strategy is essential in volatile economic environments.

Blondeel et al. (2020), in their work on the Powering Past Coal Alliance, argue that an orderly and economically just transition away from coal requires robust institutional support, including regulatory frameworks that enable asset repurposing. Their study highlights how formerly coal-dependent regions can successfully reinvent their economic roles through infrastructure transformation and reinvestment in logistics, transport, or renewables. This emphasizes the importance of supporting regulatory environments for successful transition strategies.

Meanwhile, Amit & Zott (2012) provide a foundational perspective on business model innovation by emphasizing the strategic importance of redefining value creation and capture processes. Their framework reinforces the potential of innovative pivots in traditional industries. However, despite their theoretical richness, there is a notable absence of application in the post-mining context in developing economies like Indonesia, particularly with respect to infrastructure monetization strategies. The current study seeks to build on these insights and fill the contextual void by focusing specifically on the mining industry's transition strategies in Indonesia.

Although various studies have discussed business model innovation and transition strategies, few have explored the intersection of asset monetization, infrastructure reuse, and financial viability in the mining sector. The literature tends to focus on either environmental rehabilitation or renewable energy transition, often overlooking the potential of physical infrastructure like hauling roads to serve alternative commercial purposes. In the Indonesian context, where regulatory, financial, and institutional limitations are complex, there is a striking absence of research that offers a structured evaluation of post-mining infrastructure as an economic asset. Additionally, no prior studies have holistically assessed the financial feasibility, risk management, and funding mechanisms required to operationalize such a transition. This study fills this significant gap by providing an integrated model for evaluating and implementing business pivots in the mining industry.

This research presents a novel approach by integrating financial, strategic, and regulatory dimensions into a single framework for business pivoting in the mining industry. Specifically, it evaluates the transformation of a mining hauling road into a toll-based logistics corridor using financial metrics such as NPV, IRR, and WACC, while also incorporating risk analysis and potential funding sources. Unlike prior studies that are either theoretical or sectorally detached, this research offers a grounded, site-specific roadmap for PT MBA to transition from extractive operations to logistics infrastructure management. The novelty lies not only in the subject—the monetization of mining infrastructure—but also in the methodology, which synthesizes financial modeling with practical implementation strategies. This interdisciplinary lens provides a replicable model for other mining firms facing similar post-coal scenarios.

The primary objective of this study is to evaluate the financial feasibility of repurposing PT MBA's coal hauling road into a commercial logistics corridor. Through in-depth financial analysis, the study assesses the project's potential for generating sustainable revenue. Additionally, it aims to identify viable funding sources, analyze associated risks, and formulate an actionable business pivot strategy. The overarching goal is to support PT MBA in ensuring economic continuity post-mining, while contributing to the broader discourse on industrial adaptation and infrastructure sustainability.

This research offers both theoretical and practical contributions. Academically, it expands the discourse on business model innovation within extractive industries, a topic

still underrepresented in the literature. It demonstrates how mining firms can create new value through infrastructure transformation in a post-extraction context. Practically, the study provides a blueprint for Indonesian mining companies to avoid asset stagnation and adapt to evolving energy and economic landscapes. For policymakers, it delivers empirical insights that can inform regulatory frameworks supporting asset repurposing and sustainable industrial transitions. Ultimately, the findings promote a balanced approach between economic resilience and environmental responsibility in the context of post-coal development.

RESEARCH METHODS

This chapter sets out the research methodology the author employed. The research questions and objectives form the basis upon which the systematic approach of the research methodology will be constructed.

Research Design

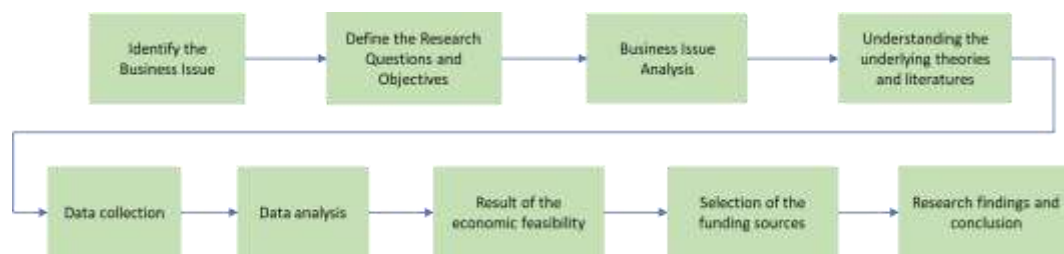


Figure 3. Research Design (Source: Author)

The data will be collected and processed quantitatively, most of the work involving extensive desktop study. The first step the author has proposed is to determine a business problem for PT MBA, then devise a set of research questions together with a set of research objectives to navigate through the research.

The business issue analysis follows. The author will employ some frameworks to define the external and internal drivers which are likely to influence and or cause the business issue at hand. To investigate external issues PESTLE analysis method will be applied. Porter's 5 Forces will analyze the competition within the industry from which the business opportunity emerges. SWOT analysis approach is used to assess the organizational capabilities, which are the strengths and the weaknesses, related to the business opportunity as well as the external risks and opportunities that may present themselves.

The author attempts to address the business problem, analyses it deeply, and examines several theories and literatures relevant to the identified business problem in the course of the further research analysis. Then, the author continues with data collection and data calculation, performing analyses to formulate conclusions along with recommendations.

Data Collection

The research will collect data from both primary and secondary sources. Primary data is obtained from PT MBA internal project documents which consist of project capital expenditures (CAPEX), operational expenditures (OPEX), and revenues. Secondary data is being collected from external sources and other companies in the industry, including

loan interest, country risk free rate, market risk premium, taxes, and several others. All of the primary and secondary data will be integrated for the data analysis stage.

Data Analysis

Upon gathering the requisite data and information, research study progresses with the analysis of data that is performed using a quantitative approach. The data will be computed and simulated for an in-depth understanding of the financial position of the business opportunity. The analysis of data will entail the following:

- a. Project cashflow analysis (Revenues, CAPEX, OPEX)
- b. Weighted Average Cost of Capital (WACC) analysis
- c. Payback Period (PBP), Net Present Value (NPV), Internal Rate of Return (IRR), and Profitability Index
- d. US Index
- e. Sensitivity analysis

The analysis of the data will aid in estimating the economic viability of the project as well as understanding what other economic determinants are significantly influential. Finally, this study also seeks to analyze the economics of various funding sources and to compare the alternatives evaluated.

RESULTS AND DISCUSSION

Analysis Source of Funds

In this section, the author is analyzing 4 potential sources of funds to finance the project and comparing the impact to the project feasibility indicators (NPV, IRR and PBP). They are:

- a. Maximizing Shareholder's Equity
- b. International Bank Loans
- c. Domestic Bank Loans
- d. Corporate Bond

Other potential source of funds, such as Venture Capital/Private Equity and Public Shares are being excluded from the analysis due to several reasons. Based on preliminary analysis, the Venture Capital or Private Equity usually expecting relatively high investment return, in the range of 15%-20% per year. Additionally, the presence of Venture Capital or Private Equity will dilute ownership of the existing shareholders in PT MBA. Meanwhile, offering Public Shares will require complex analysis and rigorous preparation in many aspects, such as corporate governance, financial, legal, compliance and market readiness. In the current situation, PT MBA is considered not ready to offer Public Shares.

1. Weighted Average Cost of Capital (WACC)

In order we can perform analysis for the source of funds, we need to determine cost of capital for the project first. The project cost of capital will be calculated by using Weighted Average Cost of Capital (WACC) formula as explained in the Chapter 2. WACC consist of 2 main components:

a. Cost of Equity

Cost of Equity is calculated by using the Capital Asset Pricing Model (CAPM). There are 3 essential components that need to be determined:

1) Beta Coefficient

Beta Coefficient value selected is 1.01, based on levered beta value for the Coal and Related Energy industry from Damodaran’s data (updated in 2024). This beta value is selected because it is the most representing profile of the industry that is being evaluated for this project.

2) Risk Free Rate

Risk Free Rate value selected is 6.78% (2024), according to on the Indonesian Government Bond Yield for 20 years issued by Indonesian Stock Exchange.

3) Market Risk Premium

Market Risk Premium value selected is 6.28%, based on the Equity Risk Premium from Damodaran’s data (updated in January 2024).

With all the 3 components above, the cost of equity can be determined as follow:

Table 1. Cost of Equity Calculation

Cost of Equity Calculation	
Risk Free Rate:	6,78%
Beta:	1,01
Market Risk Premium	6,28%
Cost of Equity	6,28%

b. Cost of Debt

Cost of Debt for this analysis is determined by using local development bank as basis for this calculation. This is assuming that the loans coming from local bank. Based on author’s analysis, the company condition has suffered tremendous accumulated financial loss. The before-tax cost of debt value for this project is selected at 18% considering the higher return demand by the lender. Additionally, the Corporate Income Tax of 22% can be ignored since all the expense from utilization of property and land is non-deductable.

Once cost of equity and cost of debt have been determined, and by considering the proportion between debt portion and equity portion in the capital structure, the WACC value can be calculated according to Table IV.15 below. However, the WACC value will vary for each source of fund options that being evaluated, depending on the debt-equity ratio and interest rate being selected for the analysis.

Table 2. WACC Calculation

WACC Calculation	
Debt Portion:	60%
Equity Portion:	40%
Cost of Debt	18,00%
WACC	13,31%

a. Option 1 - Maximizing Shareholder’s Debt

Based on result of the US Index analysis in section 1, it is advised for PT MBA to maximize the debt financing. Table 2 below is showing the result of project feasibility indicators for the maximizing debt financing option.

Table 3. Maximizing Shareholder's Debt

Maximize Debt	
Debt Portion	100%
Equity Portion	0%
WACC	10,80%
NPV (IDR)	33.646.964.475
IRR	73%
PBP	1,45

The project is considered acceptable due to the NPV is still greater than zero and IRR value is higher than the WACC value. The Payback Period of 1.45 years is also reasonable. In conclusion, the project remains **viable** with the full debt financing option. However, great caution is needed when a large amount of debt is used, as this could overextend the shareholder's cash flow, restricting the operational expenditure required to meet, or respond to, any unforeseen economic difficulties.

b. Option 2 - International Bank Loans

International bank loans are typically offered to large corporations as it furnishes them with larger sources of capital compared to domestic banks. International bank loans usually offered are at a relatively lower interest than domestic loans due to weaker developed nations experiencing more inflation than the developed countries. Furthermore, Ultras developed countries have a relative surplus of capital which is seeking investment opportunities because of slower economic growth and investment activity compared to emerging countries.

The international bank's interest rate that is being used in the analysis is at 6.65%. PT MBA can optimize the project feasibility by iterating the debt-equity ratio at the same interest rate, as shown in the Table 4. below.

Table 4. International Bank Loans

International Bank Loan			
Debt Portion:	60%	70%	80%
Equity Portion:	40%	30%	20%
WACC	13,31%	14,48%	15,66%
NPV (IDR)	32.622.636.596	30.328.179.129	28.204.486.264
IRR	57,13%	54,96%	52,82%
PBP	1,47	1,49	1,52

Increasing the debt portion will decrease the WACC value, due to the cost of debt is lower than the cost of equity. Consequently, the NPV is also increasing. Conversely, an increase in the debt portion results in an increase in the interest expense, which in turn reduces the Free Cash Flow. Furthermore, as the Free Cash Flow decreases, it will require longer time to recover the investment made.

In this financing option, the project remains **feasible**. However, higher debt-equity ratio may bring another risk for PT MBA, such as reducing the investment for growth, vulnerability to the economic downturns and increasing the risk of bankruptcy. PT MBA internal policy for the debt-equity ratio is 3:2. Other general reference from World Bank advise that debt-equity ratio for project financing is around 70:30.

c. Option 3 - Domestic Bank Loans

In the situation that loans from the international banks are difficult to get, PT MBA must be able to work with the domestic bank loans also. Typically, interest rate from the domestic bank will be higher than the international banks. This is due to higher domestic inflation rate, economic volatility, and higher policy rates defined by Bank Indonesia compare to the develop countries. For this analysis, the author has selected the domestic interest rate at 18%. Table 5. below indicates the project feasibility indicators result by simulating the deb-equity ratio.

Table 5. Domestic Bank Loans

Domestic Bank Loan			
Debt Portion:	60%	70%	80%
Equity Portion:	40%	30%	20%
WACC	13,31%	14,48%	15,66%
NPV (IDR)	29.229.398.473	26.546.901.304	24.071.606.839
IRR	51,28%	48,20%	45,19%
PBP	1,81	1,94	2,10

With higher interest rate demanded by the domestic bank, PT MBA must pay higher interest expense. Increasing debt portion will decrease the Net Income and Free Cash Flow. Additionally, decreasing in the Free Cash Flow will result in a decrease of the IRR. However, since the recovery of this project is high there is no different between taking international and local bank.

d. Option 4 – Corporate Bonds

Issuing corporate bond is another option that PT MBA can explore further to get funds for the project. Corporate bond value will vary depending several factors, such as credit rating and financial health of the bond issuer, bond tenor, and payment schedule. For this analysis, the author assumes PT MBA to issue 10-years maturity of corporate bond with 20% coupon rate to be paid annually. PT MBA also needs to repay the principal at the bond maturity date. Table 6. below shows how project feasibility indicators vary when simulating the debt-equity ratio.

Table 6. Corporate Bond

Corporate Bonds			
Debt Portion:	60%	70%	80%
Equity Portion:	40%	30%	20%
WACC	14,51%	15,88%	17,26%
NPV (IDR)	42.443.112.003	41.013.070.753	39.587.965.221
IRR	59,86%	57,98%	56,10%
PBP	1,89	2,06	2,28

Based on the analysis, it reveals although by issuing the bond that require the highest interest rate as compensation as part of the funding. The alternative still feasible since it still generate both positive NPV and IRR.

e. Summary Source of Funds

Based on the evaluation of the 4 options for source of funds, each of the option bring the advantages and disadvantages for the project as indicated in the Table 7.

Table 7. Summary of the Fund Alternatives

No.	Source of Funds Alternatives	Advantage	Disadvantage
1	Maximize Shareholder's Debt	- No internal cost of capital - Maintain project feasibility (attractive) due to the lowest WACC	- Higher cost of capital (high WACC) - It can strain shareholder's cashflow, limiting their liquidity to cover operational expenses or responding unexpected economic challenges
2	International Bank Loans	- Access to larger capital pools- Lower interest rate than domestic bank (low WACC) - Maintain project feasibility (attractive)	- Foreign exchange risk- Geopolitical and economic policy changes risk in the lender's country
3	Domestic Bank Loans	More familiar with domestic market and easier to access since the bank is in the same region of the operation	- Higher interest rate than international banks (high WACC) - Limited capital availability
4	Corporate Bond	Access to larger capital pools	- Higher cost of capital (high WACC) - Higher total debt services compared to bank loans (total coupon and principal payment) - Longest payback period

PT MBA must analyze further carefully for all the options according to their internal investment and risk policy.

Risk Analysis

A risk is defined as an uncertain event which might occur and impact objectives negatively. While completing a project in finance, risks can refer to the unpredicted elements that can affect the total cost, duration of a project, its category (scope), and the quality of and in the end, the profitability (Siahaan, 2020). Risk (in finance) has always been central in the management of any project and its efficient control is essential for the success of any project. Managed in project financing there are various risks related to complete elements the financial (economic) or marketing, operational, and even political issues.

Completion risks is the potential event which relates to 1) not completing the project on time due to construction delays, not meeting the project budget or cost overrun, 2) failure to comply with the technical specification which capably results major deficiency in the product, reduced efficiency or shortfall in the product quality, 3) mid project completion force Majeure that could alternately overdue the project significantly and

result to economically inefficient expenditure. These risks can be mitigated by engaging competent contractors and technical consultants, enforcing Liquidated Delay (LD) within the EPC Agreement, securing performance and warranty bonds from the contractors, and obtaining adequate insurance.

Operational and marketing risks pertain to uncertain occurrences which pertain to 1) inability to acquire the crucial feedstocks because of severely fluctuating prices of crude coal, 2) underutilization of resources or defeat the expectations, 3) counter competition come about unexpectedly because of new entrants within the market or new products being imported. Mitigation measures may include performing some key market studies and understanding the market thoroughly, securing long term contracts with primary feedstock suppliers, and obtaining off take agreements with primary customers.

Economic and financial risk in regard to a project is a structural form of financing; that is, 1) variation in foreign exchange rate, 2) variation in the rate of inflation, 3) change in price levels of crude energy and raw material (bulk) commodities) a global phenomenon, 4) shift in policies of foreign trade (tariff and fiscal policies) and so on. These risks can be mitigated by using hedging to lock in exchange rates, currency swaps, deal with mixed debt structure, negotiate forward sales, and option contracts.

Political risk are the uncertain issues connected with 1) unrest and 2) the adverse change of a government policy or a rule which is negative on the amount of revenue levied as tax, import tax, customs duties, negative on the object taxation, 3) permission, license, consents legally from the government and ad many others. These types of uncertainties can be mitigated to some extent through agreements with relevant stakeholders, political insurance, and active stakeholder engagement to provide support and navigate the challenges.

Table 8. Risk Analysis Summary

No.	Risk Category	Risk Event	Risk Cause	Mitigation
1	Completion Risk	Risk of failing to deliver the project on time, within budget, or according to requirements	Setback in construction, Increased expenditure, breakdown of works, unforeseen circumstances.	Cost-plus Any item priced contracts and cost reimbursement contracts; contingency contracts; level of detail in contractual planning, preemptive damages, reparative contract clauses, performance security guarantees, custody guarantees
2	Market and Operating Risk	Risk of not achieving projected revenues and/or having operational difficulties.	Shifts in demand, constraint of resources, and entrance of new firms into the market	Market research, strategic supply agreements, and long-term contract

No.	Risk Category	Risk Event	Risk Cause	Mitigation
3	Financial Risk	Risk associated with a provided capital structure, funds ready and their cost	Interest rate fluctuations, currency exchange rates, credit risk	Hedging instruments, currency swap, mixed financing structures, forward sales and option contracts
4	Political Risk	Risk of unrest, adverse change of government policy, permission and other legal issue from government	Regulatory shifts, nationalization, geopolitical unrest	Political risk underwriting, stakeholder capitalism, stabilization agreements
5	Environmental and Social Risk	Risk to reputation, incurring legal costs, or the project being put on hold owing to non-adherence to Environmental and Social policies and strategies	Emissions alongside land disturbance (Environmental) and local opposition, labor influx (Social)	Detailed Environmental Impact Assessment (EIA), designs in alignment with ESG criteria, community consultation's, and complaint handling procedures
6	Macroeconomic Risk	Risk posed by volatile macro economic components accruing from their respective systems which may affect the viability and financing and self-sustainability.	Inflation having an impact on OPEX/CAPEX, coal demand reduction (Economic) that drives the demand for the hauling road usage	Reasonably low estimates of inflation, adaptable pricing strategies, different levels of clients, and reserve margins within the released cash flow forecasts

Business Solution

From the initial chapter, it was noted that PT MBA have not completed a complete project analysis. Additionally, PT MBA have not identified the best winning strategy to secure the required funds for executing the project. In this chapter which is the final part, the author identifies business problems and concerns and proposes solutions based on the information and analysis conducted throughout this chapter.

Based on the assessment of the US Index, the findings indicate a value upper than one which suggests that PT MBA should seek to concentrate debt financing. On the other hand, PT MBA should calculate the optimal mix of capital structure that includes funds from debt and equity financing. These forms of financing have their respective merits and demerits which requires PT MBA to analyze them thoroughly.

With respect to this project, PT MBA bear fixed interest regarding the financial instrument used. Also, as debt increases in total funding, magnitude of WACC will also increase. Yet, analysis done in section 4.1.2.2 indicates that project remains feasible when PT MBA is maximizing the shareholder debt. Although, this may put a strain on the

shareholder's cashflow since it reduces the flexibility to deal with unforeseen economic difficulties and other operational costs.

When it comes to debt financing, international commercial banks offer lower interest rates when compared to domestic institutions. Since their loan interest is lower than average due to increasing competition among international banks, project feasibility indicators are more attractive as the WACC is lower. Compared to domestic banks, however PT MBA will likely have less possibilities to access capital sources globally, decreasing the reliance on the country's available resources. There is also an increase in the lending options available to PT MBA both from ECA, multilateral banks, private investment banks, as well as international syndicated banks. Each foreign bank will have a different perception on the project risk, and thus, PT MBA must negotiate the best interest rates with all of them. In return, the international banks may impose less favorable terms and conditions to PT MBA that reduces the general appeal of the agreement. It is suggested that PT MBA scrutinizes all documents thoroughly prior to the signing of the contract.

Based on the analysis in this chapter, the author would recommend to PT MBA to choose **domestic bank loan (through local bank)**, with **3:2** debt-equity ratio to fund the project, by considering the following reasons:

- a. The complete 100 percent (100%) utilization of debt will increase the shareholder's value. However, it will put constraint in the company cashflow and constrict their liquidity. Hence, the usage of debt in the project financing has to be capped at a certain level so that the residual shareholder's equity will be reserved for other operational activities and to mitigate economic headwinds.
- b. An international bank offers a loan with a relatively low market interest rate which lowers the organizations WACC. However, the company has suffered tremendous loss making it difficult to access the source of funds. Furthermore, the project remains appealing to undertake while being very feasible (NPV remains high; $IRR > WACC$). The paid back is also still in a reasonable time frame.
- c. Debt-equity ratio at 3:2 selected as it is aligned with internal company policy and common in business practices.

Detail of the Project Cashflow and Free Cash Flow (FCF) over the years for this option can be seen in the APPENDIX C and APPENDIX D.

In conclusion, this recommendation provided is an attempt to guarantee that the project stays feasible while delicately 'tiptoeing' around the advantages and disadvantages of each financing option's impact on the project. Agreements through off-take need to be arranged with potential customers and supply agreements arranged with potential suppliers hence PT MBA needs to execute these arrangements. Ensuring proper cash flow management aligned to meeting the debt service payment obligations is necessary. It is equally important to implement the risk mitigation plan already identified and proactively monitor for scope of emerging risks in the future.

Implementation Plan and Justification

Taking into account the analysis conducted earlier and the business problems identified in the previous sub-chapters, the author formulates an implementation plan as a suggestion for PT MBA. The primary milestones to be achieved within the suggested schedule are summarized in Table IV.22.

Table 9. Implementation Plan

No	Activities	Month																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Update Bank Feasibility Study	■	■	■	■	■													
2	Develop Financial Model				■	■	■	■	■										
3	Non-Deal Roadshow					■	■	■											
4	Financial Investment Presentation and Approval								■	■	■	■							
5	Fund Raising Preparation										■	■							
6	Fund Raising Process												■	■	■	■	■	■	■
7	Drawdown																		■

Below is the explanation of the implementation steps that must be conducted by PT MBA:

1. Update Bank Feasibility Study

PT MBA must verify that the data utilized in the Bank Feasibility Study is relevant and up-to-date. All the forecast estimates must be consistent with the current directions of the strategies formulated for the project's advancement. This includes – but is not limited to – updating the market situation, risk analysis, and financing strategy.

2. Non-deal Roadshow

Concurrently, PT MBA can conduct presentation roadshow to market the project to some prospective lenders. This step is crucial in understanding the attitude of the market as well as measuring the interest the project would generate from the financiers. The feedback obtained from roadshows will help develop the model further.

3. Fund Raising Preparation

PT MBA should plan the fundraising procedure so that as soon as they receive the Financial Investment Decision (FID) from the shareholders, they will be able to initiate the process immediately.

4. Fund Raising Process

After the FID approval is issued, PT MBA must conduct a marketing presentation to the identified potential lenders explaining in detail the project's profitability and the required funds PT MBA expects to receive from them along with the benefits the lenders would gain. It will be confirmed with mutual-agreement, previously called consensus, on how the loan proposal will be followed by a number of activities including but not limited to the loan application submission, due diligence by the **lenders, and finally the loan agreement.**

5. Fund Drawdown

Post the negotiations, PT MBA needs to make sure the funds are received as planned to facilitate the entire process of the project.

Moreover, PT MBA reserves the right to employ the services of a Financial Advisor (FA) to help with all the activities. The Financial Advisor will utilize the resources available internally in PT MBA. Every one of the activities mentioned can either be done on the PT MBA premises or any other place as per the agreed contract with the concerned stakeholders.

CONCLUSION

The business outlook for PT MBA appears to be in decline, with a sunset trajectory evident due to a continued decrease in commodity prices. In 2023, the company experienced significant financial distress, reflected in a 88% revenue decline and a 29.2% reduction in total assets, indicating the unsustainability of relying solely on coal mining

amidst tightening environmental regulations and the impending expiration of its PKP2B license in 2029. To sustain its business, MBA can explore diversification through asset utilization, particularly by converting its internal hauling road into a commercial toll access corridor. This strategic pivot, leveraging existing infrastructure, provides a low-risk, CAPEX-light opportunity estimated at IDR 9.29 billion, immediately cash-generative given its operational status and geo-strategic location. By privatizing this infrastructure, MBA can transform a stranded mining asset into a profitable logistics corridor, potentially achieving an Internal Rate of Return (IRR) above 10% and a rapid payback period, as outlined in Chapter IV.1.1.4 and Table IV.9. Financial projections indicate that this business model transition can yield a Net Present Value (NPV) ranging from IDR 37.1 to 46.2 billion, with IRRs above 10% and a payback period of 1 to 2 years, even under conservative demand assumptions. This shift allows MBA to reduce its dependency on volatile global coal markets, aligning its strategy with Indonesia's sustainability goals and ensuring stable, long-term cash flow through predictable logistics demand. Overall, this transition provides a financially viable pathway for MBA to extend its operational lifespan beyond coal extraction, transforming into a diversified, infrastructure-focused enterprise.

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