



ESG Integration into Company Valuation: Case Study of PT Surya Energi Indotama

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ABSTRACT: The commitment of Indonesia to the Paris Agreement has prompted the government to issue regulations supporting the development of renewable energy in the country. Utilizing Environmental, Social, and Governance (ESG) criteria allows investors to align their values with their investments and effectively evaluate a company's risk management capabilities. Companies that prioritize ESG principles, particularly those involved in renewable energy production, can seize opportunities arising from this situation. PT Surya Energi Indotama (SEI), a company that has not engaged in equity funding before, aims to capitalize on these opportunities. To assess the value of PT SEI, both absolute valuation and relative valuation methods are employed. Recognizing the potential of ESG factors to enhance company value, the author implements the Value Driven Adjustment approach and incorporates the SASB industry ESG standard. The valuation analysis reveals a potential valuation increase of up to 30%.

KEYWORDS: ESG, absolute valuation, relative valuation, value-driven adjustment, SASB standard.

I. INTRODUCTION

Indonesia is committed to reducing greenhouse gas emissions as part of the Paris Agreement, with a target of up to 29% carbon reduction by 2030. The government aims for 23% renewable energy in the energy mix by 2025, supported by regulations like Presidential Regulation number 112 of 2022. This might attract sustainability investors and promote renewable energy development. PT Surya Energi Indotama (SEI), operating in the solar PV power plant sector, seeks to expand its business to stay competitive in the growing market. To support its growth, PT SEI plans to pursue equity funding to secure additional capital. This funding will assist the company in expanding its operations and further advancing its business objectives. The PT SEI business has already focused on ESG by producing renewable energy that incorporates ESG principles. The author intends to assess the importance of ESG factors and how it is going to help increase the value of the company. Specifically, the author is focusing on ESG topics that are relevant to the solar PV industry and is using a value-driven approach to analyze how these issues affect the company's business model and competitive position.

II. LITERATURE REVIEW

The Paris Agreement, adopted at COP21 in 2015, aims to limit global temperature increase and mitigate climate change impacts. Indonesia, ranked as the most vulnerable country, should prioritize transitioning to renewable energy to combat climate change. Presidential regulations in Indonesia, including No. 79 of 2014 [1] and No. 22 of 2017 [2], encourage the use of renewable energy and set targets for its implementation. However, the government acknowledges that the energy mix target has not been met and has implemented Presidential Regulation 112/2022 [3] to accelerate renewable energy development. This regulation includes initiatives for procuring renewable energy and sets tariffs to drive growth. Additionally, the regulation restricts the development of new coal power plants and establishes emission limits for existing plants.

Energy transition involves more than just a technological change from fossil fuels to renewables. It also covers the social, economic, and environmental aspects of developing and implementing clean energy sources (Saldivia Olave & Vargas-Payera, 2020) [4]. In the past, it was widely accepted that institutional investors aimed to maximize short-term shareholder value, often considering social and environmental impacts as optional trade-offs. However, the rise of responsible investment has shifted this perspective. As the costs continue to decrease and they become increasingly common, the renewable energy sector is expected to grow and be seen as a strong investment opportunity. The energy transition plays a vital role in ESG investing and its significance will continue to grow as investors give more priority to ESG factors (Feder J, 2020) [5]. Now, using ESG criteria allows investors to align their values with their investments and assess a company's risk management capabilities effectively.



ESG disclosure enables the identification of opportunities and risks, helping investors focus on sustainability to avoid financially risky companies with poor environmental practices and controversial business behaviors. Integrating ESG factors into risk analysis enhances understanding of a company's operating environment, identifies risks, and aligns with stakeholder expectations (Quintiliani, 2022) [6]. Quintiliani's research also supports the positive correlation between a company's ESG score and financial performance, as indicated by metrics like levered free cash flow, ROE, current ratio, and quick ratio. (Aydoğmuş et al., 2022) [7] conducted a study that further reinforces this correlation by examining the impact of ESG performance on firm value and profitability. The results show a positive and significant relationship between the combined ESG score and firm value. Social and Governance scores also exhibit positive and significant relationships, while the Environment score does not show a significant relationship with firm value. Conversely, the combined ESG score, along with the individual Environment, Social, and Governance scores, have positive and significant relationships with firm profitability. These findings suggest that investing in companies with high ESG performance can lead to financial benefits in terms of value and profitability.

Many ESG strategies do not effectively incorporate ESG factors into company valuation models. Schramade (2016) [8] suggests a value-driven adjustment approach that links ESG issues to value drivers by considering their impact on a company's business model and competitive position. To identify the relevant ESG factors for company valuation, Consolandi et al., (2022) [9] propose following the materiality classification established by the Sustainability Accounting Standards Board (SASB). The SASB Standards provide a framework for companies to disclose financially significant sustainability information to investors. These standards allow businesses to communicate the risks and opportunities that impact their value from an industry-specific perspective. In 2022, the IFRS Foundation took over the responsibility for the SASB Standards after merging with the Value Reporting Foundation, which previously managed the standards. These guidelines cover 77 different industries and highlight the critical environmental, social, and governance issues that have the greatest impact on financial performance within each industry.

III. METHODOLOGY

This study focused on PT Surya Energi Indotama (SEI) as the research subject, with the aim of valuing PT SEI to capitalize on the growing potential of the renewable energy market in Indonesia. The valuation methods employed were absolute valuation using the discounted cash flow (DCF) method, as well as relative valuation using P/E and EV/EBITDA multiples. The author attempted to integrate ESG topics into the valuation process using the Value-Driven Adjustment (VDA) approach. The ESG topics used in the VDA were identified based on industry specific ESG issues in the solar PV sector, following the SASB Standards.

The data required for this research can be categorized into primary and secondary data. Primary data was obtained directly by the author and includes information on the company's policy direction from management, as well as data related to ESG topics within the company, such as energy consumption and energy mix. Secondary data comprises financial reports of PT SEI from 2019 to 2021, data on peer companies, market risk premium, risk-free rate, country risk premium, and other relevant market data.

IV. RESULT AND DISCUSSION

SASB provides a materiality map that identifies the sustainability-related risks and opportunities that are most likely to impact cash flows, access to finance, and the cost of capital across different industries. PT SEI is an Engineering, Procurement, and Construction company specializing in renewable energy, particularly solar PV. Based on its business focus, PT SEI falls under the Solar Technology & Project Developers and Engineering & Construction Services industry category. To classify relevant issues within an industry, SASB divides them into five categories: Environment, Social Capital, Human Capital, Business Model & Innovation, and Leadership & Governance. The relevant issues for the industry in which PT SEI operates can be found in the table []

<i>Environment</i>	<i>Social Capital</i>	<i>Human Capital</i>	<i>Business Model & Innovation</i>	<i>Leadership & Governance</i>
Energy Management Water & Wastewater Management	Product Quality & Safety	Employee Health & Safety	Product Design & Lifecycle Management Materials Sourcing & Efficiency	Business Ethics



Waste & Hazardous
Materials
Management
Ecological Impacts

Each ESG value driver, as outlined in the SASB Standard, has its own specific accounting metric. The identification of these accounting metrics can be done through quantitative calculations or through discussions and analysis. The selection of topics is based on their potential to impact valuation rather than solely on data availability. However, implementing all nine issues can be challenging due to data availability constraints. It's important to note that not every topic has a direct impact on the company's value drivers, so the author selected only a limited number of topics that can significantly affect value driver such as Energy Management in Manufacturing, Hazardous Waste Management, Management of Energy, Infrastructure Integration & Related Regulations, and Product End-of-life Management. The ESG issues, their effects on value drivers, and PT SEI performance can be observed in the provided table.

Topics	Accounting Metric	Category	Unit of Measure	Performance	Impact on Value Driver
Energy Management in Manufacturing	1) Total energy consumed, percentage electricity, percentage renewable (2) grid (3)	Quantitative	Kilowatt Hour (kWh), Percentage (%)	1)187852.8 kWh; 90.83%; 9.17%	Decrease in COGS
Hazardous Waste Management	Amount of hazardous waste generated; percentage recycled	Quantitative	Metric tons (t), Percentage (%)	n/a	Add Expenses
Management of Energy Infrastructure Integration & Related Regulations	Description of risks associated with integration of solar energy into existing energy infrastructure and discussion of efforts to manage those risks	Discussion and Analysis	n/a	Dampening the rise in electricity tariff	Decrease in cost of revenue
	Description of risks and opportunities associated with energy policy and its impact on the integration of solar energy into existing energy infrastructure	Discussion and Analysis	n/a	Actively looking for new business opportunity	New Revenue stream
Product End-of-life Management	Percentage of products sold that are recyclable or reusable	Quantitative	Percentage (%)	n/a	Added Expenses
	Weight of end-of-life material recovered; percentage recycled	Quantitative	Metric tons (t), Percentage (%)	n/a	Decrease in COGS

In the valuation results, it was found that the valuation of PT SEI using the DCF method amounted to IDR 4,676,987,999,218. For the valuation using relative valuation, with the EV/EBITDA multiple, the valuation of PT SEI was IDR 8,686,232,950,359 and IDR



6,978,853,964,499 using the P/E ratio multiple. As the DCF method heavily relies on input assumptions, the author conducted a sensitivity analysis to identify the factors that most significantly affect the valuation results. It was determined that revenue, risk-free rate, and market risk premium were the factors with the highest impact. After obtaining the key input factors affecting the DCF valuation, the author performed scenario analysis to assess extreme valuation outcomes. Additionally, the author conducted 1000 Monte Carlo simulations to examine the distribution of possible valuation results using the DCF method resulting in relatively small standard deviation meaning that the simulation results clustered around the mean.

To incorporate the VDA effect into valuation, the author examines various subjects and evaluates how company performance is impacted, whether the implementation has already occurred or is planned. In the context of Energy Management in Manufacturing, the cost of revenue is reduced by mitigating the increase in electricity tariffs. Hazardous Waste Management leads to an increase in terminal Capex as the company needs to allocate more capital for waste management in the future. By leveraging the Management of Energy Infrastructure Integration & Related Regulations, PT SEI can seize business opportunities and new sources of revenue, such as carbon credit trading. The International Renewable Energy Agency (IRENA) [10] suggests that the preferred approach for PV waste management is to sequentially reduce, reuse, and recycle. Solar energy technology has significantly advanced and become more affordable. By reducing reliance on outdated technologies and utilizing the latest ones for installations, the cost of revenue can be reduced while maintaining energy production. IRENA also acknowledges the existence of a market for used solar PV materials, which can be pursued for its business potential. As for recycling, there is currently no technology available to recycle the main components of solar PV, particularly solar modules, so the author is unable to quantify this aspect. Similarly, when it comes to structural integrity and safety, compliance with regulations in these areas aims not to enhance business opportunities but to protect against potential expenses.

The author has already mentioned ESG topics and how each of them can influence value drivers. The total impact of ESG topics on valuation, using the VDA approach, results in a 32.53% increase in the discounted cash flow (DCF) valuation resulting in valuation result of IDR 6,198,219,020,274. The contribution of each topic to the valuation can be observed in the table provided.

<i>Topics</i>	<i>Value Driver Affected</i>	<i>Amount</i>
Energy Management in Manufacturing	Decrease in cost of revenue	0.03%
Hazardous Waste Management	Increase in terminal Capex	20%
Management of Energy Infrastructure Integration & Related Regulations	Add source of Revenue	0.05%
Product End-of-life Management	Decrease in cost revenue	6.26%
	New terminal revenue stream.	0.50%
	Reduce in terminal cost of revenue	n/a
Structural Integrity & Safety	Protection against potential expenses	n/a

PT SEI is a private company that has not traded publicly or do equity funding before. For relative valuation, author project EBITDA and earning of the company. After integrating ESG topics with VDA approach, both earnings and EBITDA increase by 36.37% and 34.64% respectively. Based on this, the valuation of PT SEI is estimated to be IDR 11,695,564,503,802 when using the average EV/EBITDA multiple, and IDR 9,517,369,224,171 when using the average P/E ratio.

The author conducted a valuation due to the growing stakeholder awareness of Environmental, Social, and Governance (ESG) factors in investment activities. The Value Driver Approach (VDA) had a 32.53% influence on the enterprise value of PT SEI, although results may vary depending on the model used. Careful examination is required when applying the relative valuation method, as finding identical companies for benchmarking is challenging. PT SEI operates in the renewable energy field and hopes to see more companies joining this sector in the future.

The valuation of PT SEI considered future projected cash flows, including uncertain elements influenced by the VDA. Using more efficient solar panels to reduce the cost of revenue may increase cost efficiency, but local content regulations may conflict with this



approach. Local solar module manufacturing technology needs to be developed to ensure competitive prices. Reusing and recycling processes mentioned by the author could generate new revenue sources but require careful attention as they are still in the developmental stage. The implementation of carbon trading regulations and exploration of renewable energy construction grant programs have the potential to generate fresh business opportunities.

While the implementation of ESG topics using the VDA approach improved SEI's valuation, certain aspects are still under development, such as selling carbon credits, reusing and selling old solar PV components, and recycling PV components. Gathering information and determining the implementation process falls under the responsibility of the business development department. Prioritization of ESG topics is crucial, with the utilization of carbon credits and market-based instruments related to renewable energy being the most feasible in the current conditions.

V. CONCLUSION

The integration of ESG value drivers into a company's overall value drivers using the Value Driven Adjustment Approach can lead to a higher valuation of the enterprise value. However, it should be noted that not all ESG value drivers can be effectively incorporated into the company's value drivers using this method. The quantification of ESG value drivers, particularly those associated with policy and regulatory compliance, can be challenging as there may be a lack of specific regulations governing them. For instance, the processing of used Solar PV waste is still not widely implemented due to the age of the equipment. Lastly, relative valuation heavily relies on carefully selecting peer companies that share similarities in their business lines.

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