Analysis of Sustainable Development Goals (SDGs) 12 Analysis on the Performance of PT Pertamina Geothermal Energy Tbk

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Received: April, 2025; Accepted: April, 2025; Published: June, 2025
Permalink/DOI:

Abstract

This study aims to analyze the relevance and contribution of PT Pertamina Geothermal Energy Tbk (PGE) to the achievement of Sustainable Development Goal (SDG) number 12, namely "Responsible Consumption and Production." SDG 12 emphasizes the importance of resource efficiency, waste reduction, and sustainable production and consumption practices. Through a qualitative study using a descriptive approach, the analysis focuses on the company's sustainability reports and environmental performance, particularly in energy management, waste handling, and operational efficiency. The results indicate that PGE has implemented various initiatives aligned with the principles of SDG 12, such as the utilization of geothermal energy as a renewable energy source, the adoption of an ISO 14001-based environmental management system, and programs aimed at reducing emissions and operational waste. However, challenges remain in terms of data transparency and more comprehensive reporting on the environmental impacts of consumption and production. This study recommends strengthening the integration of sustainability principles into the supply chain and enhancing SDG-based reporting to increase the company's tangible contribution to global development goals.

Keywords**:** *SDG 12, Sustainable Consumption And Production, Geothermal Energy, Corporate Sustainability, Pertamina Geothermal Energy*

INTRODUCTION

Sustainable development is a global agenda that emphasizes the balance between economic growth, environmental preservation, and social well-being. As part of this global commitment, the United Nations (UN) has formulated 17 Sustainable Development Goals (SDGs) to be achieved by 2030. One of the key goals in this agenda is SDG 12, which focuses on Responsible Consumption and

Production, emphasizing resource efficiency, waste management, and sustainable operational practices.

Amid the challenges of the climate crisis and increasing pressure on natural resources, the energy sector plays a highly strategic role in supporting the achievement of the SDGs, particularly SDG 12. PT Pertamina Geothermal Energy Tbk (PGE), a subsidiary of a state-owned energy company and a key player in geothermal energy development in Indonesia, has great potential to drive the transition toward clean energy and environmentally friendly industrial practices.

However, it is essential to assess the extent to which PGE's operational activities and sustainability strategies align with the indicators and principles of SDG 12. This analysis serves not only as a foundation for evaluating the company's performance in environmental and social aspects but also as a benchmark for the geothermal energy sector's contribution to sustainable development in Indonesia. Therefore, this study aims to evaluate the link between PGE's sustainability performance and the achievement of SDG 12, as well as to identify challenges and opportunities for future improvement.

METHOD

This study uses a descriptive qualitative approach to evaluate how PT Pertamina Geothermal Energy Tbk (PGE) implements SDG 12 on responsible consumption and production. Data were collected from company reports, ESG evaluations, interviews with key personnel, and field observations. The analysis focuses on waste management, resource efficiency, emission reduction, and sustainability initiatives. Findings are compared with global standards like the UN Global Compact and GRI to assess performance and identify areas for improvement.

RESULTS AND DISCUSSION

The analysis of PT Pertamina Geothermal Energy Tbk's (PGE) sustainability reports shows that the company has taken concrete steps to support the principles of responsible consumption and production as outlined in SDG 12. The discussion is structured around several key SDG 12 indicators:

Resource and Energy Efficiency

As a geothermal energy company, PGE's business model directly supports the transition to clean energy. The use of geothermal as a renewable energy source makes its operations more environmentally friendly compared to fossil fuel-based companies. Additionally, PGE implements energy efficiency programs across all units through regular energy audits, energy intensity monitoring, and investments in energy-saving equipment.

Waste Reduction and Environmental Management

In waste management, PGE applies the reduce, reuse, and recycle (3R) principles for non-hazardous waste, and manages hazardous waste (B3) in accordance with legal regulations. For example, drilling mud and condensate water are treated to avoid environmental contamination. In the latest year analyzed, the volume of recycled non-hazardous waste increased, reflecting the effectiveness of the company's waste reduction programs. PGE also conducts regular air and water quality monitoring to ensure that operations do not significantly impact surrounding ecosystems.

Environmental Management Systems

PGE is certified under ISO 14001, indicating that its environmental management systems comply with international standards. This certification serves as a foundation for the implementation of integrated sustainability policies. The company has developed environmental impact mitigation plans based on risk analysis and provides internal training to enhance employee competence in maintaining environmental performance.

Transparency and Sustainability Reporting

While PGE actively publishes annual sustainability reports based on GRI (Global Reporting Initiative) standards, there are still limitations in the presentation of quantitative data aligned with SDG 12 indicators. For instance, data on material efficiency, water consumption per production unit, and the number of supply chain partners applying sustainability principles are not elaborated in detail. This limits the ability to comprehensively assess performance across all SDG 12 targets.

Challenges in Sustainable Supply Chains

PGE faces challenges in extending SDG 12 principles throughout its supply chain. Vendor and contractor selection does not consistently include environmental and social criteria, and partner engagement in sustainability programs remains limited. To truly achieve responsible consumption and production, it is crucial for the company to build an inclusive ecosystem throughout the entire production cycle—from upstream to downstream.

Sustainable Initiatives and Innovations

As part of efforts to enhance sustainability performance, PGE is exploring the use of digital technologies for real-time monitoring of emissions and energy efficiency. These innovations are expected to improve data accuracy and decision-making effectiveness. The company also runs social responsibility programs focused on environmental education and waste management in project areas, helping to raise community awareness about more responsible consumption practices.

CONCLUSION

Based on the analysis of PT Pertamina Geothermal Energy Tbk's (PGE) sustainability performance, it can be concluded that the company has made significant efforts to support the achievement of Sustainable Development Goal (SDG) 12 on responsible consumption and production. Through the utilization of geothermal energy as a renewable energy source, the implementation of an ISO 14001-based environmental management system, and the execution of resource efficiency and waste management programs, PGE has taken strategic steps toward more sustainable operations. The company's commitment is reflected in various environmental initiatives, such as emission reduction, waste recycling, and energy efficiency improvements across its operational areas. However, challenges remain in terms of transparency in reporting—particularly regarding quantitative SDG 12 indicators—and in integrating sustainability principles throughout the supply chain. This indicates that, while a solid sustainability foundation has been established, there is still room for improvement in managing consumption and production more comprehensively. Overall, PGE is on the right track in supporting the global development agenda, but improvements in reporting, collaboration, and innovation will be key to amplifying the company's positive impact on the environment and society.

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