

The Role of Green Investment Policies in Promoting Economic Diversification in the Gulf Countries

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Abstract

Gulf countries, including Saudi Arabia, the United Arab Emirates (UAE), and Qatar, face economic challenges due to their high dependence on oil and gas exports. To address oil price volatility and support the transition to a sustainable economy, they have implemented green investment policies as part of their economic diversification strategy. The study examines the effectiveness of green investment in boosting the growth of non-oil and gas economies through policies such as Saudi Vision 2030, UAE Net Zero 2050, and Qatar National Vision 2030. The results show that green investment has improved the region's economic competitiveness by attracting foreign direct investment (FDI), creating new industrial sectors, and accelerating innovation in renewable energy. Despite this, various challenges are still faced, including limited infrastructure, dependence on imported technology, and resistance from the oil and gas industry. In addition, geopolitical dynamics and fiscal policies that have not been fully supportive are obstacles to the implementation of green investment. The study confirms that green investment has the potential to become a key pillar in the economic diversification of Gulf countries if supported by a more structured strategy, research and development (R&D) capacity building, and incentive policies that encourage private sector involvement and international cooperation.

Keywords: Economic diversification, green investment, gulf country.



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INTRODUCTION

The Gulf states, comprising Saudi Arabia, the United Arab Emirates (UAE), Qatar, Kuwait, Bahrain, and Oman, have over the past few decades relied on oil and gas exports as a major pillar of their economies. The hydrocarbon sector accounts for more than 70% of the revenues of Gulf Cooperation Council (GCC) countries, making it the main source of gross domestic income (IMF, 2021). This dependence creates significant vulnerability to global oil price volatility, changes in international energy policy, and increasing pressures on environmental policies. Oil price fluctuations in 2014–2016, for example, led to a loss of up to \$350 billion in revenue in two years, which had a direct impact on domestic development programs and strained state budgets (WB, 2017). The COVID-19 pandemic further exacerbated this situation with a decline in global oil demand that caused oil prices to fall to negative levels in April 2020 (EIA, 2020). This makes it clear that the oil-based economic development model is no longer reliable to ensure long-term economic growth in the Gulf region.

In facing these challenges, Gulf countries have begun to adopt economic diversification strategies, one of which is through green investment. Saudi Arabia launched Saudi Vision 2030 which targets reducing dependence on oil by developing renewable energy, encouraging investment in green technology, and building new economic sectors (Waheed, 2022). The UAE implements UAE Net Zero 2050, which commits to invest 160 billion US dollars in clean energy by 2050, with a focus on the development of green hydrogen and solar power (Alyousef et al., 2025). Qatar, through Qatar National Vision 2030, seeks to achieve net zero emissions by 2050 and increase solar energy capacity to 800 MW by 2024 (QE, 2022). This initiative marks a significant transition towards more environmentally friendly economic policies.

However, despite the green investment policies that have been implemented, their effectiveness in encouraging economic diversification is still up for debate. Some of the key challenges faced by Gulf countries in implementing these policies include high dependence on energy subsidies, limited green infrastructure, and lack of private sector involvement in sustainable investment (Aliedan et al., 2023). In addition, the complexity of energy transition policies is also influenced by international geopolitical and political economic factors, which create its own dynamics in the implementation of green investment (Ameer et al., 2021). Therefore, a more in-depth analysis is needed on the extent to which this policy is able to create a more diverse and sustainable economic structure in the Gulf region.

In understanding the relationship between green investment policies and economic diversification, this study draws on some of the key theoretical frameworks in international political economy. The International Political Economy Approach put forward by Montambault Trudelle (2024) highlights that economic policy is not only influenced by market efficiency but also by the political interests of the state (Montambault Trudelle, 2024b). In the context of the Gulf countries, green investment is not just an economic effort, but also a strategy of international energy and political diplomacy. For example, Saudi Arabia is using investments in renewable energy to strengthen its influence in global energy geopolitics, reduce its dependence on oil exports, and build an image as a leader in the energy transition (Krane, 2020b).

The economic transformation of the Gulf countries—Saudi Arabia, the United Arab Emirates (UAE), and Qatar—requires a nuanced theoretical approach that accounts for both the structural challenges of resource dependence and the potential of green investment as a driver of diversification. Three key theories—Resource Curse Theory, Ecological Modernization Theory, and Institutional Theory—offer valuable perspectives in understanding this transition.

Resource Curse Theory provides a useful lens to examine why Gulf economies have historically struggled with diversification. Countries endowed with abundant natural resources, particularly oil and gas, often fall into the trap of over-reliance on these sectors, which in turn stifles innovation and economic complexity (Ross, 1999). In the case of the Gulf, the volatility of global oil markets has exposed the inherent risks of such dependency. The push for green investment, therefore, can be seen as an effort to break free from this pattern, fostering new industries in renewable energy and reducing the economic risks associated with fossil fuel reliance.

At the same time, Ecological Modernization Theory helps explain why and how Gulf countries are shifting toward sustainability without necessarily compromising economic growth. This theory suggests that environmental responsibility and economic development are not mutually exclusive; rather, modernization and technological advancement can drive sustainability (Redclift, 2010). Initiatives like Masdar City in Abu Dhabi exemplify this approach, demonstrating how strategic investment in green technology can attract global capital, stimulate innovation, and create new economic sectors while maintaining a commitment to sustainability.

However, transitioning to a green economy is not just about financial investment; it also requires strong institutional support. Institutional Theory, as articulated by North (1990), emphasizes the role of governance structures, regulatory frameworks, and institutional capacity in shaping economic outcomes (North, 1990). While Gulf countries have made substantial commitments to green investment through policies like Saudi Vision 2030 and UAE Net Zero 2050, their success hinges on the effectiveness of domestic institutions. Challenges such as regulatory inconsistencies, bureaucratic inertia, and resistance from entrenched fossil fuel interests highlight the importance of institutional reform in ensuring the long-term viability of these initiatives.

Bringing these theories together, we see that the Gulf's green investment efforts are shaped by a delicate interplay of economic history, technological ambition, and institutional readiness. While there are promising signs of progress, achieving meaningful and lasting economic diversification will require more than just capital—it will demand bold policy decisions, investment in human capital, and a rethinking of long-standing economic structures. The coming years will reveal whether these nations can successfully navigate this transition, but one thing is clear: their approach to green investment will not only shape their own economies but also influence the broader trajectory of global energy markets.

Although a growing body of literature has explored economic diversification in the Gulf region, most studies have focused primarily on macro-level sustainability frameworks or energy transition narratives, without isolating the operational impact of green investment policies as strategic instruments of structural transformation. For instance, Al-Sarihi (2019) and Krane (2020)

emphasized political economy dynamics, climate diplomacy, and governance frameworks underpinning Gulf energy reforms (Al-Sarihi, 2019; Krane, 2020a). However, they offer limited insight into how specific green investment mechanisms—such as fiscal incentives, innovation financing, or ESG regulatory frameworks—translate into tangible diversification of the economic base beyond hydrocarbons.

Recent empirical studies have begun to address this gap, yet important limitations persist. For example, AlnafrAh (2024) examine the role of fiscal stability in enabling green transition in the GCC, but focus largely on macro-fiscal consolidation without disaggregating investment policy tools (AlnafrAh, 2024). Similarly, Al-Refai (2020) analyze ESG reforms in relation to economic performance, yet do not explicitly link these frameworks to sectoral diversification outcomes (Al-Refai, 2020). The study by Marashdeh (2025) makes significant strides in connecting green finance to financial development, yet lacks a policy-level breakdown across national contexts (Marashdeh, 2025). Meanwhile, Beutel (2021) offer a comparative analysis between GCC and Norway’s diversification strategies but adopt a descriptive lens, overlooking regulatory capacity and implementation dynamics (Beutel, 2021). Lastly, Mahmood et al. (2022) highlight the role of fiscal and monetary policy in environmental goals but do not address how such levers shape private sector incentives in the green economy (Mahmood et al., 2022).

This study addresses this under-explored intersection by examining how Gulf countries—specifically Saudi Arabia, the UAE, and Qatar—have operationalized green investment policies as levers of economic diversification. Rather than merely echoing normative commitments to net-zero goals, the analysis focuses on how fiscal tools, state-led investments, and public-private partnerships are mobilized in practice. Through a policy-oriented narrative synthesis supported by bibliometric visualization (via VOSviewer), this paper contributes a novel analytical lens that clarifies the causal mechanisms linking green investment to diversification outcomes, while highlighting implementation challenges and cross-country divergences within the GCC.

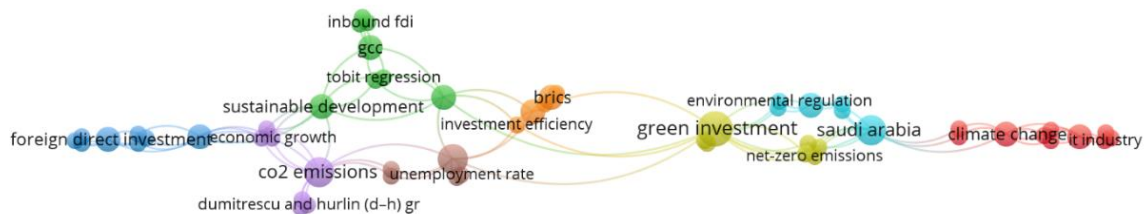


Figure 1. VOSviewer Network Visualization Analysis

Source: Author Analysis, 2025

Thus, this study aims to provide a data-driven analysis of the extent to which green investment policies have contributed to the economic diversification of Gulf countries and the factors that affect their effectiveness. By examining policy dynamics, economic incentives, and challenges faced, this study is expected to provide new insights for the development of more effective green economic policies in the Gulf region and contribute to academic discourse on international political economy and the global energy transition.

METHOD

This study uses a qualitative method that integrates policy analysis and economic data interpretation to explore the relationship between green investment policies and economic diversification in the Gulf countries. The selection of this method allows for a deeper understanding of the policy dynamics, implementation challenges, and economic impacts that emerge from the green investment agenda in resource-dependent states like Saudi Arabia, the United Arab Emirates (UAE), and Qatar. These three countries were selected due to their significant and varied energy transition initiatives, making them suitable cases for comparative analysis (Yin, 2016).

Green investment policies are examined through the lens of policy studies and narrative policy analysis, drawing on primary sources such as government strategies and national visions, alongside reports from global institutions like the International Monetary Fund (IMF), United Nations Conference on Trade and Development (UNCTAD), and the International Energy Agency (IEA). This study also incorporates the policy transfer framework to investigate how international models of green investment are adopted, adapted, or resisted within distinct national contexts (Dolowitz & Marsh, 2000). For instance, Saudi Arabia's emphasis on mega-projects like NEOM, the UAE's public-private innovation model through Masdar City, and Qatar's gradualist approach with a focus on carbon capture illustrate diverse trajectories in policy experimentation across the region.

The data collected consists of secondary sources including journal articles and official related-institutions' reports. Key indicators such as renewable energy's contribution to GDP, foreign direct investment (FDI) trends in the green sector, and shifts in fossil fuel dependency were critically assessed. To support contextual depth, this study also reviews flagship case studies like the development of Masdar City, Saudi Arabia's investment in green hydrogen, and Qatar's Al-Kharsaah solar facility.

For data analysis, the study applies Miles and Huberman's interactive model of qualitative analysis, which involves three core stages: data reduction, data display, and conclusion drawing/verification (Dull & Reinhardt, 2014). In the final stage, findings were verified through an iterative peer debriefing process to ensure interpretative consistency and methodological rigor. This multi-layered approach ensures that the study not only offers a robust empirical foundation but also contributes meaningful insights into how green investment functions as a transformative tool for economic diversification in the Gulf context.

RESULTS AND DISCUSSION

Green Investment Trends in the Gulf Countries

Green investment has become an important part of the Gulf economies' economic strategies as global pressure mounts to reduce carbon emissions and diversify economies that have relied on oil and gas. Saudi Arabia, the United Arab Emirates (UAE), and Qatar have adopted a variety of policies to attract green investments, albeit with different approaches (Montambault Trudelle, 2024a).

Saudi Arabia has set ambitious targets through Saudi Vision 2030, which includes increased investment in the renewable energy sector, the development of large-scale projects such as NEOM, and sustainability-based economic diversification. The Public Investment Fund (PIF) has allocated billions of dollars to green energy projects, with a primary focus on solar power and green hydrogen (Abdullah et al., 2024). Saudi Arabia has committed to increasing its renewable energy capacity to 58.7 GW by 2030, with investments reaching more than USD 50 billion in green energy projects. In addition, the Saudi Green Initiative has been introduced to support a range of sustainability projects that include reforestation and energy efficiency (Alyousef et al., 2025).

The UAE has been a pioneer in green energy development in the Gulf region through initiatives such as Masdar City, which was designed to be the world's first sustainable city. The UAE's green energy policy is also reflected in the UAE's Net Zero 2050 program, which aims to achieve net zero emissions by 2050 through major investments in renewable energy and carbon reduction technologies. Data from the World Bank (2022) shows that the UAE has allocated more than USD 160 billion for renewable energy development and has managed to increase the contribution of renewable energy in its energy mix by 20% by 2023. In addition, Abu Dhabi Future Energy Company (Masdar) has become one of the largest investors in global green energy projects, with projects in more than 40 countries (Waheed, 2022).

Qatar, although still heavily dependent on liquefied natural gas (LNG) exports, has begun investing in green energy projects as part of Qatar National Vision 2030. Qatar is focusing on the development of solar energy and carbon capture and storage (CCS) technology to reduce the environmental impact of its energy industry (IEA, 2023b). A report from the International Energy Agency (2023) reveals that Qatar has invested more than USD 30 billion in CCS and solar energy projects, with a target of 5 GW of renewable energy capacity by 2030 (Nikbakht et al., 2023). In addition, the construction of the Al-Kharsaah solar facility in Qatar, which has a capacity of 800 MW, marks a major step in the country's energy transition (Qin & Imran, 2024).

Statistics from the World Bank and IMF show that the growth of green investment in the Gulf countries has increased in the last five years. For example, the IMF report (2023) shows that investment in the renewable energy sector in Saudi Arabia has increased by 25% since 2020, while the UAE and Qatar recorded growth of 18% and 12% respectively (IMF, 2023). This data reflects an increasing commitment of Gulf countries to make the transition to a more sustainable economy. In addition, the Global Energy Review report (2023) shows that Gulf states have attracted more than USD 500 billion in foreign direct investment (FDI) in green energy projects since 2018 (Kouwenberg & Zheng, 2023).

In addition to the growth of green investment, Gulf countries are also seeking to strengthen regulations and policies that support the energy transition. Saudi Arabia, for example, has issued a variety of fiscal incentives to attract green energy investors, including tax reductions for companies investing in renewable energy projects. The UAE has implemented a carbon trading mechanism and incentive program for companies that contribute to net zero emissions targets (IRENA, 2023c). Qatar, on the other hand, has adopted strict standards in the LNG industry to ensure higher energy efficiency and reduce its carbon footprint.

However, despite the trend of green investment showing significant growth, there are still a number of challenges that Gulf countries face in developing the sector. One of the main challenges is the limited infrastructure and dependence on technology from developed countries. About 70% of green energy technology used in the Gulf countries still relies on imports from Europe, the United States, and China (Nan et al., 2025). This shows that although investment in green energy is increasing, a more holistic strategy is still needed to strengthen domestic capacity in clean energy technologies.

Furthermore, the resistance of the oil and gas industry to green policies is also an obstacle in the development of renewable energy in the region. Gulf states, which have traditionally relied on oil and gas exports as the country's main source of revenue, face a dilemma between maintaining conventional energy industries or accelerating the transition to a green economy. This is because the shift to green energy could lead to a 30% decline in revenues from the oil and gas sector in the next two decades if not balanced with a strong economic diversification strategy (IEA, 2022).

However, opportunities for green investment in the Gulf countries remain wide open. The prospect of regional and international cooperation in supporting the green energy transition is becoming increasingly real. Saudi Arabia, the UAE, and Qatar have signed various agreements with the European Union, China, and the United States to increase investment in clean energy technologies. This partnership is expected to accelerate the adoption of green technology and strengthen the competitiveness of the Gulf region in the renewable energy sector (Nikbakht et al., 2023).

Impact on Economic Diversification

In recent decades, Gulf states have made great efforts to reduce their dependence on the oil and gas sector through ambitious economic diversification policies. One of the key strategies in this effort is green investment, which aims not only to support the clean energy transition, but also to create a sustainable new economic sector (WB, 2023). Green investment has played an important role in accelerating economic diversification by driving the growth of the renewable energy sector, developing the non-oil and gas industry, and introducing attractive fiscal incentives for domestic and international investors (Alyousef et al., 2025).

One of the main impacts of green investment on economic diversification is the increase in the renewable energy sector. The Gulf states, which have long been known as major exporters of oil and gas, are starting to develop a range of renewable energy projects as part of their diversification strategy. Saudi Arabia, for example, has launched various ambitious projects in

the green energy sector, such as NEOM, which is a futuristic city based on clean energy with investments of up to USD 500 billion (Alyousef et al., 2025). The project includes the development of solar power and green hydrogen as a major energy source. This is partly demonstrated by Saudi Arabia's renewable energy capacity increasing to 58.7 GW in the past decade, with most of the investment flowing into solar and wind projects (Sobaih et al., 2025).

The United Arab Emirates (UAE) has also been a pioneer in green energy investment through the Masdar City project, a city designed entirely on renewable energy and low carbon efficiency. The UAE has allocated more than USD 160 billion for green energy development and is targeting a 50% contribution of renewable energy in the national energy mix by 2050 (Abdullah et al., 2024). The UAE's investment in green energy has created thousands of jobs in the renewable energy technology and sustainable construction sectors. With the increasing demand for labor in the green energy sector, there is great potential for the growth of related service sectors, such as energy technology research and development as well as workforce education and training (IRENA, 2023a).

Qatar, while still heavily dependent on liquefied natural gas (LNG) exports, has also taken significant steps in supporting green investment as part of Qatar National Vision 2030. The Qatari government has developed various renewable energy projects, including the construction of the Al-Kharsaah solar facility with a capacity of 800 MW (Al-Hitmi, 2008). Qatar has invested more than USD 30 billion in green energy projects, including carbon capture and storage (CCS) technology that aims to reduce carbon emissions from its conventional energy industry. With increasing investment in green energy, Qatar is starting to see growth in new sustainability-based economic sectors, including the development of smart infrastructure and environmental technology industries (WB, 2023).

Moreover, to the improvement of the renewable energy sector, fiscal policies and tax incentives also play an important role in attracting green investment to the Gulf countries. Saudi Arabia, for example, has introduced various fiscal incentives to encourage domestic and foreign companies to invest in green energy projects (Sobaih et al., 2025). These incentives include tax reductions, renewable energy subsidies, and easy access to land for sustainability projects. This policy has contributed to a 30% increase in foreign direct investment (FDI) in the green energy sector in the past five years (Alyousef et al., 2025).

The UAE has also implemented fiscal policies that support green investment through carbon trading mechanisms and incentive programs for companies that contribute to net zero emissions targets. The implementation of carbon trading mechanisms in the UAE has improved industrial efficiency and reduced carbon emissions by 15% in the past decade (Montambault Trudelle, 2024a). In addition, Abu Dhabi Future Energy Company (Masdar) has collaborated with various multinational companies in developing innovative clean energy technologies, creating an increasingly diverse business ecosystem outside the oil and gas sector (Masdar, 2023).

In Qatar, fiscal policies that support green investment focus more on the development of low-carbon technologies and incentives for industries that adopt sustainable practices (Ameer et al., 2021). The Qatari government has allocated special funds to support start-ups engaged in green energy and environmental efficiency. This shows that fiscal policy not only encourages the

growth of green investment, but also contributes to economic diversification by creating opportunities for new sustainability-oriented business sectors.

The concrete impact of green investment on economic diversification can be seen from several case studies of major green energy projects in the Gulf countries. One of the most prominent examples is the NEOM project in Saudi Arabia, which serves not only as a green energy hub, but also as an economic zone designed to attract global investment in various sectors, including technology, tourism, and the sustainable manufacturing industry. NEOM is projected to create more than 380,000 new jobs in the next two decades, mostly in the high-tech and renewable energy sectors (Abid, 2025). In the UAE, Masdar City has become a model for sustainable regional development, attracting research institutions and green technology companies to invest in innovative projects. Masdar City has attracted more than USD 22 billion in foreign investment and created more than 50,000 jobs in the clean energy and environmental technology sectors (Masdar, 2023).

It proves that green investment not only contributes to environmental sustainability, but also opens up new sustainable economic opportunities. As for Qatar, with its net-zero emissions strategy, it has focused on developing low-carbon technologies and large-scale green energy projects to reduce its economic dependence on LNG. The construction of the Al-Kharsaah solar facility as well as the CCS project funded by Qatar Petroleum demonstrate how the country is using green investment as a means to diversify its economy. The initiative is expected to increase the green energy sector's contribution to Qatar's GDP by up to 10% in the next two decades, creating thousands of jobs in the energy technology and sustainability sectors (QE, 2023). Thus, green investment in the Gulf region has had a significant impact on the diversification of the Gulf economies by accelerating the growth of the renewable energy sector, introducing attractive fiscal incentives, and creating new opportunities in various sectors of the economy. Despite still facing challenges, such as reliance on imported technology and resistance from the oil and gas industry, the prospects for green investment in the region remain promising.

Challenges and Obstacles to Green Investment Implementation in the Gulf

One of the main challenges in the implementation of green investment in the Gulf countries is the limited infrastructure that supports the development of renewable energy. The region's energy infrastructure is still dominated by fossil fuel-based facilities, which have been in operation for decades and require significant investment to switch to green technologies. According to an International Energy Agency report, more than 70% of the installed energy capacity in the Gulf region is still oil and gas based, with relatively small renewable energy capacity (IEA, 2023a).

Furthermore, the development of green energy infrastructure requires advanced technologies that are still largely dependent on developed countries such as the United States, China, and the European Union. This dependency increases investment costs and can slow down technology adoption due to constraints in technology transfer and limited skilled labor in operating green energy systems (SWP, 2025). For example, the NEOM project in Saudi Arabia that relies on green hydrogen energy is still heavily reliant on imported technology from Germany and Japan, which increases the challenge of building a self-sustaining green industry (NEOM, 2023a).

Infrastructure limitations are also seen in the capacity of the power grid in some Gulf countries, which are not yet fully equipped to accommodate large-scale renewable energy. For example, unstable solar and wind power require efficient energy storage systems and flexible electricity distribution networks, but many countries in the region still rely on rigid and inefficient power grid infrastructure. This causes obstacles in the integration of green energy into the national system (IRENA, 2023b).

Furthermore, the lack of investment in research and development (R&D) of green energy technology is a major obstacle in creating local innovations. Gulf countries have shown interest in green energy development, but the allocation of funds for research still lags behind developed countries. Without significant investment in technological innovation, the reliance on foreign technology imports will continue, ultimately increasing project costs and slowing down the green energy transition (SWP, 2025).

As a region historically dependent on oil and gas exports, the Gulf states face significant resistance from the conventional energy sector in implementing green investment policies. The oil and gas industry has become a major pillar of the economy in countries such as Saudi Arabia, the United Arab Emirates (UAE), and Qatar, which rely on oil export revenues to finance national development projects, moreover, the oil and gas sector still accounts for more than 70% of national revenues in most Gulf countries (IEA, 2023a).

This resistance has come in many forms, from energy subsidy policies that continue to support fossil fuels, to lobbying from big oil companies that oppose the switch to renewable energy. For example, Saudi Aramco and Qatar Petroleum, two of the largest energy companies in the region, have expressed their concerns over the potential negative impact of green policies on the profitability of the oil and gas industry (Earth, 2024). As a result, many energy transition policies in the Gulf countries are still gradual and face obstacles in their implementation.

In addition, there are concerns that an overly rapid transition to green energy could lead to economic and social instability, especially in terms of job losses in the oil and gas sector. To address these challenges, a diversification strategy is needed that can accommodate the workforce from the conventional energy sector to the green sector through more inclusive economic training and incentive programs (WEF, 2023).

The government's role in balancing the interests of the oil industry and the energy transition is a key factor in the success of green policies. In some Gulf countries, contradictory policies often slow the progress of green investment. For example, while the UAE has committed to achieving net zero emissions by 2050, the country is also steadily increasing its oil and gas export capacity in the short term. This reflects the dilemma faced by the government in maintaining economic stability while encouraging energy transformation (Montambault Trudelle, 2024a).

Geopolitical factors play an important role in determining the direction of green investment in the Gulf countries. The region is one of the world's energy hubs, with close trade ties with major countries such as the United States, China, and the European Union. Changes in

global energy policy as well as the dynamics of international relations may affect the commitment of Gulf countries to invest in the green sector (Benlaria & Almawishir, 2025).

One obvious example is the geopolitical tensions arising from green energy policies in Europe, which seeks to reduce its dependence on oil and gas imports from the Middle East. The European Union has implemented a Green Deal policy that aims to achieve net zero emissions by 2050, which indirectly reduces demand for oil and gas from Gulf states (Montambault Trudelle, 2024a). This creates new challenges for Gulf states that must find alternative markets or accelerate their economic diversification.

Moreover, the Gulf states' reliance on foreign investment in green energy projects can also be a weak point in their energy transition strategies. For example, large renewable energy projects in the UAE and Qatar often involve investment from foreign companies, which means that changes in foreign policy or diplomatic tensions can affect the viability of the project. Political tensions between Saudi Arabia and several Western countries in recent years have affected investors' confidence in the stability of energy policy in the region (Qin & Imran, 2024). On the other hand, cooperation with China in the Belt and Road Initiative (BRI) initiative has provided opportunities for Gulf countries to gain investment in green technology. China has invested heavily in green energy projects in the UAE and Saudi Arabia, especially in the development of solar power and green hydrogen. However, over-reliance on one economic partner can also pose risks in the long run (Montambault Trudelle, 2024a).

In the context of global geopolitics, green investment policies in the Gulf countries are also influenced by the dynamics of the global energy market. When oil prices are high, Gulf countries tend to delay or reduce investment in green energy because revenues from oil remain high. Conversely, when oil prices fall, the pressure to diversify the economy becomes greater, but limited funds can hinder the realization of green energy projects (Montambault Trudelle, 2024a).

Future Opportunities in Green Investment in the Gulf States

Gulf states continue to accelerate the transition to a green economy as part of their economic diversification strategies. While challenges remain, the great opportunities for green investment in the region are increasingly open, driven by technological innovation, international cooperation, and attractive economic incentives for investors. New trends in renewable energy, integration of environmental policies with the industrial sector, as well as positive impacts on economic and social stability are key factors driving optimism about the future of green investment in the region (IRENA, 2023b).

One of the biggest opportunities in green investment in the Gulf countries is the growing technological innovation and energy efficiency. Countries such as Saudi Arabia, the United Arab Emirates (UAE), and Qatar have invested billions of dollars in clean energy research and development, with a primary focus on green hydrogen, solar power, as well as energy storage technologies (GRC, 2023). Green hydrogen has become a key sector in clean energy development, with Saudi Arabia and the UAE currently leading the way in major projects targeting production of more than 4 million tonnes per year by 2030. The NEOM project in Saudi Arabia, with an investment of USD 500 billion, is expected to become a global hub for green hydrogen production

and attract foreign investment on a large scale (NEOM, 2023b). In addition, energy storage technology is also a solution to the instability of renewable energy supply, with the UAE launching a large-scale battery project aimed at increasing renewable energy-based electricity storage capacity by 20% by 2035 (Ameer et al., 2021). On the other hand, the utilization of AI in power grid management and energy efficiency is a huge opportunity, as AI can improve energy demand prediction and optimize the distribution of solar and wind power (Biswas et al., 2024).

Furthermore, developments in the renewable energy sector are increasingly showing a significant impact on the economies of the Gulf countries. Saudi Arabia has increased its renewable energy capacity to 58.7 GW in the past decade, with most of the investment flowing into solar and wind projects (MEES, 2025). The UAE, through the Masdar City project, has attracted more than USD 22 billion in foreign investment and created more than 50,000 jobs in the clean energy and environmental technology sectors (Times, 2024). Meanwhile, Qatar has focused on developing the Al-Kharsaah solar facility with a capacity of 800 MW, as a major step in their energy transition (Ameer et al., 2021).

International cooperation is also a key factor in supporting green investment in the Gulf countries. The European Union, China, and the United States have become key partners in financing and transferring clean energy technologies (Bai et al., 2024). The European Union, for example, has signed agreements with the UAE and Saudi Arabia to support the energy transition through investments in green energy projects worth more than USD 200 billion (Reuters, 2024). Meanwhile, China has allocated USD 40 billion for green energy development in Saudi Arabia and Qatar through the Belt and Road Initiative (BRI), which accelerates the development of solar power and green hydrogen in the region (Aliedan et al., 2023). The United States has also participated in supporting green investment by expanding cooperation with the UAE on clean energy projects, including the development of carbon capture technologies (CCS) to reduce emissions from the heavy industry sector (Ameer et al., 2021).

The integration of green policies with the industrial sector is another opportunity that can accelerate sustainable economic growth in the Gulf countries. One sector that is starting to grow is the sustainable manufacturing industry, where the UAE has introduced policies that encourage green-oriented industries with tax incentives and wider access to funding. Investment in solar panel production and battery technology is projected to create more than 100,000 new jobs by 2030 (Dr. Mohamed Abdelraouf, 2023). On the other hand, sustainability-based tourism is also starting to grow, especially with the development of the Red Sea Project in Saudi Arabia. The project is designed to attract more than one million tourists per year with its eco-friendly concept, which not only generates non-oil and gas revenue but also reduces dependence on the conventional energy sector (Alyousef et al., 2025).

In addition to the economic impact, green investment also contributes to social stability in the Gulf countries. Increased investment in the green energy sector is driving the growth of a more inclusive and diverse workforce, creating opportunities for young people to engage in technology-based and sustainability industries (Nan et al., 2025). With increased renewable energy capacity, Gulf states can reduce their dependence on fossil fuels and increase domestic energy security, which will also reduce the impact of oil price volatility on the national economy.

From an environmental perspective, increased investment in low-carbon technologies is projected to reduce carbon emissions in the Gulf countries by 30% in the next two decades, which will contribute to global targets in addressing climate change (Aliedan et al., 2023).

The future prospects for green investment in the Gulf countries are increasingly promising, especially in enhancing the region's competitiveness in the global energy market. Saudi Arabia has the potential to become a major exporter of green hydrogen to Europe and Asia, strengthening its competitiveness in international energy trade. The UAE is further cementing its position as a hub for green energy innovation with the Masdar City project and various other clean energy initiatives (Waheed, 2022). Meanwhile, Qatar has the potential to become a leader in the development of carbon capture and storage (CCS) technologies, which can help significantly reduce emissions from the heavy industrial sector (Al-Hitmi, 2008).

The authors argue that with continued increased investment in clean energy, Gulf countries can not only diversify their economies, but also increase their competitiveness in the global energy market as well as contribute to environmental sustainability globally. Going forward, challenges such as dependence on imported technology and geopolitical dynamics must be managed with careful strategies so that the transition to a green economy can run effectively and sustainably. With the right approach, Gulf countries can become key players in the world's clean energy revolution, ensuring stable economic growth while supporting global targets in climate change mitigation.

CONCLUSION

Green investment has emerged as a pivotal strategy in the economic diversification agenda of Gulf countries, particularly Saudi Arabia, the UAE, and Qatar. As global momentum toward a low-carbon future intensifies, these states are not only adopting renewable energy as a climate solution but also as a tool to reshape their oil-dependent economies. This study finds that green investment has expanded new economic sectors, attracted foreign direct investment, and strengthened the Gulf's position in the global energy market through initiatives like NEOM, Masdar City, and the Al-Kharsaah solar project. However, challenges persist which ranging from technological dependency and institutional resistance to geopolitical uncertainties which require comprehensive policy responses and long-term commitment. Addressing these issues through increased domestic R&D, private sector incentives, and workforce development is key to sustaining this transition.

Going forward, Gulf governments are encouraged to adopt a more integrated, locally grounded approach to green investment—focusing on structural reforms and innovation ecosystems rather than short-term returns. While this study has drawn primarily on secondary data, future research would benefit from fieldwork and stakeholder perspectives to capture the complexity of policy implementation. Nonetheless, the findings reaffirm the Gulf's potential to become a global leader in renewable energy and green technology, especially in areas like green hydrogen and carbon capture. Their trajectory will not only define the future of their own economies but also shape the broader path of international climate action.

REFERENCES

- Abdullah, F., Alomair, A., Sibghatullah, A., & Al Naim, A. S. (2024). Promoting Sustainable Growth: The Role of Natural Resource Utilization, Green Investment, Digital Finance, Industrial Usage, Energy Efficiency, and Renewable Energy Consumption. *International Journal of Energy Economics and Policy*, 14(6), 408–419. <https://doi.org/10.32479/ijeeep.17034>
- Abid, I. (2025). The Role of Economic and Environmental Variables in Green Growth: Evidence from Saudi Arabia. *Engineering, Technology and Applied Science Research*, 15(1), 20433–20439. <https://doi.org/10.48084/etasr.9836>
- Al-Hitmi, S. (2008). *Qatar-Economic Diversification in Qatar National Vision 2030*. 1–14.
- Al-Refai, M. (2020). The impact of e-government on economic growth in GCC countries. *International Review*, 1–2, 18–26. <https://doi.org/10.5937/intrev2001018a>
- Al-Sarihi, A. (2019). Climate Change and Economic Diversification in Saudi Arabia: Integrity, Challenges, and Opportunities. *Policy Paper*, 1, 11–12. www.agsiw.org.
- Aliedan, M. M., Alyahya, M. A., Elshaer, I. A., & Sobaih, A. E. E. (2023). Who Is Going Green? Determinants of Green Investment Intention in the Saudi Food Industry. *Agriculture (Switzerland)*, 13(5). <https://doi.org/10.3390/agriculture13051047>
- Alnafrah, I. (2024). From petrodollars to green power: Fiscal stability and green transition in GCC economies. *Journal of Environmental Management*, 370. <https://doi.org/https://doi.org/10.1016/j.jenvman.2024.122784>
- Alyousef, M., Belaid, F., Almubarak, N., & Almulhim, T. (2025). Mapping Saudi Arabia's low emissions transition path by 2060: An input-output analysis. *Technological Forecasting and Social Change*, 211(March 2024), 123920. <https://doi.org/10.1016/j.techfore.2024.123920>
- Ameer, W., Xu, H., Sohag, K., & Shah, S. H. (2021). Outflow fdi and domestic investment: Aggregated and disaggregated analysis. *Sustainability (Switzerland)*, 13(13), 1–19. <https://doi.org/10.3390/su13137240>
- Bai, Y., Lu, C., Dong, X., & Li, Y. (2024). Role of collaborative governance in unlocking private investment in sustainable projects. *Humanities and Social Sciences Communications*, 11(1), 1–9. <https://doi.org/10.1057/s41599-024-03175-2>
- Benlaria, H., & Almawishir, N. F. S. (2025). The Impact of Educational Economic Factors on Institutional Sustainability Performance: The Mediating Role of Green Management Practices. *Sustainability (Switzerland)*, 17(3). <https://doi.org/10.3390/su17031260>
- Beutel, J. (2021). *Economic Diversification and Sustainable Development of GCC Countries*. https://doi.org/10.1007/978-981-15-5728-6_6
- Biswas, P., Rashid, A., Biswas, A., Nasim AL, M. A., Chakraborty, S., Gupta, K. D., & George, R. (2024). AI-driven approaches for optimizing power consumption: a comprehensive survey. *Discover Artificial Intelligence*. <https://doi.org/10.1007/s44163-024-00211-7>
- Dolowitz, D. P., & Marsh, D. (2000). Learning from abroad: The role of policy transfer in contemporary policy-making. *Governance*, 13(1), 5–23. <https://doi.org/10.1111/0952->

1895.00121

- Dr. Mohamed Abdelraouf, A. N. (2023). *Saudi Green Initiatives and Their Role in Achieving Environmental Goals in the Middle East*. <https://www.grc.net/single-commentary/116>
- Dull, E., & Reinhardt, S. P. (2014). An analytic approach for discovery. In *CEUR Workshop Proceedings* (Vol. 1304, pp. 89–92).
- Earth, O. (2024). *Understanding Saudi Arabia's Resistance to Renewable Energy*. <https://earth.org/understanding-saudi-arabias-resistance-to-environmental-policy-change/>
- EIA. (2020). *Oil market recap: Prices turned negative in April 2020*. <https://www.eia.gov/todayinenergy/detail.php?id=44116>
- GRC. (2023). *The Future of Hydrogen in the GCC Countries*. <https://www.grc.net/single-commentary/111>
- IEA. (2022). *Global Oil Market Outlook and Transition Risks*.
- IEA. (2023a). *World Energy Outlook 2023*. <https://www.iea.org/reports/world-energy-outlook-2023>
- IEA. (2023b). *World Energy Outlook 2023 – Qatar Section*.
- IMF. (2021). *Economic diversification in oil-exporting countries*.
- IMF. (2023). *Green Investment Trends in the Middle East*.
- IRENA. (2023a). *Renewable Energy and Jobs – Annual Review*.
- IRENA. (2023b). *Renewable Energy Market Analysis: GCC 2023*. <https://www.irena.org/Publications/2023/Dec/Renewable-energy-market-analysis-GCC>
- IRENA. (2023c). *Renewables Readiness Assessment: UAE*.
- Kouwenberg, R., & Zheng, C. (2023). A Review of the Global Climate Finance Literature. *Sustainability (Switzerland)*, 15(2). <https://doi.org/10.3390/su15021255>
- Krane, J. (2020a). Climate action versus inaction: balancing the costs for Gulf energy exporters. *British Journal of Middle Eastern Studies*, 47(1), 117–135. <https://doi.org/10.1080/13530194.2020.1714269>
- Krane, J. (2020b). Climate action versus inaction: Balancing the costs for Gulf energy exporters. *British Journal of Middle Eastern Studies*, 47(1), 117–135. <https://doi.org/https://doi.org/10.1080/13530194.2019.1607473>
- Mahmood, H., Adow, A. H., Abbas, M., Iqbal, A., Murshed, M., & Furqan, M. (2022). The Fiscal and Monetary Policies and Environment in GCC Countries: Analysis of Territory and Consumption-Based CO₂ Emissions. *Sustainability (Switzerland)*, 14(3). <https://doi.org/10.3390/su14031225>
- Marashdeh, Z. (2025). Green finance and financial development in delivering environmental sustainability among the Gulf countries. *Journal of Sustainable Finance & Investment*.

<https://doi.org/https://doi.org/10.1080/20430795.2025.2479540>

Masdar. (2023). *Annual Sustainability Report 2023*.

MEES. (2025). *Saudi Renewables Sector Looks To Build On 2024's Record Growth*. January 10. <https://www.mees.com/2025/1/10/power-water/saudi-renewables-sector-looks-to-build-on-2024s-record-growth/134a8810-cf55-11ef-ae5f-a5744d95e8fa%0Amees.com>

Montambault Trudelle, A. (2024a). Tools of regime stability: the political economy of sovereign wealth funds in Gulf rentier states. *Review of International Political Economy*, 31(5), 1446–1471. <https://doi.org/10.1080/09692290.2024.2325394>

Montambault Trudelle, A. (2024b). Tools of regime stability: The political economy of sovereign wealth funds in Gulf rentier states. *Review of International Political Economy*, 31(5), 1446–1471. <https://doi.org/https://doi.org/10.1080/09692290.2023.2264231>

Nan, L. M., Pacurariu, R. L., Lakatos, E. S., Bacali, L., Hoinaru, R., & Cioca, L. I. (2025). A Comprehensive Model of Green Brand Assessment in the IT Industry. *Sustainability (Switzerland)*, 17(3). <https://doi.org/10.3390/su17031336>

NEOM. (2023a). *NEOM Green Hydrogen Company completes financial close at a total investment value of USD 8.4 billion*. <https://www.neom.com/en-us/newsroom/neom-green-hydrogen-investment>

NEOM. (2023b). *NEOM Green Hydrogen Company completes financial close at a total investment value of USD 8.4 billion*. <https://www.neom.com/en-us/newsroom/neom-green-hydrogen-investment>

Nikbakht, M., Hajiani, P., & Ghorbanpur, A. (2023). Assessment of the total-factor energy efficiency and environmental performance of Persian Gulf countries: a two-stage analytical approach. *Environmental Science and Pollution Research*, 30(4), 10560–10598. <https://doi.org/10.1007/s11356-022-22344-x>

North, D. (1990). *Institutions, Institutional Change and Economic Performance*. Cambridge University Press. <https://doi.org/https://doi.org/10.1017/CBO9780511808678>

QE. (2022). *Sustainability report 2022*.

QE. (2023). *Annual Review*.

Qin, F., & Imran, A. (2024). Greening the Gulf: A Deep-Dive into the Synergy Between Natural Resources, Institutional Quality, Foreign Direct Investment, and Pathways to Environmental Sustainability. *Sustainability (Switzerland)*, 16(24), 1–24. <https://doi.org/10.3390/su162411250>

Redclift, M. (2010). *The International Handbook Of Environmental Sociology (Second Edi)*.

Reuters. (2024). *EU, seeking far-flung friends, holds first summit with Gulf states*. October 16. <https://www.reuters.com/world/eu-seeking-far-flung-friends-holds-first-summit-with-gulf-states-2024-10-16/%0AReuters>

Ross, M. L. (1999). The political economy of the resource curse. *World Politics*, 51(2), 297–322. <https://doi.org/10.1017/S0043887100008200>

- Sobaih, A. E. E., Abdou, A. H., Alshamayleh, H. Z., Alshebami, A. S., & Abu Elnasr, A. E. (2025). Greening minds before businesses: navigating SDGs hurdles for micro and small hotels in Saudi Arabia. *Cogent Business and Management*, 12(1). <https://doi.org/10.1080/23311975.2025.2459325>
- SWP. (2025). *The Gulf States, China, and Central Asia's Green Energy Sector*.
- Times, F. (2024). *No Title Abu Dhabi clean energy vehicle raises \$1bn with green bond*. July 15. <https://www.ft.com/content/976a331c-c66e-4699-a2d6-fbd0f90bcfb0>
- Waheed, R. (2022). The Significance of Energy Factors, Green Economic Indicators, Blue Economic Aspects towards Carbon Intensity: A Study of Saudi Vision 2030. *Sustainability (Switzerland)*, 14(11). <https://doi.org/10.3390/su14116893>
- WB. (2017). *Economic outlook for the Gulf Cooperation Council countries: Diversifying government revenue in the GCC*.
- WB. (2023). *Gulf Economic Update: Green Growth Opportunities*.
- WEF. (2023). *How to help fossil fuel workers in transitioning to green jobs?* September 27. <https://www.weforum.org/stories/2023/09/fossil-fuel-workers-green-jobs/>
- Yin, R. (2016). *Qualitative Research from Start to Finish* (Second Edi). The Guilford Press.