Proceedings of the International Conference on Education, Economics, Business, Entrepreneurship, and Finance (ICEBEF)
Volume 4 (2026)

GREEN ECONOMY POLICIES IN ACHIEVING SUSTAINABLE DEVELOPMENT GOALS THROUGH THE RENEWABLE ENERGY SECTOR: SYSTEMATIC LITERATURE REVIEW

Zahra Meilany Nabila[1], Anita Susanti[2], Hikmalia Safitri[3], Fazar Nuriansyah[4]
[1,2,3,4]Faculty of Economics and Business Education, Universitas Pendidikan Indonesia, Jalan Dr. Setiabudi No.229
E-mail: zahra.m.nabila@upi.edu; anitasusanti55@upi.edu; hikmaliasafitri@upi.edu

ABSTRACT
The rapid economic development and increasing energy consumption have posed significant challenges to global environmental and social sustainability. The dominance of fossil energy has led to an increase in carbon emissions, making the transition to a green economy and the use of renewable energy critical solutions for achieving the Sustainable Development Goals (SDGs), particularly SDG 7 on affordable and clean energy. This study analyses green economy policies in achieving SDGs through the renewable energy sector using the Systematic Literature Review (SLR) method. Based on 12 articles analyzed, the main findings show that green economy policies, through the development of renewable energy and green finance, positively impact sustainable economic growth and carbon emission reduction in various countries. Furthermore, the increase in renewable energy consumption has also been shown to support the reduction of social inequalities and improve welfare. This study aims to analyze the role of the green economy in achieving the SDGs through the renewable energy sector using this SLR method, with the expectation of providing a more comprehensive understanding of its effectiveness in supporting the sustainable energy transition in Indonesia.

Key words: green economy; renewable energy; Sustainable Development Goals (SDGS); Systematic Literature Review (SLR)

INTRODUCTION

Rapid economic development and increased global energy consumption have posed major challenges to environmental and social sustainability. In Indonesia, the growing demand for energy, driven by technological advances and population growth, is still dominated by fossil fuels (Puspita & Nugraheni, 2024). Data on the national primary energy mix in 2023 shows that coal accounts for 40.46%, petroleum 30.18%, natural gas 16.28%, while new and renewable energy only accounts for 13,09% (Adi, 2024). The Global Carbon Project report ranks Indonesia sixth in the world with an 18.3% increase in emission in 2022, mainly due to fossil fuel consumption, deforestation, and land use change (Shabrina & Rahmadhanti, 2024).

This phenomenon derives the urgency of developing renewable energy and implementing green economy policies as the transition strategy towards sustainable development. The concept of green economy itself, as stated by Pearce et al., (1989) in Blueprint for a Green Economy, emphasizes the balance between economic growth and environmental preservation, with natural capital viewed as an asset that must be preserved. Green economy policies are also in line with the Sustainable Development Goals (SDGs), particularly goal number 7 on providing affordable and clean energy (Wardana, 2023).

Previous studies have shown that the implementation of the green economy can have a positive impact on sustainability. Aisah et al., (2023) Found that the green economy plays an important role in reducing carbon emission while maintaining economic growth. Wahida & Uyun (2023), also emphasized that this approach can protect the environment in natural resources in the long-term. Mubarok (2023) stated that the green economy is a strategic step to strengthen economic and environmental resilience.

However, there is a research gap that needs to be addressed. Previous studies have generally focused on renewable energy development without directly linking it to the achievement of SDGs, especially SDGs number 7. In addition, the approach used has generally been case studies without Systematic Literature Review (SLR) to identify the most effective policy patterns in promoting the green economy transition.

Based on these gaps, this study aims to analyze green economy policies in achieving SDGs through the renewable energy sector using the SLR method. With this approach, the study is expected to provide a more comprehensive understanding of the effectiveness of green economic policies, especially in supporting sustainable energy transition in Indonesia.

METHOD

This study uses the Systematic Literature Review (SLR) method to analyze green economy policies in achieving SDGs through the renewable energy sector. This method is carried out systematically to collect data, test it critically, and integrate various relevant research findings Norlita et al., (2023). The research stages began with determining the topic, namely green economy policies in achieving SDGs through the renewable energy sector. Next, the researchers chose the Scopus database as the main database due to its high credibility. Literature research was conducted using Publish or Perish software, which allows articles to be searched based on specific keywords, year or publication, year of publication, and research relevance. The initial search focused on articles

with predetermined keywords published between 2019 and 2025 to obtain the latest studies. In the initial search stage, 167 publications were found to be relevant according to the criteria.

The screening and eligibility assessment stage began with the application of inclusion and exclusion criteria. The 167 publications initial selected, 37 publications were discarded because they were not research articles. Next, the availability of full text was checked, and 68 articles were eliminated because they were not available in full text or open access. After that, screening based on titles and keywords was carried out, leaving 30 articles relevant to the research topic. The next stage was an assessment of eligibility, which was carried out through an in-depth review of the full text to ensure the relevance of the content and research objectives, resulting in only 12 articles that met the research criteria. The final stage was inclusion, in which the 12 articles were extracted, analyzed, and synthesized to obtain findings relevant to the research objectives. The results were presented in the form of a detailed narrative and linked to the problems to be examined.

RESULTS AND DISCUSSION

Tabel.1 Research Method and Findings

Author	Country and Sample/Population	Research Method and Focus	Main Findings
(Guo et al., 2023)	China, Industry & energy data (1990–2020).	Time Series econometrics analysis of 1990-2020 to examine factors affecting energi efficiecy, carbon emissions, and climate risk	Industrial growth has the potential to reduce energy efficiency and increase emissions, thus requiring strict management, and a strong financial system can support renewable energy and reduce climate risk.
(Jiang et al., 2023)	E-7 countries (China, India, Indonesia, Mexico, Brazil, Turkey, Russia), panel data (1996–2019).	Panel Quantile Regression (1996–2019) to assess the impact of policy uncertainty, institutional quality, and renewable energi consumption on green growth.	Economic policy uncertainty hinders green growth, while intitutional quality and renewable energi consumption promote an increase in Green Growth Domestik Product (GGDP).
(Diale et al., 2021)	Afrika Selatan & Bangladesh, rural communities.	Systematic review of 47 sources to identify factors for success and barriers to renewable energi in rural communities.	Economic policy uncertainty hinders green growth, while institutional quality and renewable energi consumption promoten an increase in Green Growth Domestic Product (GGDP).
(Ahmed et al., 2022)	ASEAN (Indonesia, Malaysia, Filipina, Singapura, Thailand, dan Vietnam), energy & emission data (2002–2018).	Panel econometric test (2002–2018) examines the relationship between energi efficiensy, green finance, and CO_2 emissions.	Green bonds effectively reduce CO_2 emissions. However, economic growth and population increase risk raising emissions if not offset by clean energy.
(Sinha et al., 2023)	Amerika Serikat, energy projects & green financing	Multivariate quantile-on-quantile regression to examine the impact of green financing on renewable energy generation.	Environmental tax revenues do not always encourage the adoption of renewable energy because companies prefer to pay taxes rather than invest in green technology.
(Ciucu Durnoi & Delcea, 2023)	European Union (27 countries), renewable energy data.	Statistics and forecasting models (ARIMA, Holt-Winters) to evaluate and predict the share of renewable energy by 2030.	Average renewable energy use is 24,49% with significant variation between countries. The transportation sector has the lowest adoption rate. Sustainable investment is needed to achieve the target

			of 45% green energy by 2030.
(Phan, 2024)	ASEAN, 200 companies across 7 sectors (2011–2020).	Descriptive, correlation, and regression analyses using the Augmented Mean Group (AMG) method to assess the role of the green economy, green bonds, and clean energy in climate regulation and development.	Green economy advancement (GEA), green bonds, and clean energy consumption are proven to support sustainable development. FDI and climate regulation also play positive roles, with GDP shows a negative impact.
(Lin et al., 2020)	Taiwan & Japan, electricity sector.	Legal policy analysis focusing on the challenges of the energy transition and its alignment with the SDGs.	Electricity sector reform emphasizes market liberalization; however, weak regulatory frameworks result in limited incentives for renewable energy. Subsidies alone are insufficient, additional economic instruments are needed.
(Gibon et al., 2020)	27 countries, 61 renewable energy projects	Life Cycle Assessment (LCA) of renewable energy projects financed by green bonds to assess environmental impacts.	Green bonds can finance clean energy projects, but emission reduction outcomes very significantly. Transparency in LCA reporting is essential for improving efficiency.
(Zhang et al., 2023)	China, 30 provinces (2007–2020).	Spatial econometric model and NDDF approach to measure the spillover effects of green financing and clean energy on green economic development across provinces.	Green financing and clean energy have spillover effects on green growth, but beyond a certain threshold, the impact becomes strongly positive. Policy effectiveness varies across regions.
(Bilas et al., 2022)	United Kingdom, offshore wind power projects.	Systematics study on trends, regulation, and strategies of offshore wind energy as a driver of the green transition.	Offshore wind energy plays a vital role in the transition toward carbon neutrality. The UK is recognized as a global leader, supported by favorable regulations such as fixed-price contracts for energy production.
(Juan, 2020)]	Filipina, national renewable offshore wind power projects.	Policy analysis to formulate strategies for transitioning toward a green economy based on renewable energy.	The utilization of solar energy (such as rooftop panels and solar roads) holds great potential for power generation, job creation, and reducing inequality in electricity access.

Green economy policies are being implemented by various countries with the main objectives of addressing climate change, reducing dependence on fossil fuels, and achieving sustainable development. The Philippines, for example, has solar energy potential. Research by Juan (2020) shows that the construction of solar panel roofs on highways can generate energy, extend the life of roads, and create jobs.

The United Kingdom has developed offshore wind energy, which contributes significantly to clean and affordable energy. Bilas et al., (2022), emphasize that regulations, such as fixed price contracts, have encouraged the transition to renewable energy. Taiwan also faces challenge in its green policy. Research by Lin et al., (2020),

shows that electricity reform still depends on subsidies and minimal economic incentives, which are insufficient to drive a sustainable transition.

Research by Gibon et al., (2020), emphasizes the importance of Life Cycle Assessment (LCA) to evaluate renewable energy projects financed by green bond. As a result, Green House Gas (GHG) emission avoidance varies greatly between 29 and 359 tons of CO_2 per over €1,000,000 of investment. However, a lack of transparency in reporting can lead to inefficient allocation of funds.

In China Guo et al., 2023); Zhang et al., (2023),the European Union (Ciucu Durnoi & Delcea, 2023) and the United State (Sinha et al., 2023), policies to strengthen the financial system and develop clean energy have proven to support green investment and green efficiency. Guo et al., (2023) also emphasized that industrial production has a negative impact on energy efficiency, so growth needs to be managed to avoid an increase in carbon emission. Phan (2024) emphasized the role of green financing, clean energy consumption, and the commitment of governments and businesses in supporting sustainable development.

Research by Jiang et al., (2023) on E-7 countries proves that renewable energy consumption increases Green Growth Domestic Product (GGDP), which means it supports green and environmentally friendly growth. Diale et al., (2021) in South Africa also found that renewable energy plays an important role in SDGs, especially poverty alleviation, economic growth, and gender equality. Similar results were shown by Ahmed et al., (2022) in ASEAN, that green finance and clean energy can support sustainable growth and reduce long-term greenhouse gas emissions.

Overall, the implementation of green economy policies in various countries shows that despite the many challenges that must be faced, a comprehensive and inclusive approach can yield positive results in achieving Sustainable Development Goals, particularly in the renewable energy sector.

CONCLUSION

The study shows that the implementation of a green economy in various countries contributes positively to the achievement of SDGs through the renewable energy sector, despite facing various structural and regulatory challenges. The Philippines, the United Kingdom, Taiwan, European countries, the United States, and China show that regulatory support, strengthening of financial systems, and the implementation of green financial instruments are important factors in accelerating the transition to clean energy. On the other hand, the experiences of developing countries such as South Africa and ASEAN confirm the role of renewable energy in supporting green growth, poverty alleviation, and improved social welfare. These findings show that the effectiveness of the green economy is highly dependent on a comprehensive, transparent, and inclusive approach, emphasizing the need for integration between energy policy, green financing, and multi-stakeholder engagement to ensure a more optimal sustainable energy transition, particularly in the context of achieving the SDGs.

REFERENCES

Adi, A. C. (2024, January). *Pemerintah Kejar Target Tingkatkan Bauran EBT*. KEMENTERIAN ENERGI DAN SUMBER DAYA MINERAL.

Ahmed, N., Areche, F. O., Sheikh, A. A., & Lahiani, A. (2022). Green Finance and Green Energy Nexus in ASEAN Countries: A Bootstrap Panel Causality Test. *Energies*, *15*(14). https://doi.org/10.3390/en15145068

Aisah, A., Rahmadia, F. I., Mentari, G., & Permana, I. (2023). Analisis Implementasi Green Economy di Indonesia. *Prestise: Jurnal Pengabdian Kepada Masyarakat Bidang Ekonomi Dan Bisnis*, *3*(1), 16–31. https://doi.org/10.15575/prestise.v3i1.30446

Bilas, V., Franc, S., & Trifunić, L. (2022). SUPPORTING SUSTAINABILITY THROUGH THE USE OF OFFSHORE WIND ENERGY: THE CASE OF UNITED KINGDOM. *Journal of Sustainability Science and Management*, *17*(8), 236–250. https://doi.org/10.46754/jssm.2022.08.014

Ciucu Durnoi, A. N., & Delcea, C. (2023). Greening the Future: Europe's Renewable Energy Landscape in 2030. *Management and Marketing*, *18*(s1), 411–426. https://doi.org/10.2478/mmcks-2023-0022

Diale, C. D., Kanakana-Katumba, M. G., & Maladzhi, R. W. (2021). Ecosystem of renewable energy enterprises for sustainable development: A systematic review. *Advances in Science, Technology and Engineering Systems*, *6*(1), 401–408. https://doi.org/10.25046/aj060146

Gibon, T., Popescu, I. Ș., Hitaj, C., Petucco, C., & Benetto, E. (2020). Shades of green: Life cycle assessment of renewable energy projects financed through green bonds. *Environmental Research Letters*, *15*(10). https://doi.org/10.1088/1748-9326/abaa0c

Guo, L., Kuang, H., & Ni, Z. (2023). A step towards green economic policy framework: role of renewable energy and climate risk for green economic recovery. *Economic Change and Restructuring*, *56*(5), 3095–3115. https://doi.org/10.1007/s10644-022-09437-w

Jiang, Y., Sharif, A., Anwar, A., The Cong, P., Lelchumanan, B., Thi Yen, V., & Thi Thuy Vinh, N. (2023). Does green growth in E-7 countries depend on economic policy uncertainty, institutional quality, and renewable energy? Evidence from quantile-based regression. *Geoscience Frontiers*, *14*(6). https://doi.org/10.1016/j.gsf.2023.101652

Juan, D. M. M. S. (2020). Transitioning to a Progressive Green Economy in the Philippines. *Journal of Developing Societies*, *36*(2), 155–181. https://doi.org/10.1177/0169796X20912632

Lin, M. X., Liou, H. M., & Chou, K. T. (2020). National energy transition framework toward SDG7 with legal reforms and policy bundles: The case of Taiwan and its comparison with Japan. *Energies*, *16*(3). https://doi.org/10.3390/en13061387

Mubarok, D. (2023). Penerapan Green Economy Dalam Mencapai Pembangunan Ekonomi Berkelanjutan. *Jurnal Bina Ummat*, *6*(2), 31–52.

Norlita, D., Nageta, P. W., Faradhila, S. A., Aryanti, M. P., Fakhriyah, F., & Ismayam. A, E. A. (2023). Systematic Literature Review (Slr) : Pendidikan Karakter Di Sekolah Dasar. *JISPENDIORA Jurnal Ilmu Sosial Pendidikan Dan Humaniora*, *2*(1), 209–219. https://doi.org/10.56910/jispendiora.v2i1.743

Pearce, D., Markandya, A., & Barbier, E. B. (1989). *Blueprint for a Green Economy*. Earthscan Publications Ltd.

Phan, T. C. (2024). Impact of green investments, green economic growth and renewable energy consumption on environmental, social, and governance practices to achieve the sustainable development goals: A sectoral analysis in the ASEAN economies. *International Journal of Engineering Business Management*, *16*. https://doi.org/10.1177/18479790241231725

Puspita, D., & Nugraheni, N. (2024). Energi Bersih Dan Terjangkau Dalam Mewujudkan Tujuan Pembangunan Berkelanjutan (SDGs). *Jurnal Sosial Dan Sains*, *4*(3), 271–280. https://doi.org/10.59188/jurnalsosains.v4i3.1245

Shabrina, & Rahmadhanti, firdha. (2024). Mendorong Program Pertumbuhan Ekonomi Hijau (Green Growth Economy) Melalui Transisi Energi Terbarukan Di Indonesia. *Journal Pedia*, *6*(3), 220–230.

Sinha, A., Ghosh, V., Hussain, N., Nguyen, D. K., & Das, N. (2023). Green financing of renewable energy generation: Capturing the role of exogenous moderation for ensuring sustainable development. *Energy Economics*, *126*. https://doi.org/10.1016/j.eneco.2023.107021

Wahida, K., & Uyun, H. (2023). Tatanan Indonesia Dalam Mewujudkan Pertumbuhan Ekonomi Berkelanjutan Melalui Green Economy. *Harmoni: Jurnal Ilmu Komunikasi Dan Sosial*, *1*(2), 14–26. https://doi.org/10.59581/harmoni-widyakarya.v1i2.291

Wardana, D. A. (2023). Pengaturan Hukum tentang Pemanfaatan Biogas Sebagai Energi Terbarukan Dalam Mendorong Ekonomi Hijau (Green Economy) di Indonesia. *Jurnal Bevinding*, *1*(05), 27–42.

Zhang, M., Zheng, L., & Xie, Y. (2023). *Spatial spillover effect of Green Finance and Clean Energy on China's Provincial Green Economic Development*. https://doi.org/10.21203/rs.3.rs-2677905/v1