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COMPARATIVE ANALYSIS OF NATIONAL GREEN ECONOMY STRATEGIES: SUCCESSES, CHALLENGES, AND LESSONS LEARNED

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Abstract

This review article provides a comparative analysis of national green economy strategies, focusing on the successes, challenges, and lessons learned from Germany, Sweden, Azerbaijan, China, and the United States. By examining the integration of environmental sustainability with economic growth, the study illuminates diverse approaches to sustainable development. Methodologically, a systematic review of academic articles, policy documents, and reports from reputable sources was conducted. Key metrics for comparison include policy coherence, institutional frameworks, and technological innovations, investment patterns in renewable energy and green technologies, and socio-economic impacts. The findings underscore the importance of aligning national strategies with global sustainability targets, such as those set by the Paris Agreement and the United Nations Sustainable Development Goals (SDGs). This analysis highlights the varying degrees of success and the unique challenges faced by each country, offering insights into effective policy frameworks and international cooperation necessary for achieving global environmental and socio-economic objectives. The comparative approach provides a nuanced understanding of how national contexts, resources, and socio-economic factors influence green economy strategies and their outcomes, contributing to the evolving discourse on sustainable development.

Keywords: Green Economy, Sustainable Development, Green Energy, National Sustainability, Strategies, SDGs, the comparative.

Introduction: purpose, scope and methodology of the comparative analysis

The purpose of the comparative analysis is to address the complex challenges associated with sustainable development by examining and contrasting national green economy strategies. Understanding these strategies is essential for integrating environmental sustainability with economic growth.

The scope of this literature review includes a comprehensive analysis of green economy strategies implemented by various nations. This involves identifying common themes, success factors, challenges, and lessons derived from existing literature and data. Key metrics used for comparison include policy coherence, institutional frameworks, technological innovations, investment trends in renewable energy, and socio-economic impacts.

Methodologically, the review follows a systematic approach to gather and analyze relevant academic articles, policy documents, and reports from reliable sources such as international

The list of publications can be downloaded on the following website: <https://www.ijhshr.com/>

organizations, government agencies, and peer-reviewed journals. Countries are selected based on their prominence in green economy initiatives, availability of substantial literature, and diversity in geographical and socio-economic contexts. Qualitative methods are employed to synthesize findings and provide a detailed understanding of how theoretical models influence the development and implementation of green economy strategies. This comparative approach enables a structured evaluation of the effectiveness of national policies in countries such as Germany, Sweden, Azerbaijan, China, and the United States, offering insights into how varying contexts shape green economy outcomes.

Definition, principles and importance of the Green Economy

In the context of economic activities, the utilization of finite natural resources to meet infinite human demands forms a dialectical relationship with nature. This interaction intensifies as economic impacts on natural systems proliferate, necessitating a harmonization with ecological imperatives. Acknowledging the futility of combating nature, economies are increasingly adopting environmentally conscious practices, symbolized by the integration of “green” principles amidst the advent of the 4th industrial revolution and in anticipation of the 5th. The concept of “green economy,” initially coined by economists in a 1989 report commissioned by the UK government, now embodies a pivotal trajectory in global human development (Gasimli et al., 2022).

At its core, the green economy promotes a shift towards low-carbon, resource-efficient, and socially inclusive economic systems. This entails restructuring production processes, promoting sustainable consumption patterns, and investing in renewable energy sources and green infrastructure (United Nations Environment Programme, 2011).

The growing scarcity of energy resources highlights the need for biofuels as an alternative energy source. Biofuels, derived from plant or animal materials, come in various forms: liquid (biodiesel, ethanol), solid (straw, wood), and gaseous (biogas, hydrogen). Countries transitioning to renewable energy can benefit economically and, more importantly, environmentally. This shift can help mitigate climate change and improve the health of ecosystems, such as the hydrosphere and atmosphere. Early adoption of renewable energy can also prevent future economic and environmental crises, positively impacting public health (Guliyeva et al., 2022).

One of the Sustainable Development Goals focuses on achieving socioeconomic growth while prioritizing environmental conservation and ecosystem protection, which are closely tied to transportation. Since transportation contributes to 60-65% of environmental damage and 15 kg of oxygen is required to fully ignite 1 liter of fuel, the growing number of vehicles presents challenges for sustainable development. It is crucial to conduct research and develop scientifically backed proposals for a new transportation system. Addressing urban planning issues and learning from global experiences highlights the need for a “green transportation” system (Asadov, 2022).

Sustainable development can only be achieved through the “reconciliation” of economic growth and environmental goals. The term “green growth”, which is a logical continuation of the green economy concept, originated in Asia and the Pacific Ocean. At the Fifth Ministerial Conference on Environment and Development

(MCED) held in Seoul in March 2005, 52 Governments and other stakeholders from Asia and the Pacific agreed to move beyond the rhetoric of sustainable development and embrace the concept of ‘green growth’ (Gasimli et al., 2022).

The fourth industrial revolution’s impact on economic growth is widely debated. Technopessimists believe its peak has passed, limiting future productivity gains, while techno-optimists foresee substantial growth from technological advancements. A pragmatic stance emphasizes technology’s nuanced effects, such as deflationary trends and sustainable consumption benefits. However, global economic challenges like capital misallocation, debt, and ageing populations complicate predictions. An ageing workforce and higher dependency ratios may hinder growth, though retirees’ savings could offset some challenges. Measuring productivity remains difficult due to evolving goods and services. Despite this, optimism about integrating billions into the global economy, addressing environmental issues, and enhancing renewable energy supports GDP growth and climate change mitigation (Schwab, 2016). In addition to Schwab’s approach, Gasimli et al. (2022) assert that economic growth should not be an end in itself but a means to achieve human well-being and sustainability. They stress that efficiency in the green economy requires resource use that ensures inclusivity and avoids environmental degradation. The authors advocate for policies promoting equitable growth, balancing economic development with environmental stewardship, and highlighting the need for a holistic approach to lasting societal welfare and sustainability.

The Fifth Industrial Revolution (5IR) differs from the Fourth (4IR) by emphasizing human-technology collaboration over competition. While the 4IR focused on maximizing technology, often causing tension between human and robotic roles, the 5IR promotes optimizing the complementary strengths of both. This shift prioritizes societal well-being through integrated human-machine cooperation, particularly in retail and services (Noble et al., 2022).

The Rio+20 summit demonstrated a clear link between green economy development and job creation, highlighting the green economy’s role as a catalyst for growth across several sectors. This includes agriculture, fisheries, mining, processing industries (such as light and food industries), renewable energy, and tourism, each of which presents opportunities for generating new employment. Advancements in these sectors also facilitate a more diversified economic strategy, promoting broader economic stability and resilience (Gasimli et al., 2014).

In summary, the green economy embodies a transformative approach to sustainable development, combining environmental care, economic growth, and social equity. Early adopters’ experiences will guide future global strategies and policies.

Overview of SDGs and theoretical frameworks guiding national Green Economy strategies

The Sustainable Development Goals (SDGs) provide a global framework for integrating economic, social, and environmental aspects of development, with a focus on sustainability by 2030.

Key SDGs linked to the green economy include Goal 7, which emphasizes renewable energy and energy efficiency; Goal 8, promoting green jobs and sustainable industries; and Goal 9, encouraging cleaner industrial innovation. Goals 11 and 12 focus on sustainable cities and responsible production, while Goal 13 addresses climate action. Together, these goals support greener, resilient, and inclusive economies.

National green economy strategies are shaped by various theoretical models and frameworks that integrate economic growth with environmental sustainability. The “Green Growth” framework is central, advocating for economic development through investments in renewable energy, sustainable agriculture, and green technologies, thereby achieving both economic prosperity and ecological sustainability (OECD, 2011). The “Circular Economy” model complements this by emphasizing resource efficiency, waste reduction, and the promotion of recycling and reuse, suggesting that closing material loops can reduce environmental impact (Ellen MacArthur Foundation, 2013). Additionally, “Natural Capital Accounting” (NCA) incorporates the value of natural resources into economic decision-making, promoting policies that protect and restore ecosystems, which are vital for sustainable development (Bass et al., 2021).

In summary, national green economy strategies are shaped by theoretical models and frameworks that emphasize sustainable development, economic growth, and environmental protection. These models guide countries in adopting policies and practices that promote green technologies, resource efficiency, and natural capital preservation. By aligning economic activities with ecological sustainability, countries can achieve resilient and inclusive growth while safeguarding natural resources for future generations.

National Green Economy Strategies: Case Studies

Case Study of Germany

Germany’s long-term climate strategy is articulated in the Climate Action Plan 2050, which outlines a pathway to achieve significant reductions in GHG emissions. The plan sets ambitious targets: a 40% reduction by 2020, 55% by 2030, 70% by 2040, and 80-95% by 2050, relative to 1990 levels. Despite substantial progress, Germany faced challenges in meeting its 2020 target, achieving only a 31% reduction by 2018 (International Energy Agency, 2020). In response to the shortfall in meeting the 2020 targets, Germany adopted the 2020 Climate Action Programme, focusing on energy efficiency, building modernization, transport sector reforms, and increased renewable energy generation. More recently, the Climate Action Programme 2030 introduced a phased carbon pricing system for sectors not covered by the EU Emissions Trading System (ETS), increased subsidies for electric vehicles (EVs), and incentives for energy-efficient building renovations (World Economic Forum, 2023).

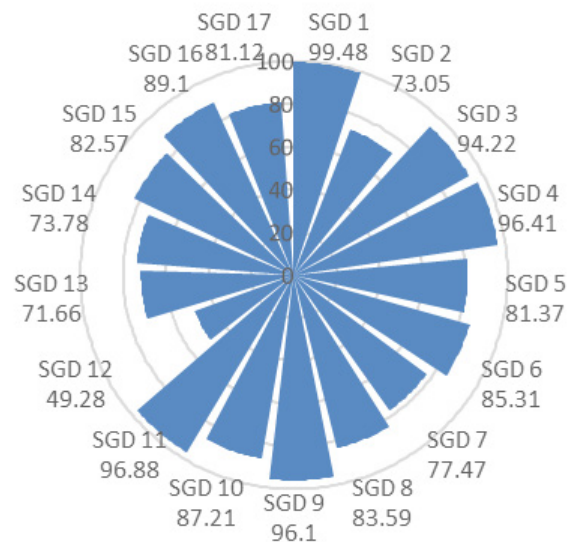
The Sustainable Development Report 2024 for Germany reveals the country’s strong performance in achieving the Sustainable Development Goals (SDGs). Germany ranks 4th out of 167 countries with an overall score of 83.4, surpassing the OECD average (77.2) (refer to Table 1). Figure 1 illustrates the average performance by SDG.

Table 1. Indicators of Germany (Sustainable Development Report 2024)

2024 SDG Index Score	83.45
2024 SDG Index Rank	4.00
Percentage missing values	1.02
International Spillovers Score (0-100)	63.18
Regional Score (0-100)	77.25
International Spillovers Rank	146.00
Regions used for the SDR	OECD

Source: Sachs, J.D., Lafortune, G., Fuller, G. (2024). The SDGs and the UN Summit of the Future. Sustainable Development Report 2024. Paris: SDSN, Dublin: Dublin University Press. doi:10.25546/108572

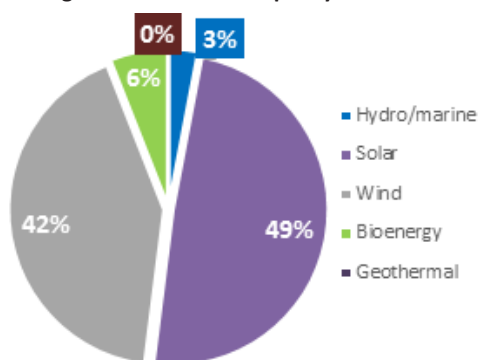
Figure 1: Average performance of Germany by SDG



Source: Sachs, J. D., Lafortune, G., & Fuller, G. (2024). The SDGs and the UN Summit of the Future. Sustainable Development Report 2024. Dublin: Dublin University Press. <https://doi.org/10.25546/108572>

The energy policy priorities in Germany focus on enhancing renewable energy capabilities, increasing renewable power auctions, and accelerating grid planning and offshore wind connections to facilitate the energy transition. (World Economic Forum, 2023). The renewable capacity proportion indicated below in the Figure 2.

Figure 2: Renewable capacity in 2023



Source: (IRENA statistics, 2024 c)

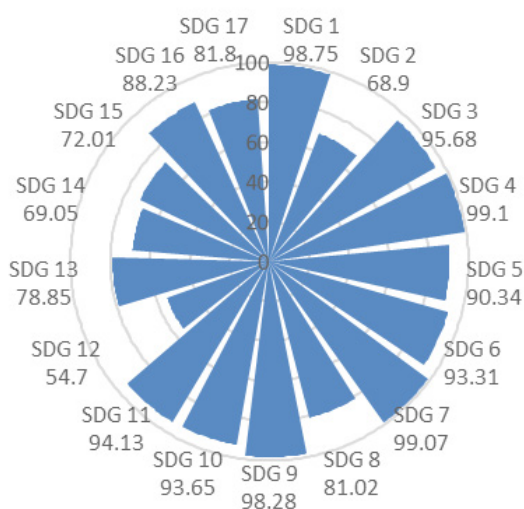
Overall, while Germany is a leader in sustainable development, the report underscores the importance of addressing remaining challenges and enhancing efforts to achieve the 2030 Agenda comprehensively.

Case Study of Sweden

Sweden has been at the forefront of green economy strategies, with a comprehensive legislative framework and ambitious targets to transition towards sustainability. The country's commitment to environmental protection and climate action is evident in its national policies and international engagements.

Sweden's green economy strategies are guided by a robust legislative superstructure created iteratively since 1991. The Climate Act, introduced in 2017, is a key addition to this framework. It sets a target of net-zero emissions by 2045, including offsets, and establishes a Climate Council to monitor progress. The Act also includes a generational target that defines sustainability in terms of physical living conditions, such as health and noise environment, rather than financial metrics like GDP (Green Economy Tracker, 2022). The Sustainable Development Report 2024 for Sweden highlights the country's exemplary performance in achieving the Sustainable Development Goals (SDGs) (Figure 3).

Figure 3: Average performance of Sweden by SDG



Source: Sachs, J. D., Lafortune, G., & Fuller, G. (2024). The SDGs and the UN Summit of the Future. Sustainable Development Report 2024. Dublin: Dublin University Press. <https://doi.org/10.25546/108572>

Sweden ranks 2nd out of 167 countries, with a remarkable overall score of 85.7, which the regional average is 77.2.

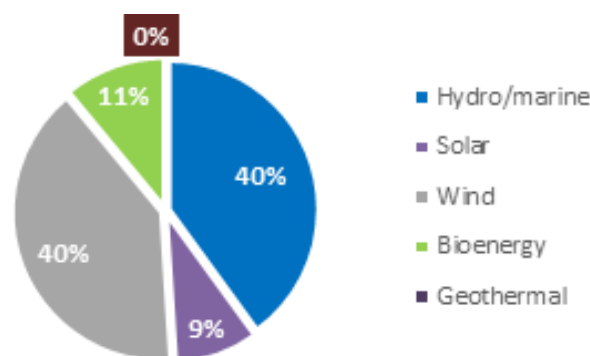
Table 2. Indicators of Sweden (Sustainable Development Report 2024)

2024 SDG Index Score	85.70
2024 SDG Index Rank	2.00
Percentage missing values	3.06
International Spillovers Score (0-100)	63.41
Regional Score (0-100)	77.25
International Spillovers Rank	144.00
Regions used for the SDR	OECD

Source: Sachs, J.D., Lafortune, G., Fuller, G. (2024). *The SDGs and the UN Summit of the Future*. Sustainable Development Report 2024. Paris: SDSN, Dublin: Dublin University Press. doi:10.25546/108572

The Swedish green model emphasizes the integration of business and sustainability. Together with its Nordic neighbors, Sweden has promoted the idea that green growth and competitiveness are not mutually exclusive (Swedish Institute, 2023). The country's green competitiveness has benefited from earlier investments in renewable energy, particularly hydropower (Green Economy Tracker, 2022). Figure 4 shows the renewable capacity of the country.

Figure 4: Renewable capacity in 2023



Source: (IRENA statistics, 2024d)

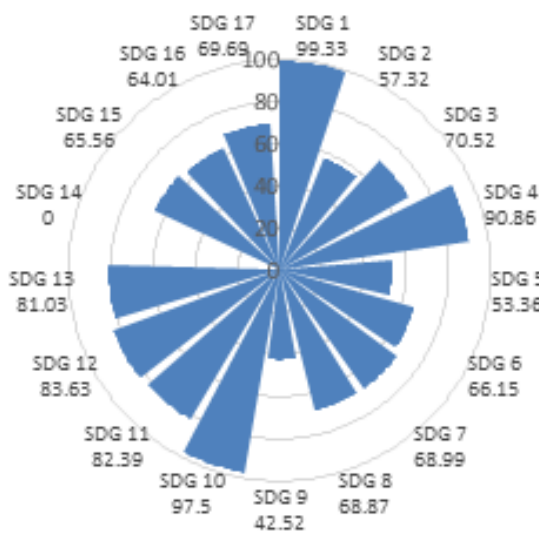
While Sweden has made significant progress in its green economy strategies, it also faces challenges in investing in electricity supply and people to fuel the green transition. The country needs to address issues related to the process for regional and transmission network development, which is currently facing challenges in terms of mapping the current status and identifying bottlenecks. Despite these challenges, Sweden remains committed to its green economy strategies and is poised to continue its leadership in the global transition towards sustainability. By maintaining its ambitious targets, inclusive governance, and innovative measures, Sweden can serve as a model for other countries seeking to achieve a sustainable and prosperous future (Pareliussen & Purwin, 2023).

Case Study of Azerbaijan

Azerbaijan’s green economy strategies are closely aligned with its international commitments. The country ratified the Paris Agreement in 2016, pledging to reduce its greenhouse gas emissions by 35% by 2030 compared to 1990 levels. In line with this commitment, Azerbaijan has developed its Nationally Determined Contribution (NDCs), which was updated in 2022 to reflect more ambitious targets (Green Growth Index, 2023).

The Sustainable Development Report 2024 for Azerbaijan provides a comprehensive overview of the country’s progress towards achieving the Sustainable Development Goals (SDGs) (Figure 5).

Figure 5: Average performance of Azerbaijan by SDG



Source: Sachs, J. D., Lafortune, G., & Fuller, G. (2024). The SDGs and the UN Summit of the Future. Sustainable Development Report 2024. Dublin: Dublin University Press. <https://doi.org/10.25546/108572>

Azerbaijan’s overall SDG performance is positioned above the regional average (70.6), with a score of 72.2, placing it 63rd out of 167 countries (Sachs et al., 2024).

Table 3. Indicators of Azerbaijan (Sustainable Development Report 2024)

2024 SDG Index Score	72.20
2024 SDG Index Rank	63.00
Percentage missing values	7.53
International Spillovers Score (0-100)	91.80
Regional Score (0-100)	70.56
International Spillovers Rank	73.00
Regions used for the SDR	E. Europe & C. Asia

Source: Sachs, J.D., Lafortune, G., Fuller, G. (2024). The SDGs and the UN Summit of the Future. Sustainable Development Report 2024. Paris: SDSN, Dublin: Dublin University Press. doi:10.25546/108572

Azerbaijan is set to host the 29th Conference of the Parties to the United Nations Framework Convention on Climate

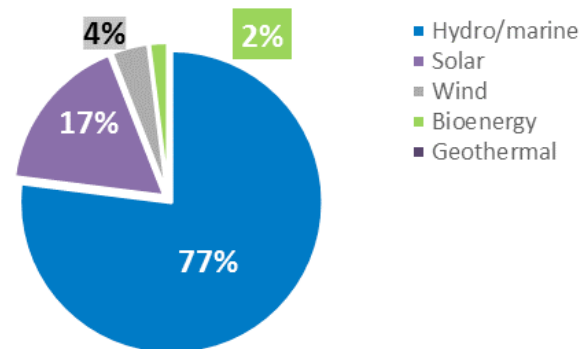
Change (COP29) in Baku in 2024, marking a significant milestone in the country’s commitment to addressing climate change and transitioning to green energy. The country has signed several important green energy agreements with global companies to implement renewable energy projects and transform Azerbaijan into a “green energy hub” in the region (UNCCC COP29).

The potential for solar and wind energy in Azerbaijan is substantial. On the Absheron Peninsula, on the coast of the Caspian Sea, and on the islands in the northwestern part of the water area, there is a great prospect for the application of wind energy facilities. In the west of Azerbaijan, in the Ganja-Dashkasan zone and in the Sharur-Julfa area of the Nakhchivan Autonomous Republic, the average annual wind speed is 3-5 m/second, so it is possible to use medium-power wind power plants in these regions (Gasimli et al., 2022).

Based on operational data for the first seven months of 2024, Azerbaijan’s total electricity production reached 16,269.0 million kWh between January and July. During this period, thermal power plants (TPPs) generated 13,863.7 million kWh, while hydropower plants (HPPs) contributed 1,867.3 million kWh, and other sources produced 538.0 million kWh. Specifically, wind power plants (WPPs) generated 33.3 million kWh, solar power plants (SPPs) produced 352.0 million kWh, and the solid household waste incineration plant accounted for 152.7 million kWh. Consequently, electricity generation from renewable energy sources, compared to the same period last year (1,327.7 million kWh), increased by 1,077.6 million kWh, reaching a total of 2,405.3 million kWh (Ministry of Energy of Azerbaijan, 2024).

According to the IRENA Statistical Profiles, renewable capacity of Azerbaijan illustrated below in the Figure 5.

Figure 5: Renewable capacity in 2023



Source: (IRENA statistics, 2024a)

Moreover, alternative energy initiatives are one of the “Araz Valley Economic Zone” Industrial Park’s primary operations. The regions of Karabakh and East Zangazur hold substantial potential to evolve into economic powerhouses. With a focus on sustainable and inclusive growth, these areas are poised to make significant contributions to both local economies and national development (Guliyeva & Alakbarov, 2024). Besides, another key pillar of the Green Economy is the adoption of green transportation. Asadov (2023) has prepared a schematic form of the development plan of the green transport system in the conditions of sustainable development, emphasizing that the shortest way to the formation

and sustainable development of the green transport system is through the comprehensive consideration of transport, environment and health issues (Asadov, 2023).

Since 2022, Azerbaijan has intensified its focus on implementing megaprojects in the green energy sector. The involvement of major global companies and cooperation with the European Union on green energy exports enhance the prospects of achieving its ambitious goals. Agreements with leading companies from countries like Saudi Arabia, China, the UAE, and the UK aim to increase the production capacity to 28 GW, aiding in portfolio diversification and sustainable development. This green energy transition promises ecological, political, economic, and social benefits for Azerbaijan and its neighboring regions (Gasimli et al., 2024).

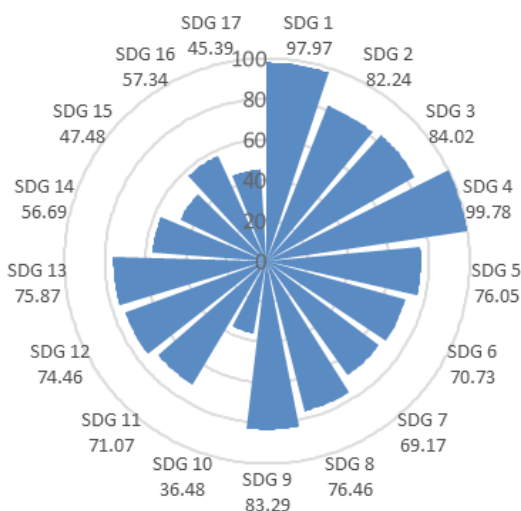
While challenges remain, the opportunities for growth and collaboration are substantial. Continued investment in green technologies, international partnerships, and robust regulatory frameworks will be essential for Azerbaijan to achieve its green economy objectives.

Case Studies of China

China's 14th Five-Year Plan (2021-2025) for National Economic and Social Development, approved in March 2021, highlights the country's commitment to high-quality, green development. Building on the achievements of the previous plan, the 14th Five-Year Plan aims to reduce carbon emissions, promote innovation, and pursue a dual circulation growth strategy that relies more on domestic consumption and technological self-reliance. By implementing these measures, China aims to transition to a more sustainable, inclusive, and technologically advanced economy while addressing pressing social and environmental challenges. The 14th Five-Year Plan represents a significant step forward in China's pursuit of high-quality development and its commitment to global climate action (Asian Development Bank, 2021).

According to the Sustainable Development Report 2024, China has made significant strides in its pursuit of the Sustainable Development Goals (SDGs), though challenges remain in several areas.

Figure 7: Average performance of Sweden by SDG



Source: Sachs, J. D., Lafortune, G., & Fuller, G. (2024). The SDGs and the UN Summit of the Future. Sustainable Development Report 2024. Dublin: Dublin University Press. <https://doi.org/10.25546/108572>

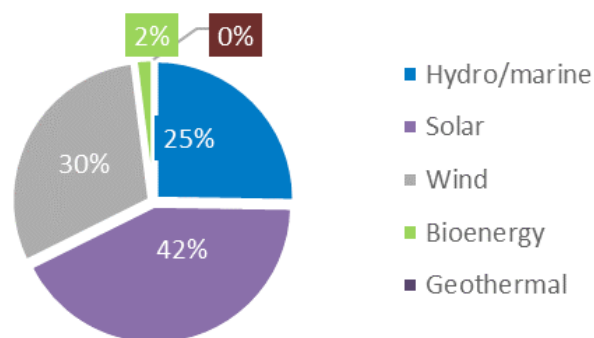
China's overall SDG performance score is 70.9 (Sachs et al., 2024) (Table 4) and the proportion of the renewable capacity indicated in the Figure 12.

Table 4. Indicators of China (Sustainable Development Report 2024)

2024 SDG Index Score	70.85
2024 SDG Index Rank	68.00
Percentage missing values	8.16
International Spillovers Score (0-100)	90.32
Regional Score (0-100)	66.53
International Spillovers Rank	81.00
Regions used for the SDR	East & South Asia

Reference: Sachs, J.D., Lafortune, G., Fuller, G. (2024). The SDGs and the UN Summit of the Future. Sustainable Development Report 2024. Paris: SDSN, Dublin: Dublin University Press. doi:10.25546/108572

Figure 12: Renewable capacity in 2023



Source: (IRENA statistics, 2024b)

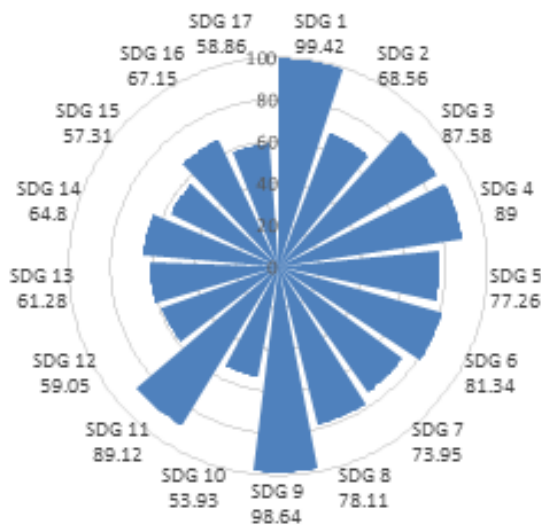
Overall, China's progress towards the SDGs is mixed, with notable achievements in some areas but persistent challenges in others. Continued efforts, policy reforms, and international cooperation will be essential for the country to fully realize its sustainable development aspirations (Sachs et al., 2024).

Case Studies of the United States

The United States has implemented a range of federal and state-level green economy initiatives aimed at fostering sustainable development, reducing greenhouse gas emissions, and promoting renewable energy adoption.

According to the Sustainable Development Report 2024, the United States ranks 46th out of 167 countries with an overall score of 74.4, the OECD average is 77.2 (refer to Table 5). Besides, the average performance by SDG is illustrated in the Figure 7.

Figure 7: Average performance of the USA by SDG



Source: Sachs, J. D., Lafortune, G., & Fuller, G. (2024). The SDGs and the UN Summit of the Future. Sustainable Development Report 2024. Dublin: Dublin University Press. <https://doi.org/10.25546/108572>

Table 5. Indicators of the USA (Sustainable Development Report 2024)

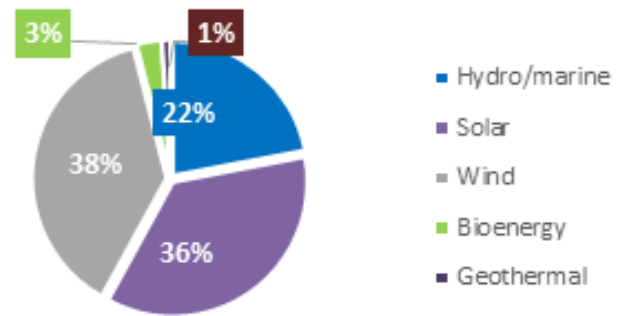
2024 SDG Index Score	74.43
2024 SDG Index Rank	46.00
Percentage missing values	2.04
International Spillovers Score (0-100)	61.85
Regional Score (0-100)	77.25
International Spillovers Rank	148.00
Regions used for the SDR	OECD

Source: Sachs, J.D., Lafortune, G., Fuller, G. (2024). The SDGs and the UN Summit of the Future. Sustainable Development Report 2024. Paris: SDSN, Dublin: Dublin University Press. doi:10.25546/108572

State governments in the U.S. have played a critical role in advancing green economy initiatives tailored to regional needs and priorities. California, for instance, has implemented the California Global Warming Solutions Act (AB 32), establishing a comprehensive cap-and-trade program to limit greenhouse gas emissions across sectors. This initiative has not only driven emission reductions but also generated revenue reinvested in renewable energy projects and energy efficiency programs (CARB). Similarly, states like New York and Massachusetts have adopted ambitious renewable portfolio standards (RPS) requiring utilities to source a significant portion of their electricity from renewable sources by specific target years, thereby stimulating growth in the renewable energy sector (Mass.gov; NYSERDA).

According to the Green Growth Index 2023, the United States, leading the Americas region, demonstrates robust green growth performance with a score of 63.72, placing it 28th globally (Lilibeth A. Acosta et al., 2023). Moreover the major renewable capacity accounted for wind and solar, 38% and 36% respectively (IRENA statistics, 2024e) (Figure 4).

Figure 4: Renewable capacity in 2023



Source: (IRENA statistics, 2024e)

Benefits of the Analyzed Countries' Green Economy Strategies and Practices for Other Countries

The green economy strategies of Germany, Sweden, Azerbaijan, China, and the United States present valuable insights and practical approaches for nations pursuing sustainable development. Each country's strategy is tailored to its specific socio-economic conditions, resource availability, and environmental challenges, offering diverse models for integrating economic growth with environmental sustainability. By examining these cases, other nations can extract key practices, adapt them to their local contexts, and promote international collaboration to address global environmental issues.

A comparative analysis of these countries highlights several important lessons. Firstly, investment in innovation and green technology is essential. The progress seen in these nations shows that technological advancements and innovation drive the green economy forward. Promoting research and development, supporting startups, and facilitating the transfer of technology are effective ways to speed up the green transition. Secondly, public-private partnerships play a critical role. The private sector's involvement in funding and implementing sustainable solutions is a consistent feature in these countries. By creating policies that encourage private sector engagement through incentives and regulatory support, governments can leverage business resources to advance green economy objectives. Lastly, international cooperation and knowledge exchange are crucial for enhancing green strategies globally. Through sharing best practices, engaging in climate agreements, and participating in global initiatives, countries can strengthen their green economy efforts and address climate change collectively.

Conclusion

This review article has examined the green economy strategies of Germany, Sweden, Azerbaijan, China, and the United States, highlighting their successes, challenges, and best practices. Germany's Energiewende emphasizes long-term political commitment and substantial investments in renewable energy. Sweden's comprehensive sustainability policies showcase the effectiveness of integrated frameworks and societal support.

Azerbaijan's transition efforts underscore the importance of international cooperation and energy diversification. China's extensive renewable energy investments and technological advancements demonstrate the impact of strong governmental directives. The diverse approaches within the United States reveal the potential of decentralized policy frameworks and market-based mechanisms.

Despite these achievements, several research gaps persist. There is a critical need for longitudinal studies to evaluate the long-term impacts of green economy policies, as short-term results often leave uncertainties about sustainability and scalability. Cross-sectoral assessments are essential to understand the interconnected impacts of green economy initiatives, ensuring a holistic approach to sustainable development. Enhancing international cooperation and knowledge transfer, as well as understanding the role of financial systems and green finance, are also vital areas for future research.

Addressing these research gaps will provide a more comprehensive understanding of green economy strategies and their effectiveness, aiding policymakers in developing more inclusive and sustainable approaches. This comparative analysis underscores the necessity of adapting green economy strategies to national contexts, ensuring a balanced approach to sustainability and economic development.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

The authors confirm being the sole contributor of this work and have approved it for publication.

Peer-review

Externally peer-reviewed.

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Conflict of interest

No potential conflict of interest was reported by the author(s).

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