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Valuation of PT TBS Energi Utama Tbk Amid its Green Energy Transition

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ABSTRACT

Climate concerns are pushing global investors and governments to shift capital toward companies that demonstrate measurable ESG commitments. PT TBS Energi Utama Tbk (TOBA), formerly reliant on coal-fired power and mining, has embraced this transition through its TBS2030 roadmap. Following the divestment of its coal-fired power plants in 2024, TOBA has pivoted toward electric vehicles, renewable energy, and waste management. This transformation prompts an important valuation question: how does the transition toward Net Zero Emissions (NZE) impact TOBA's intrinsic value? This research assesses TOBA's value using the Discounted Cash Flow (DCF) method with a 10-year forecast under three strategic scenarios, excluding coal-fired power revenue post-2024. Segment-level modeling includes residual coal mining, Electrum (EV venture), PLTS assets, palm oil, and the newly acquired Sembcorp Environmental Management waste unit. Scenario analysis results show strong upside potential. Under the base scenario (moderate renewable growth), the implied share price is Rp1,857. Under the best-case scenario (accelerated execution in green businesses), the implied valuation reaches Rp2,854. Even in the worst-case scenario (delays in renewable scale-up), the share price is valued at Rp1,122. Compared to the current market price of Rp398 as of May 2025, the margin of safety is significant: 367% (base), 617% (best), and 182% (worst). These findings suggest TOBA is materially undervalued by the market. The research concludes that TOBA's transition strategy, if executed effectively, not only aligns with Indonesia's NZE goals but also offers substantial value creation for investors. The company is recommended to continue optimizing capital structure, expanding ESG initiatives, and leveraging green financing to unlock further value. This case demonstrates how ESG integration and business diversification can translate into financial outperformance in emerging markets.

Keywords: ESG, Net Zero Emission, stock valuation, business transformation, energy transition, DCF model, margin of safety

INTRODUCTION

Research over the past decade has confirmed that greenhouse gas emissions (CO_2, CH_4, N_2O) continue to rise—the energy sector remains dominant, accounting for approximately 73% (±3%) of total global GHG emissions, with annual emissions reaching nearly 59 $GtCO_2$-eq between 2010–2019 (IPCC, 2022; IEA, 2023; Jones et al., 2023; Ritchie et al., 2024; Smith et al., 2022). CO_2 emissions from power generation, transportation, and industry are the primary contributors, while CH_4 originates from the energy and agriculture sectors, and N_2O from fertilizer use—though in smaller quantities, but with a much higher global warming potential (EPA, 2025; UNEP, 2024; Tian et al., 2021; WHO, 2023; Zhang & Li, 2022). Recent reports indicate that fossil fuels still account for over 75% of total energy emissions, despite the continued growth in renewable energy use (IEA, 2025; IEA, 2023; IPCC, 2022). CH_4 emissions from "ultra-emitters" in the oil and gas sector add an additional 8–12% to previous estimates (Tian et al., 2021).

Meanwhile, the impact on health and the economy is becoming increasingly apparent: the WHO estimates that there will be 250,000 additional deaths each year between 2030 and 2050 due to heat waves, malnutrition, and disease (WHO, 2023; Lancet Countdown, 2023). The WEF (2024) even predicts 14.5 million extra deaths and global economic losses of US$12.5 trillion by 2050 if serious mitigation measures are not taken (WEF, 2024). In the United States, there were 152 major climate disasters with losses reaching US$1.1 trillion between 2013–2022 (NOAA, 2023). The year 2022 alone contributed US$313 billion in global losses due to climate disasters (Guardian, 2025a; WMO, 2023). Additionally, agricultural yields are projected to decrease by up to 11%, leading to a global reduction in calorie intake of 360 calories per person per day (Vox, 2025; Guardian, 2025b). The IPCC emphasizes the importance of a swift transition to clean energy to meet the Paris Agreement targets (IPCC, 2022; Time, 2025).

The UN's Sustainable Development Goals (SDGs), particularly SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action), are integral to fostering a low-carbon economy. Recent COP (Conference of Parties) meetings have intensified these efforts. For instance, COP28 focused on scaling up renewable energy capacity by threefold by 2030, while COP29 advanced climate finance and operationalized carbon trading markets, addressing both mitigation and adaptation needs.

As the world's largest coal exporter and a major coal producer (775 million tons in 2023, with 518 million tons exported), Indonesia's energy sector is heavily dependent on coal, which constituted 39.69% of its primary energy mix in 2023 (Kementrian ESDM, 2024). Renewable energy contributed only 13.29%, significantly below the national target of 23% by 2025 (Kementrian ESDM, 2024). Indonesia's electricity production paints a similar picture, with renewable energy accounting for only 18.60% of total output.

To address these challenges, the Indonesian government has committed to achieving net-zero emissions by 2060. Key regulatory measures include the introduction of carbon pricing mechanisms and subsidies for renewable energy development. However, the slow progress in renewable infrastructure and policy implementation remains a barrier to achieving these goals.

The global shift towards renewable energy has intensified regulatory and market pressures on coal-dependent companies. Conventional energy companies are under increasing pressure to transition away from their legacy conventional coal and other carbon intensive assets, favoring investments in renewable and sustainable energy sources. In response to these trends, TOBA has restructured its business strategy to align with global and national sustainability initiatives. The company launched the "TBS 2030" program, aiming to achieve carbon neutrality by 2030. This roadmap includes measurable targets for transitioning away from coal and investing in renewable energy, electric vehicles, and waste management.

TOBA's transition to green energy is supported by a strategic pivot away from coal. As part of this effort, the company has announced the divestment of two coal-fired power plants with a combined capacity of 200 MW, valued at USD 144.8 million. TOBA estimates that the transaction is expected to reduce the company's annual carbon emissions by over 80%, or approximately 1.3 million tonnes of CO_2 equivalent, while generating a cash profit over the original investment of USD 87.4 million. The proceeds from this divestment will be directed toward sustainable business investments, including renewable energy, electric vehicles, and waste management, supporting TBS's strategic shift away from coal.

While TOBA's sustainability commitments are ambitious, the company faces challenges such as high upfront capital costs, scalability in renewables, and managing the underdeveloped state of Indonesia's renewable energy sector. However, its investments in renewable energy and waste management, coupled with its electric vehicle initiatives, reflect a forward-thinking approach to building a diversified and resilient green business model.

PT TBS Energi Utama Tbk (TOBA) is undergoing a high-stakes transformation in line with its TBS2030 roadmap and Indonesia's national commitment to achieving net-zero emissions by 2060. Historically reliant on coal mining and coal-fired power generation, which collectively contributed more than 94% of its 2024 revenue, TOBA shifts its business model away from coal-based power generation toward a more sustainable energy portfolio. The divestment of its 200 MW coal-fired power plants for USD 144.8 million represents a turning point for the company. This move is central to the "TBS 2030" initiative, which aims for carbon neutrality by 2030, and aligns with Indonesia's broader goal of achieving net-zero emissions by 2060. According to TOBA's press release (TBS Energi Utama Tbk, 2024), the divestment is projected to reduce annual carbon emissions by over 80%, approximately 1.3 million tonnes of CO_2, and to cut consolidated debt by more than 70%, thereby enhancing the company's financial flexibility for future sustainable investments.

This strategic shift is significant not only from an environmental perspective but also in terms of financial performance. Global investors are increasingly favoring companies with robust sustainability credentials, as integrating the Sustainable Development Goals (SDGs) into core operations often leads to higher market valuations and improved financial performance. For instance, sustainable investments reached USD 35.3 trillion in 2020, a 15% increase from 2018, underscoring the strong market demand for environmentally responsible business practices (Global Sustainable Investment Alliance, 2020).

By repositioning itself toward renewable energy, TOBA aims to attract sustainability oriented investors, which could improve its stock value over time. However, this divestment comes at a critical time in Indonesia's evolving energy landscape. Coal currently accounts for 39.69% of the nation's primary energy mix in 2023, while renewable energy contributes only 13.29%, significantly below the government's target of 23% by 2025 (IESR, 2024). Historically, coal has provided stable and high-margin revenue streams for companies like TOBA, with coal production and exports reaching 775 million tons and 518 million tons respectively in 2023. The srategic shift, while environmentally necessary, poses a potential risk to these stable cash flows and raises important questions about the company's future revenue base and growth prospects in an underdeveloped renewable energy market.

Moreover, the transition from a coal-dependent revenue to renewables and sustainable investments involves significant challenges. Indonesia's renewable energy infrastructure and regulatory frameworks are still in the early stages of development, which may hinder the growth of new sustainable revenue streams. TOBA will need to strategically reinvest the divestment proceeds in renewable projects, electric vehicle ecosystems, and waste management to gradually replace the lost coal income. This process, however, requires not only substantial capital investment but also effective execution to achieve the desired scale and efficiency improvements.

The central business issue revolves around how this volatile transition period will affect TOBA's value. As the company transitions away from the historically stable, high-margin coal business, its intrinsic value will increasingly depend on the market's ability to recognize and reward the long-term benefits of its new, sustainable portfolio. While the immediate impact may be a reduction in predictable cash flows, the long-term potential for enhanced growth and reduced regulatory risks could lead to a higher valuation if the renewable investments perform as expected. Although actions have been initiated, such as the sale of two coal-fired power plants and new developments like the Electrum EV venture, PLTMH Sumber Jaya, PLTS Tembesi, and Sembcorp's waste management business have been acquired, the financial significance of these green ventures remains relatively small and speculative.

The immediate challenge lies in whether TOBA's new green businesses can grow quickly and reliably enough to replace the cash flows generated by coal. Waste management and

renewables are long-cycle investments with longer payback periods, while EV adoption in Indonesia still faces infrastructural and behavioral barriers. In equity markets, green transformation can either create a "green premium" or lead to a "transition discount," depending on investor confidence in execution. If TOBA fails to show credible financial performance and ESG alignment, it may face a de-rating despite a greener business profile.

Thus, the core business issue is not simply a matter of changing sectors it is about how the transition affects TOBA's ability to sustain, grow, and communicate enterprise value in a volatile and uncertain energy landscape.

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RESEARCH METHOD

This chapter outlines the research methodology employed to assess the valuation implications of PT TBS Energi Utama Tbk's (TOBA) strategic shift from coal-fired power generation to green energy investments. Adopting a valuation oriented mixed method design, the study integrates qualitative frameworks and quantitative modeling to capture both the financial and macroeconomic dimensions of TOBA's transition.

Research Design

This research employs a valuation-oriented quantitative approach to assess the financial impact of PT TBS Energi Utama Tbk's (TOBA) transition from coal-based operations to renewable and sustainable business segments, utilizing segment-level Free Cash Flow to the Firm (FCFF) modeling, Weighted Average Cost of Capital (WACC) calculations, and long-term growth projections for its core business lines (coal, power production, waste management, and electric vehicles). The analysis incorporates scenario testing and capital structure optimization to evaluate strategic financing decisions' effects on enterprise value, while qualitative factors like corporate strategy, regulatory developments, and ESG disclosures inform key valuation inputs (risk premiums, cost of capital assumptions, and earnings quality projections). Following a structured methodology, the study begins with business issue identification (assessing valuation impacts of TOBA's green transition), progresses through business issue exploration (examining macroeconomic trends and energy policies), literature review (analyzing academic and industry research), external/internal analysis (evaluating market forces and company data), stock valuation (applying financial valuation methods), and concludes with actionable recommendations, providing comprehensive insights into TOBA's valuation during its shift toward a low-carbon business model.

Data Collection Method

This study utilizes a comprehensive secondary data approach, combining TOBA's financial reports (including public financial statements, investor presentations, and annual reports for historical revenue, earnings, and capital structure data), market data (stock prices and valuation multiples from financial databases), and macroeconomic indicators (energy sector trends and commodity prices) to analyze the company's financial performance and strategic transition, while supplementing this analysis with industry insights from authoritative sources like IEA, IESR, and IRENA reports on Indonesia's energy transition, along with TOBA-specific corporate action data obtained from company disclosures and news reports to ensure a robust and multi-dimensional evaluation.

Data Analysis Method

The data analysis follows a structured approach beginning with comprehensive external analysis using PESTEL framework to examine political, economic, social, technological, environmental and legal factors impacting TOBA, along with assessment of macroeconomic

trends like energy demand shifts and renewable policies, complemented by internal analysis through SWOT evaluation of TOBA's financial health and strategic position, including detailed review of historical financial statements to gauge divestment effects on cash flow, revenue and profitability; this foundation supports the stock valuation phase employing both Discounted Cash Flow (DCF) method - projecting segment-level Free Cash Flow to Firm (FCFF) discounted by Weighted Average Cost of Capital (WACC) to account for time value and post-divestment risks - and Relative Valuation comparing TOBA's key financial ratios (P/E, P/B, EV/EBITDA) with industry peers to establish market-aligned benchmarks.

RESULTS AND DICSUSSION

In this chapter, first will be presented the valuation of PT TBS Energi Utama Tbk (TOBA). Then, will be presented the optimization strategies for PT TBS Energi Utama Tbk (TOBA). The valuation findings are categorized into intrinsic and relative valuation, with additional considerations for macroeconomic and policy factors impacting the company's business prospects.

Intrinsic Valuation

Intrinsic valuation provides a fundamental basis for estimating the absolute fair value of PT TBS Energi Utama Tbk (TOBA) by focusing on the company’s internal financial performance and future cash-generating potential. Given TOBA’s ongoing transformation under its TBS2030 initiative and recent acquisitions aimed at supporting its net-zero emissions roadmap, the intrinsic approach is particularly suitable for capturing the long-term value of its diversified and evolving business model.

Baseline Revenue Stream

To understand the financial structure and business diversification of TOBA, a breakdown of revenue contributions by business segment is essential. As of the latest reported period, the company's revenue streams span both conventional and emerging sectors:

Table 1. Btaseline Revenue Stream

Sector	Revenue (USD)	% of Total Revenue
Coal (Mining+Trading)	360.116.711	80,81%
Coal-Fired Power Plants (PLTU)	59.863.229	13,43%
Waste Management	13.122.139	2,94%
Electric Vehicle	6.468.511	1,45%
Palm Oil	6.004.155	1,35%
Other	73.570	0,02%
TOTAL	**445.648.315**	**1**

TOBA's revenue breakdown as of 2024 reflects its historical reliance on fossil fuels. The coal mining and trading segment alone contributed USD 360.1 million, or 80.81% of total revenue. Coal-fired power generation added USD 59.8 million, accounting for 13.43%. Combined, fossil-based segments made up over 94% of revenue, underscoring the financial implications of the company’s strategic transformation.

In contrast, emerging segments remain small but are positioned for future growth. The waste management segment generated USD 13.1 million (2.94%), electric vehicles brought in USD 6.5 million (1.45%), and palm oil added USD 6.0 million (1.35%). This distribution indicates TOBA’s early-stage diversification and the need for significant scaling to offset the phased withdrawal from coal.

Scenario Analysis

To evaluate the impact of TOBA's strategic shift from coal to renewable energy under the TBS2030 initiative, a scenario analysis was developed. The scenarios incorporate different assumptions about the rate at which TOBA will phase out its coal operations and scale up its non-coal (renewable energy and electric mobility) businesses. Given the company's commitment to cease coal operations by 2030, coal revenue is expected to decline significantly, while non-coal revenue is projected to grow at varying rates depending on the success of project execution and market expansion.

Table 2. Scenarios for TOBA Intrinsic tValuation

Scenario	Coal Revenue Assumption	Non-Coal Revenue Assumption
Base Case	Coal phase out by 2030	Reflects strategic transition pace
Best Case	Accelerated coal phase out (2028)	Green business ramps up faster
Worst Case	Delayed coal pahse out (2032)	Slow scaling renewables

These scenarios are designed to reflect both TOBA's public commitment to sustainability and the inherent uncertainties in executing a large-scale energy transition. The base case assumes a steady and feasible transition aligned with the company's official roadmap. The best-case scenario reflects accelerated coal exit and early success in non-coal segments, The worst-case scenario assumes slower adoption of renewables and operational or financing challenges, leading to a more prolonged reliance on coal.

Capital Value

The market value of the debt is calculated using the book value of TOBA's debt obtained from the 2024 audited financial statement. The market value of equity is calculated using market capitalization as of December 2024.

Table 3. Capital Value Calculation

Component	Value (USD)	Remarks
Debt		
Short-Term Debt		
Bank Loans	22.312.450	Q4 2024 financial statements
Current maturity:		
Bank Loans	39.446.691	Q4 2024 financial statements
Lease	1.265.018	Q4 2024 financial statements
Total Short-Term Debt	63.024.159	
Long-Term Debt		
Bank Loans	244.913.888	Q4 2024 financial statements
Bonds	32.208.297	Q4 2024 financial statements
Lease	1.799.457	Q4 2024 financial statements
Total Long-Term Debt	278.921.642	
Total Debt	341.945.801	
Equity		
Shares Outstanding	8.167.826.970	Q4 2024 financial statements
Share Price (IDR)	Rp452	Market price as 30 Dec 2024
Exchange Rate	Rp16.289	Exchange rate as 30 Dec 2024
Total Equity	226.654.252	

Total Capital Value	568.600.053

Cost of Debt

To implement the TBS2030 program, there are several funding options for TOBA. On 13 December 2024, TOBA entered into:

(1) ADB Facility Agreement with Asian Development Bank of the credit facility amounting to US$10,000,000.
(2) Parallel Facility Agreement with PT Bank DBS Indonesia of the credit facility amounting to US$5,000,000.

(collectively referred to as the "ADB Facilitiy").

The purpose of this funding is to support the use of electric motorcycles in Indonesia. It is intended to support the procurement of Electrum electric motorcycles and the expansion of Battery Swap Stations (BSS) in Indonesia. TOBA did not explicitly state the specific interest rate applicable to the ADB Faciliy, so the interest rate of the loan is estimated using the formula below:

$$\text{Interest Rate} = \text{Base Rate} + \text{Spread} \quad \text{(IV.1)}$$

Where:
Base Rate = Secured Overnight Financing Rate

According to the Federal Reserve Bank of New York, SOFR value as of 13 December 2024 is 4,6%, and the spread is 0,95% based on TOBA's interest coverage ratio converted into rating and credit spread refering to Damodaran Synthetic Rating. Summing up the inputs required, the interest rate of the ADB and DBS loans is 5,55%. And the effective After-tax Cost of Debt is 4,25%. As of the 31 Desember 2024 consolidated financial statements, no amount have been disbursed under the ADB Facility by the TOBA. So it is assumed that TOBA will continue to utilize the existing capital structure (conventional debt) without disbursing the ADB Facility as calculated below:

$$Rd = (Rf + CS) \times (1 - T) \quad \text{(IV.2)}$$

Where:
Rf = Risk Free Rate
Cs = Credit Spread
T = Corporate Tax

Indonesia risk free rate is 6,98%, based on March 2025 Market Risk Premia, as shown in the figure below:

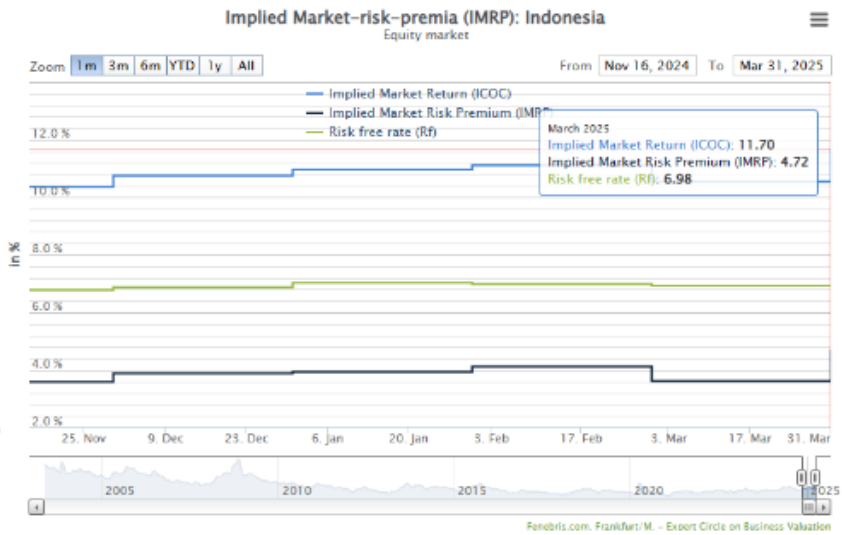

Figure 1. Indonesia Market Risk Premia

Credit spread is 0,85%, based on TOBA's interest coverage ratio converted into rating and credit spread refering to Damodaran Synthetic Rating as shown Below:

Table 4. Damodaran Synthetic Rating 2025

>	≤	Rating is	Spread is
-100000	0,20	D2/D	19,00%
0,20	0,65	C2/C	15,50%
0,65	0,80	Ca2/CC	10,10%
0,80	1,25	Caa/CCC	7,28%
1,25	1,50	B3/B-	4,42%
1,50	1,75	B2/B	3,00%
1,75	2,00	B1/B+	2,61%
2,00	2,25	Ba2/BB	1,83%
2,25	2,50	Ba1/BB+	1,55%
2,50	3,00	Baa2/BBB	1,20%
3,00	4,25	A3/A-	0,95%
4,25	5,50	A2/A	0,85%
5,50	6,50	A1/A+	0,77%
6,50	8,50	Aa2/AA	0,60%
8,50	100000	Aaa/AAA	0,45%

Source: Damodaran 2025

Interest coverage ratio calculation shown as below:

Table 5. Interest Coverage Ratio Calculation

Metric (in USD Millions)	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**
EBITDA	68,53	109,18	87,46	76,25	121,61	143,46	70,92	104,78
Interest Expense	(5,53)	(9,67)	(22,14)	(24,01)	(26,15)	(28,45)	(38,02)	(35,88)
Interest Coverage Ratio				**4,12**				

Rating	**A-**
Spread	**0,95%**

Corporate tax is 22%, based on Undang-Undang Republik Indonesia Nomor 7 Tahun 2021 tentang Harmonisasi Peraturan Perpajakan. Summing up the inputs required, the cost of conventional debt calculation is as follows:

Table 6. Conventional Cost of Debt Calculation

Component	Value	Notes
Rf (Risk free Rate)	6,98%	Market Risk Premia
CS (Credit Spread)	0,95%	Damodaran
Corporate Tax (T)	22%	Indonesia tax
Rd (Cost of Debt before Tax)	7,93%	
Rd (Cost of Debt after Tax)	6,19%	

Cost of Equity

The Capital Asset Pricing Model (CAPM) serves as a fundamental tool for estimating the cost of equity for TOBA, offering insights into the expected return based on systematic risk as of March 2025. By integrating a risk-free rate, market risk premium, and the company's beta. The CAPM is calculated using the formula below:

$$Re = Rf + \beta \times (Rm - Rf) \quad \text{(IV.3)}$$

Where:
Re = Expected return on equity (cost of equity).
Rf = Risk-free rate.
β (Beta) = Measure of the stock's volatility relative to the market.
Rm – Rf = Market risk premium (expected market return minus the risk-free rate).
Indonesia risk free rate and market rate return is 6,98% and 11,70% based on March 2025 Market Risk Premia. The adjusted relevered beta for TOBA ranges from 1.16 (low) to 1.51 (high) based on ValueInvesting.io (2025), so author uses the interpolated value of 1,34. Summing up the inputs required, the cost of equity calculation is as follows:

Table 7. Cost of Equity Calculation

Component	Value	Notes
Rf (Risk free Rate)	6,98%	Market Risk Premia
Market Rate Return	11,70%	Market Risk Premia
Beta (β\betaβ)	1,34	ValueInvesting.io
Cost of Equity	13,30%	

Weighted Average Cost of Capital

The Weighted Average Cost of Capital (WACC) represents a firm's average cost of capital from all sources, including equity and debt, weighted by their respective proportions in the firm's capital structure. The WACC is calculated using the formula below:

$$WACC = \left(\frac{E}{D+E}\right) \times Re + \left(\frac{D}{D+E}\right) \times Rd \quad \text{(IV.4)}$$

Where:
E = Equity
D = Debt
Re = Cost of equity

Rd = Cost of debt
Summing the Cost of Debt and Cost of Equity, plus the ADB Facility green debt, TOBA's WACC calculation is as follows:

Table 8. WACC Calculation

	Value	
Component	**Without Green Debt**	**With Green Debt**
Weight of Equity (%)	39,862%	38,84%
Weight of Debt (%)	60,138%	58,59%
Weight of Green Debt (%)		2,57%
Total Weight	100%	100%
Cost of Equity (%)	13,305%	13,30%
Cost of Debt (%)	6,19%	6,19%
Cost of Green Debt (%)	5,55%	5,55%
WACC	9,02%	8,93%

Porter's Five Forces
Threat of New Entrants – Moderate
While high upfront capex, licensing, and PPA requirements in renewables and waste provide entry barriers, increasing policy incentives are attracting new entrants. Falling levelized costs of energy (LCOE) and clearer PPAs are also encouraging new entrants. However, TOBA's access to concessional financing (ADB and DBS), established partnerships (Electrum with GoTo), and early infrastructure advantage mitigate this threat (IESR, 2025b).
Bargaining Power of Suppliers – Low to Moderate
In the waste segment, TOBA's acquisition of Sembcorp Environmental internalizes key capabilities, reducing dependency on third-party suppliers (TOBA, 2024). However, in EV and renewable projects, reliance on imported components like lithium batteries presents vulnerabilities.
Bargaining Power of Buyers – Moderate to High
As a state monopoly, PLN wields significant buyer power in IPP projects. However, the long-term 25-year PPAs for PLTS and PLTMH projects provide revenue certainty. In contrast, consumer segments like EVs are more price-sensitive and subject to policy swings.
Threat of Substitutes – Moderate
Fossil fuels remain immediate substitutes in electricity and transport due to existing infrastructure and lower upfront costs. Nonetheless, the implementation of carbon pricing (voluntary carbon market valued at IDR 70.7 billion in trades) and fuel subsidy reforms weaken fossil competitiveness (IESR, 2025a).
Industry Rivalry – High
Indonesia's energy sector is seeing heightened rivalry as legacy players (Adaro, Medco, Indy, etc) pivot to renewables. TOBA's multi-pronged approach, covering waste, IPP, EVs, and palm oil provides strategic insulation but also exposes it to complex coordination challenges (TOBA, 2024).
SWOT Analysis
Strengths
Diversified portfolio across legacy and green energy sectors (TOBA, 2024).
Strong institutional partnerships (ADB, DBS, GoTo).

Largest private waste operator in Indonesia post-Sembcorp acquisition.
Secure and predictable PPA-based income streams.

Weaknesses

Coal remains the dominant revenue source (94.2% in 2024) (TOBA, 2024).
Limited internal experience in managing large-scale RE and EV operations.

Opportunities

Indonesia's 333 GW of economically viable renewable potential (IESR, 2025b).
National targets: 23% RE mix by 2025 and 34% by 2030 (IESR, 2025a).
ESG-focused investment inflows accelerating.
Electrification of transport expanding rapidly.

Threats

USD 7 billion annual funding gap in energy transition finance (IESR, 2025a).
Delays in PLN procurement and regulatory approval.
Local social resistance in coal-dependent regions.
Global technology and supply chain bottlenecks.

Intrinsic Value Optimization

To ensure that PT TBS Energi Utama Tbk maximizes its enterprise value while navigating the transition from coal to sustainable infrastructure, it is essential to align its corporate strategy with fundamental value creation principles. As formulated by Damodaran, maximizing firm value revolves around making optimal investment, financing, and dividend decisions. Each of these pillars contributes directly to increasing free cash flow and reducing the risk or cost of capital. This section explores how TOBA can apply these principles to strengthen its valuation outlook and support its TBS2030 roadmap.

Investment Principle

According to Damodaran's investment principle, a company should allocate capital only to projects that are expected to generate returns above its cost of capital, thereby enhancing shareholder value over time (Damodaran, 2012). For PT TBS Energi Utama Tbk (TOBA), this principle plays a critical role in guiding strategic investment decisions during its transition away from coal. Rather than distributing resources evenly, TOBA should focus on business segments that offer high growth potential, attractive margins, and greater control over pricing and operations.

While renewable energy remains part of TOBA's long-term strategy, large-scale independent power producer (IPP) projects under fixed-rate Power Purchase Agreements (PPAs) with PLN offer limited upside. Although such projects provide stable, long-duration cash flows, they are bound by government-negotiated tariffs which are often designed to minimize cost to the state utility. This structure restricts profitability and constrains TOBA's ability to extract additional value beyond the initial contract terms.

In comparison, the waste management segment provides a more favorable investment profile. The acquisition of Sembcorp Environmental gives TOBA access to recurring municipal and industrial contracts, operational integration opportunities, and regulatory alignment with Indonesia's circular economy goals. This segment benefits from growing demand for waste-to-energy (WTE), RDF processing, and landfill diversion, all of which support margin expansion and project scalability.

Similarly, the electric vehicle (EV) ecosystem offers long-term strategic value, especially through fleet electrification and charging infrastructure. Unlike regulated IPP assets, the EV business allows for more dynamic pricing models, technology partnerships, and potential monetization of mobility services and data. Although still in the early stages of development, this segment aligns with national EV targets and represents a forward-looking growth platform with optionality.

The palm oil segment, despite historically lower margins, may also be repositioned under a value-creating framework aligned with Indonesia's national energy policy. With the government mandating the B40 biodiesel blend starting January 2025, and allocating 15.6 million kiloliters for national consumption, TOBA can explore integrating its palm oil operations into downstream bioenergy applications. Developing or partnering in biodiesel refining facilities or utilizing palm oil mill effluent (POME) for biogas generation would allow TOBA to move up the value chain. These options not only offer improved returns but also support the company's alignment with Net Zero Emission targets and help capture a share of Indonesia's growing renewable fuel market.

TOBA should also explore select regional opportunities in Southeast Asia, particularly in urban waste systems and decentralized infrastructure. Countries such as Vietnam and the Philippines are expanding public-private partnerships and offer more flexible commercial frameworks compared to Indonesia's utility-driven energy sector. These markets can provide additional high-return projects with manageable risk profiles.

Financing Principle

Damodaran's financing principle emphasizes that companies should adopt a capital structure that minimizes the overall cost of capital while reflecting the firm's operational risk profile (Damodaran, 2012). For PT TBS Energi Utama Tbk (TOBA), this principle becomes increasingly relevant as the company moves away from coal-fired operations and builds a portfolio based on more stable and regulated revenue streams, particularly in the waste management and renewable energy sectors. While TOBA has historically maintained a conservative approach to leverage, largely in response to the volatility of coal-related earnings, the current transition presents an opportunity to reassess its capital structure and improve capital efficiency.

Table 9. Optimal Capital Structure

	Current	Optimal	Change
D/(D+E) Ratio	60,14%	20,00%	-40,14%
Total Debt	$341.945.801	$113.720.011	($228.225.790)
Beta	1,34	0,74	-0,60
Cost of Equity	13,30%	10,45%	-2,85%
After-tax cost of Debt	7,85%	7,27%	-0,58%
WACC	10,03%	9,82%	-0,21%
Enterprise value	$500.768.170	$509.536.143	$8.767.972

A capital structure optimization using Damodaran's model indicates that shifting from the current debt-to-capital ratio of 60.14 percent to an optimal target of 20 percent would reduce the cost of equity from 13.30 percent to 10.45 percent, and lower the weighted average cost of capital (WACC) from 10.03 percent to 9.82 percent. Although the reduction in WACC appears marginal, this adjustment would result in an estimated increase of USD 8.77 million in enterprise value. The simulation also shows a reduction in the firm's beta, reflecting a decline in equity risk and further reinforcing the benefits of rebalancing TOBA's capital structure toward a more sustainable leverage level.

To complement this, TOBA should implement a segmented financing strategy tailored to the characteristics of each business unit. Capital-intensive independent power production (IPP) projects, supported by long-term power purchase agreements, are best financed through

project-specific, non-recourse debt structures. In contrast, the waste management segment, which offers recurring revenue and strong alignment with environmental policy goals, is well suited for green bonds or sustainability-linked loans. These instruments not only match the long-term nature of infrastructure investments but also appeal to the growing pool of ESG-conscious investors.

Additionally, TOBA can optimize the tax benefits of debt financing by leveraging interest deductibility while maintaining prudent credit metrics. By applying Damodaran's synthetic rating method to simulate interest coverage ratios and default spreads, TOBA can estimate its debt capacity more precisely and avoid excessive financial risk. Beyond conventional financing tools, TOBA can also monetize its decarbonization efforts through carbon credit trading. With an estimated annual emissions reduction of 1.3 million tonnes of CO_2 equivalent following its coal divestment, TOBA could generate additional income by registering eligible projects in Indonesia's national registry or global voluntary markets. At current voluntary market prices ranging between USD 4.80 and USD 10 per tonne (CarbonCredits.com, 2025), this could translate into an annual revenue potential of USD 6.2 million to USD 13 million. This revenue stream not only enhances return on investment but can also improve debt service capacity and strengthen the company's position in securing green financing. Together, these measures support the objective of minimizing capital costs while maximizing long-term firm value in alignment with TOBA's TBS2030 roadmap.

Dividend Principle

According to Damodaran's dividend principle, a firm should return cash to shareholders only when it lacks investment opportunities that yield returns above its cost of capital (Damodaran, 2012). For growth-oriented or transitioning companies, reinvestment should take priority to support long-term value creation. In the case of PT TBS Energi Utama Tbk (TOBA), this principle becomes especially relevant as the company phases out coal operations and accelerates investment in electric vehicles, waste management, and renewable energy. Historically, TOBA has distributed dividends from its coal profits, but as these cash flows diminish, the sustainability of existing payout levels requires careful reassessment.

While capital expenditure requirements for the Electrum platform and Sembcorp waste expansion are expected to pressure free cash flow to equity (FCFE) over the next three to five years, a complete suspension of dividends may trigger negative investor sentiment, particularly among shareholders who have grown accustomed to regular payouts. As a balanced solution, TOBA should adopt a residual dividend policy with a low but consistent payout ratio, at least on par with the most recent fiscal year. This approach preserves shareholder confidence while allowing the company to reinvest the majority of its earnings into high-return projects that drive its long-term growth.

To manage expectations effectively, the company should clearly communicate its capital allocation priorities and explain how reinvestment today supports stronger and more sustainable dividends in the future. Additionally, TOBA may explore issuing ESG-linked bonds or implementing loyalty-based share incentives to attract and retain long-term investors aligned with its strategic goals. By maintaining a modest dividend while prioritizing reinvestment, TOBA upholds Damodaran's principle without alienating its shareholder base, ensuring alignment between financial discipline and market credibility during its green transition.

CONCLUSION

This study examined the valuation and strategic transition of PT TBS Energi Utama Tbk (TOBA) as it moves away from coal-based operations toward a portfolio centered on renewable

energy, electric vehicles, and waste management. The analysis, based on a multi-scenario discounted cash flow model, shows that TOBA's long-term value is increasingly supported by these new business segments rather than its legacy coal assets. In the base-case projection, even with a gradual coal phase-out and moderate expansion of its sustainable businesses, TOBA maintains strong free cash flow generation. The best-case scenario, which assumes faster coal divestment and more rapid investment execution, results in a significant increase in intrinsic value. This highlights the critical role of strategic timing and disciplined capital deployment in shaping future valuation.

Financially, TOBA remains on stable footing. Although coal still contributes the majority of revenue in the near term, the company's sustainable segments are beginning to scale. The acquisition of Sembcorp Environmental Management is expected to contribute substantially, with the waste division projected to generate 50 million US dollars in EBITDA by the end of 2025. In addition, renewable power projects supported by long-term power purchase agreements offer consistent revenue streams that reduce earnings volatility and support the company's climate commitments. While TOBA is well-positioned, challenges remain. Indonesia's energy transition is progressing slowly, with regulatory bottlenecks, limited grid infrastructure, and uneven access to green financing still posing barriers. Nonetheless, TOBA's early investments in clean infrastructure provide a competitive advantage as the market and policy landscape continue to evolve. In conclusion, TOBA's shift toward sustainable operations not only supports its environmental objectives but also strengthens its long-term valuation fundamentals. With continued focus on disciplined execution, targeted capital allocation, and responsive financial strategy, the company is well-positioned to deliver both environmental and economic value in the years ahead.

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