

GREEN FINANCE: A STIMULUS FOR REACHING SUSTAINABLE DEVELOPMENT GOALS — A CONCEPTUAL STUDY

Amirul Sardar

Assistant Professor

Amity College of Commerce and Finance

Amity University, Kolkata

E-Mail: sardarcu2017@gmail.com

ABSTRACT

The global endeavor of the Sustainable Development Goals (SDGs) has brought to the forefront the crucial importance of achieving environmental sustainability within the economic and financial framework. This paper looks at the importance of green finance as a catalyst for achieving the SDGs, strengthening its role in nurturing environmentally responsible investments, and alleviating the unfavorable influence of climate change. As the Earth faces challenges related to biodiversity loss, climate change, and resource depletion, the alignment of green finance evolves as a strategic avenue to integrate financial circular flows with sustainable and inclusive development. Green finance plays a central role in achieving the Sustainable Development Goals (SDGs) by mobilizing funds for environmentally sustainable projects. Green finance funds provide support for initiatives that strive to combat climate change, promote renewable energy, and ensure sustainable use of resources, which are crucial for the nation. This approach aligns with the SDGs by fostering economic growth and sustainable development in the environment and society. Collaboration between the government, private sector, and individuals in prioritizing and investing in projects that not only yield financial returns but also have positive environmental impacts. Hence, green finance is an essential tool in the journey towards a sustainable and equitable future. Build up sustainable

finance regulations, systematize ESG disclosure, and induce green investments to stimulate development toward attaining the SDGs.

Keywords: Sustainable Development Goals (SDGs), Green Finance, Environmental Sustainability, Sustainable Investment, Financial Instruments for Sustainability

I. INTRODUCTION

In the year 2000, the United Nations established the Millennium Development Goals (MDGs), which started to meet the indignity of poverty and hunger, prevent disease, and promote primary education for all children. There were eight international goals committed to be achieved by 191 United Nations member states and at least 22 organizations in 2015. The Sustainable Development Goals (SDGs) replaced the MDGs. (Gutiérrez-Fernández et al., 2023; Hassani et al., 2021; Mensah, 2019). United Nations member countries (193) adopted the SDGs in 2015 and targeted achieving the 17 Sustainable Goals by 2030. These 17 SDGs are focused on the five Ps, which are called the pillars of the SDGs: people, planet, peace, prosperity, and partnership, aiming to achieve financial stability and sustainable and inclusive economic growth. SDGs are the essence of the global sustainable agenda 2030, based on the idea that development should be economically, socially, and environmentally sustainable. Global priority areas, such as poverty eradication and hunger minimization, reduced different sectoral inequalities and promoted sustainable economic growth. These goals are interlinked and aim to create a more sustainable, legitimate, and vibrant Earth by collectively addressing environmental, social, and economic challenges, ensuring a better future for the nation and the planet. The 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals, adopted by world leaders in 2015, embody a roadmap for progress that leaves no one behind. It is crucial to integrate environmental sustainability into development strategies for several reasons, as this highlights the interconnectedness of environmental, social, and economic well-being. One of the recent threats to the global economy is climate change, which affects agriculture, health, society, and the economy. Integrating environmental sustainability into development strategies helps mitigate greenhouse gas emissions while also fostering innovation, creating green jobs, and promoting resource efficiency that can enforce economic growth and development. It also constructs social justice by addressing environmental anomalies and ensuring reasonable attainment of clean air, water, and

healthy ecosystems, which protect public health. Environmental sustainability helps to preserve biodiversity and ecosystem services.

IMPORTANCE OF SUSTAINABLE INVESTMENT: A BRIEF OVERVIEW

When investors allocate their funds to an environmental initiative, it is called sustainable investment. ESG, which stands for environment, social, and governance, are the three core factors used to assess corporate sustainability. Nowadays, socially responsible investors and those who avoid investing in tobacco, alcohol, and gambling-related businesses consider the non-financial aspects of their investment decisions. The Reserve Bank of India also promotes green deposits, which is why RBI develops a framework for banks and non-bank institutions to accept these deposits, utilized for sustainable development projects. India has announced its plan to achieve net-zero emissions by 2070. According to the Financial Times, ESG is a term commonly used by investors to evaluate corporate activities related to environmental, social, and governance aspects. It is a framework for assessing the sustainability and societal impact of companies, investments, and business practices. ESG, as we understand it, evolved from earlier sustainability frameworks such as EHS and CSR, with a greater emphasis on companies' responsibilities to society. However, ESG faces different issues when viewed through a business lens. Socially responsible investors are more concerned about global warming, environmental degradation, and various social and economic issues. They are willing to invest in projects and initiatives that help reduce carbon emissions, i.e., greenhouse gases, and make the environment carbon neutral (Jayabal, 2024). Several studies suggest that ESG-compliant companies tend to have a positive impact on financial performance, benefiting both internal and external stakeholders. Companies with higher ESG scores often enjoy better long-term shareholder value through more qualitative, committed management, reduced uncertainty and risk, and improved capital policies (Zumente, I., & Bistrova, J., 2021). ESG activities and reporting can enhance firm value positively when other factors are held constant (Fatemi et al., 2018). Consequently, sustainability-driven businesses tend to experience faster growth, improved profitability, and better cost control. ESG practices contribute to avoiding harm and creating value for companies, either directly or indirectly. Sustainable investment strategies highlight the importance of investors' values, particularly their concern about climate change, which drives investments in renewable energy projects.

PROBLEM STATEMENT

Despite the growing awareness to achieve the SDGs, funds remain a constraint, especially in addressing environmental challenges like biodiversity loss, climate change, resource degradation, etc., but green finance has appeared to be a financially optimistic tool to invest in environmentally sustainable initiatives. There is a theoretical gap in making out how efficiently it joins with and contributes to the SDGs. Moreover, limited knowledge, an incompatible policy framework, and scarce standardization in green financial assets obstruct its potential impact. Our research explored the problem by examining the conceptual link between green finance and SDGs, recognizing key challenges, gaps, and areas for improvement.

II. LITERATURE REVIEW

Green Finance is referred to as one of the financial instruments and financial services that support sustainable development. Qin Yang et al. (2022) find that clean energy, green finance, and green economy have a positive impact on sustainable development. According to Raskin et al. (2010), the 21st century is examined as an exceptional economic growth aspiration with ecological sustainability obligatory. The need to reduce carbon emissions, hedge against climate change, escalate renewable energy, and stimulate sustainable urban development, etc., is the rising pressure on the global financial system. Liu, C., & Wu, S. S. (2023) conducted a systematic literature review on green finance, challenges in sustainable disclosure, and economic implications. Researchers applied “SALSA methods” to conduct the study. They found that environmentally concerned investors are interested in investing in sustainable projects. Authors also found a positive relationship between green finance and companies’ financial performance, but a negative relationship with the cost of capital. Such kinds of investments foster risk management and economic development. Mashari et al. (2023) inspect the connection between carbon trading and green finance to reduce carbon emissions. Authors employed the bibliometric analysis VOSviewer on 506 Scopus-indexed articles from 2014 to 2022. They found that green finance is highly associated with carbon emission mitigation, but a lack of research has been conducted to find the correlation between them. The researchers also point out the importance of green investments in the carbon market. Wei and Zeng (2025) highlighted the challenges of insufficient ESG data, which leveraging AI can make research more meaningful. They applied Tunicate swarm optimized dynamic support vector machine (TSO-DSVM), which is used to extract ESG data from news, reports, and annual statements to generate more proper internal ESG scores. This model revealed that a high score of ESG is

more compatible with less market risk. That means it helps the investor with risk management, communicating a solution to transparent, reliable ESG data. Faruq and Huq (2024) explore the importance of the central bank in promoting green finance by adding social and environmental factors into the country's economic policy, like monetary, fiscal and regulatory frameworks. They highlight the influence of central banks on the financial system through climate risk assessment, sustainable investment strategies, sustainable bond markets and the integration with international institutions for best practices in it. The researchers recommend that the central bank should create a balance between financial stability and sustainable goals. Alhamis, I. (2025) explores a key theoretical study that exhibits the modern portfolio theory and behavioral finance to discuss how sustainability influences institutional investment decisions. Authors show that investors' ESG incorporations in their investment decisions help to manage risk, increase returns, and align with environmental and societal goals. Ferrer et al. (2021) examined the relationships between green finance instruments and traditional assets employing a wavelet-based network approach. The results show a strong connection between green bonds and investment-grade bonds, green stock and general stocks, but find a minimal interconnection between green bonds and general stock. They recommended that these insights are crucial for policy makers, hedging strategies, investment decision makers, etc. Mir and Bhat (2022) conduct a conceptual study on green bank practices and their adoption, implementation and promoting environmental sustainability and achieving the United Nations SDGs. According to the authors, green banking policy encourages us to use environmental data in investment decisions, emphasizing eco-friendly projects which suggest long-term benefits for banks, industries, and the world's environment, essential factors for sustainable development. Many studies explore how the private sectors are motivated to integrate sustainability issues into its financing decisions. Research examines the role of government in promoting, creating incentives, standards and regulations that encourage sustainable investments (Levitin et al., 2015). Bebbington, J., and Unerman, J. (2018) find that challenges and risks are associated with green finance. Zakari (2022) recommended promoting green financial markets and a green financial system in underdeveloped areas. Mara Madaleno (2022) suggested green finance investments are promoted by the need for clean energy. Quang, P. T., and Thao, D. P. (2022) found in their research that per capita income, economic integration and renewable energy supply reduce energy intensity. Liu, Y., Wang, J., Dong, K., and Taghizadeh-Hesary, F. (2023) found in the research that green finance can effectively mitigate the restorative effect

of natural resource abundance on green total factor productivity. In addition to academic contributions, institutional frameworks have emerged to operationalize the connection between finance and sustainable development. Identifiably, the United Nations Development Programme (UNDP) has launched a platform, the SDG finance platform, as a crucial step to channelize the substantial financing gap that relates to the SDG goals. Budgeted annual funds are insufficient to reach the goals for developing and emerging nations. That's why sustainable finance platforms have taken a dynamic step to fill the gap between global finance and the SDGs. The objective of this initiative is to mobilize and orient public and private capital with the precedence of SDGs in developing and underdeveloped nations. Therefore, the concept of green finance is implemented at the base of the Sustainable Development Goals. It provides the advantage of partnerships between governments, development banks, investors, and companies to facilitate green investment. Integrated National Financing Frameworks (INFFs) are core to the platform's strategy. They assist and coordinate countries for various sources of finance, such as domestic, host, public, and private. These finances help to achieve national SDG strategies. UNDP's SDG finance platform supported many countries, like Indonesia, in developing a channel of bankable SDG-aligned projects and receiving the advantage of Islamic bonds (issuance of sovereign green sukuk), creating interest for worldwide investors. Similarly, in Zambia, the development of an INFF is underway to channelize domestic resources for climate-resilient infrastructure. However, in the real-world impact in India, this platform has supported the government for the alignment of the nation's public finance with SDGs, especially through the INFFs framework, which helps India to foster towards Agenda 2030. In India, UNDP conspired with Indian state governments (Uttar Pradesh and Assam) to enable policymakers to track the allocation of public funds towards specific SDGs that improved the accountability, transparency, and efficiency of public spending. It also facilitates India's green bond by public sector entities such as IRFC, REC Ltd., and SBI, aligned with these initiatives of renewable energy, sustainable transport, and climate adoption. SDG Investor Maps act as a tool to recognize the high-impact investment opportunities that accord to countries' development preferences and SDG accomplishments, primarily in sectors like clean energy, sustainable agriculture, health, and infrastructure. Development of Green Bonds and Blended Finance Instruments is a platform that assists governments in designing creative blue and green financial instruments, such as blended finance forms of strategies that align public and private investment to mitigate the risk of green projects. UNDP also helps in capacity

building and financial policy reforms, which can help manage the national green system (Nhamo, G., 2013).

Research Gap

Despite growing concern and interest in green finance and sustainability, there is a lack of conceptual clarity on how specific green finance instruments directly contribute to specific sustainable development goals (SDGs) targets. Furthermore, there is an inconsistent academic focus, shattered policy support, a lack of standardization on the theoretical alignment between green finance and SDGs execution and identifying a significant research gap. This paper is of an explanatory and descriptive type. Based on the above, our study aims to fulfil the following objectives.

III. OBJECTIVES OF THE STUDY

1. To explore the conceptual relationship between green finance and Sustainable Development Goals (SDGs)
2. To conceptually examine how green finance instruments align with specific Sustainable Development Goals.
3. To identify the key green finance instruments and their potential roles in achieving the SDGs.

The objectives of this study are based on a conceptual research framework designed to inspect pop-up themes such as green finance and its alignment with the Sustainable Development Goals (SDGs). Given the limited experimental data and the progressive nature of green finance, this study employs a qualitative and exploratory approach, relying on a wide range of secondary data sources, including academic literature, policy documents, and institutional reports.

The first objective is to explore the conceptual relationship between green finance and SDGs. This is achieved through a review of the conceptual foundations, which allows for the composite of definitions, theoretical roots, and evolving perspectives. It emphasizes that environmental financing is not just an investment approach but represents a reversal of policy in development financing aimed at addressing ecological and social challenges.

The second objective is to conceptually examine how green finance instruments, such as green bonds, green sukuk, and ESG funds, align with specific

SDGs, including clean energy (SDG 7), sustainable cities (SDG 11), and climate action (SDG 13).

The third objective is to identify key green finance instruments and their potential roles in achieving the SDGs. This is accomplished by mapping the landscape of green financial instruments within the Indian context, featuring a corporate case study, such as Tata Power Green Energy Ltd.

Together, these objectives are integrated into a conceptual framework that aligns with literature-based reasoning, contributing new insights into a field where empirical research is still developing, and standardized metrics are being established.

IV. CONCEPTUAL LINKAGE BETWEEN GREEN FINANCE AND SDGS

Green finance is closely linked to the Sustainable Development Goals (SDGs) and serves as a transformative mechanism to redirect capital toward environmentally responsible projects. By incorporating environmental sustainability into investment decisions, green finance aligns with global development priorities such as climate action, clean energy, and sustainable cities. This alignment allows financial systems to promote inclusive growth while mitigating ecological degradation. Green finance bridges the gap between environmental stewardship and economic progress by funding low-carbon, resource-efficient projects. It supports the SDGs by leveraging capital markets and policy frameworks to ensure sustainable economic activities without compromising intergenerational equity or planetary health. The financial system plays a crucial role in channeling financial resources from savers to borrowers. Various components of the financial system act as intermediaries and mobilize funds in a circular manner, which helps the economy grow efficiently. As a key aspect of the financial system, green finance is essential for mobilizing funds for environmentally friendly projects. It is defined as financial activities and instruments that take environmental impacts into account and promote environmental sustainability. Different financial institutions, such as banks and non-bank financial companies (NBFCs), gather funds and allocate them to business sectors. The risk and return profile of a business typically guides investors in their decision-making. To achieve sustainable development goals, the financial sector must reduce growing climate risks and contribute to a carbon-free economy (Schumacher, K. 2020; Durrani, A., Rosmin, et al. 2020). Sustainable finance examines the negative impacts of investments on environmental, social, and

governance aspects. In green finance, these impact-related issues matter for investment decisions and may influence the risk profile. Some investors may prefer sustainable investments over other projects with similar risk and return profiles. Green finance offers a new perspective by directing investments away from greenhouse gas emissions, fossil fuels, and resource-intensive industries, focusing instead on sustainable initiatives that contribute to achieving the SDGs. Sustainable finance is crucial for reaching a sustainable economy and is recognized as a key financial instrument and service that supports sustainable development. Clean energy, green finance, and the green economy positively influence sustainable development. Many studies indicate that the private sector is increasingly motivated to incorporate sustainability into its financing decisions. Financial systems consist of five components, and among them, financial assets play a significant role in shaping financial instruments for any country. These elements significantly influence the economy by mobilizing savings to create capital and enhance per capita income, ultimately leading to overall economic development. Active and efficient financial development maintains steady economic growth by ensuring an adequate flow of savings, which is essential for capital formation, an important determinant of economic growth. Financial instruments are assets that represent a legal claim to future benefits (Levine, R. 1997; Mazzucato and Wray, 2015).

V. GREEN FINANCE INSTRUMENTS AND THEIR ALIGNMENT WITH SDGS

Various green finance instruments have emerged to support specific Sustainable Development Goal (SDG) targets by channeling investments into sustainable sectors. A range of short-term, medium-term, and long-term financial products is available in both the money market and capital market, contributing to capital formation within the economy. Financial instruments for green finance mobilize savings for businesses focused on environmental sustainability, such as projects in renewable energy, including wind turbines, solar panels, and recycling initiatives. Some examples of green assets include green bonds, green loans, green investment banks, carbon offsets and credits, renewable energy certificates, and green funds or investment vehicles. Additionally, carbon pricing mechanisms fund renewable energy projects (aligning with SDG 7), promote green transportation (SDG 11), and encourage responsible business practices through ESG investment, contributing to emission reductions in line with SDGs 12 and 13. These instruments facilitate resource allocation to renewable energy, green transportation, water

management, and pollution control. Sharia-compliant green finance instrument designed to finance environmentally friendly projects that deliver positive environmental impacts, such as renewable energy, clean transportation, energy efficiency, and sustainable water management. Green sukuk adheres to Islamic ethical finance principles while aligning with green finance concepts, providing investors with the dual benefits of ethical investment and contributions to climate and sustainability goals. Unlike conventional Islamic bonds (sukuk), which are interest-free (riba), green sukuk adheres to Islamic principles. Prayogo et al. (2024) conducted a bibliometric analysis from 2015 to 2023 on green sukuk, utilizing the Scopus database to identify the most cited articles, key journals, authors, institutions, and countries contributing to this field. According to the researchers, Islamic principles, ESG considerations, and green bond standards drive investors to engage with green sukuk, supporting the 2030 Sustainable Development Goals, particularly the climate action initiative. Alkadi (2024) emphasizes that green sukuk is an emerging financial tool comparable to traditional bonds such as T-bills and government bonds, which are also debt securities issued by governments, municipalities, or corporations to mobilize capital towards environmentally friendly projects, thereby reducing investment risk related to long-term climate change and motivating environmentally sound practices (Corfee-Morlot et al., 2012). Prominent institutions worldwide, including the World Bank, Asian Development Bank, International Finance Corporation, and National Green Bank, play crucial roles in promoting green finance and environmental wellness. These organizations provide financial and technical support to help achieve targeted sustainable goals. Various countries have implemented green finance strategies as part of their fiscal and monetary policies (Azhgaliyeva et al., 2019). Banks and financial institutions offer green loans to fund environmentally sustainable activities, while Green Investment Banks are specialised financial institutions that focus specifically on financing green investments (Green Investment Group, 2021). Green finance is one of the pivotal mechanisms for mobilizing investments towards climate action & sustainable development. A large spectrum of long-term, medium-term, and short-term green finance instruments has emerged in both capital markets as well as money markets to facilitate targeted SDGs. These instruments contribute to capital formation in the economy and support the reallocation of resources into environmentally beneficial sectors such as renewable energy, wind energy, recycling, sustainable urban infrastructure, green transportation, sustainable water management, and pollution control.

ESG investment vehicles, carbon offsets and credits, green sukuk, and their linkage with the Sustainable Development Goals. Instruments such as green bonds, loans, and green sukuk directly support SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action) by funding solar energy and carbon emission-reduction that assist in environmentally friendly initiatives. ESG investment vehicles and carbon Credit contributes to SDG 11 (Sustainable Cities and Communities), SDG 12 (Responsible Consumption and Production). The above figure illustrates the green finance landscape, which includes green bonds, green loans, ESG investment vehicles, carbon offsets and credits, green sukuk, and their connection to the Sustainable Development Goals. Instruments such as green bonds, loans, and green sukuk directly support SDG 7 (Affordable and Clean Energy) and SDG 13 (Climate Action) by financing solar energy and carbon emission reduction efforts that promote environmentally friendly initiatives. ESG investment vehicles and carbon credits also contribute to SDG 11 (Sustainable Cities and Communities) and SDG 12 (Responsible Consumption and Production), as well as SDG 13, by promoting sustainable urban development, responsible business practices, and reduced environmental footprints. Green investment banks facilitate infrastructure and innovation financing, thereby supporting SDG 9 (Industry, Innovation, and Infrastructure) alongside climate goals. Therefore, the framework highlights the diversification of green finance mechanisms that collectively channelize capital and lead to progress toward multiple sustainability targets.

VI. CASE STUDY

TATA POWER GREEN ENERGY LTD. (TPGEL) AND GREEN BOND ISSUANCE IN ADVANCING SDGS

TPGEL is a wholly owned subsidiary of Tata Power Company Ltd., one of India's largest integrated power companies. The company focuses exclusively on clean and renewable energy projects, including solar, wind, and hybrid power generation. As of 2024, TPGEL has commissioned over 4,800 MW of renewable energy capacity, significantly contributing to Tata Power's vision of achieving carbon neutrality by 2045. To fund its clean energy expansion, TPGEL has issued green bonds that are certified under the Climate Bonds Standard and aligned with the Green Bond Principles as outlined by the International Capital Market Association (ICMA). In April 2022, TPGEL raised \$525 million through a 10-year green bond issuance in international markets, reflecting strong investor confidence in India's renewable energy sector. This initiative directly supports Sustainable Development Goal 7

(SDG 7), which focuses on affordable and clean energy, and Sustainable Development Goal 13 (SDG 13), which emphasizes climate action by displacing fossil fuel-based power and reducing carbon emissions. The proceeds from the green bonds have been allocated to develop solar and wind energy projects in Rajasthan, Gujarat, and Maharashtra. Projects funded by these bonds are expected to offset over 1 million tons of carbon dioxide annually and have added over 1,000 MW of renewable capacity, contributing to India's goal of achieving 500 GW of non-fossil capacity by 2030. Dr. Debisree Banerjee highlighted in his paper the significance of green investing, specifically post the COVID era, as investors increasingly prioritise ESG-aligned funds to address climate challenges. Researchers mentioned the Tata Power case study, where he demonstrated that green finance and sustainable reporting are the driving forces for India's green advancements and SDG commitments. However, TPGEL has encountered several challenges since the issuance of the green bonds in USD, including financial risks due to foreign exchange fluctuations, administrative bottlenecks, technical challenges, and issues with ESG monitoring and reporting.

ANALYTICAL INSIGHTS AND PERFORMANCE METRICS

The evaluation of TPGEL's influence on sustainability through its growth in installed renewable capacity reveals crucial contributions to the renewable energy landscape. These investments are connected to employment creation and economic growth, particularly in developing economies (Ali, Q., & Zaighum, I., 2024). Solar and wind renewable energy technologies significantly lower greenhouse gas emissions, contributing to climate change mitigation (Pawar, S. (2024). Tata Power has a significant renewable energy portfolio, including operational and under-construction capacity. Recent financial reports reveal an active performance with volatile net worth and growing earnings before interest, taxes, depreciation, and amortisation (EBITDA), where TPGEL issued a green bond, which is a primary method for raising capital to fund renewable projects, such as solar and wind power, to achieve India's decarbonization goals.

India's renewable energy market is one of the world's fastest-growing markets, which is driven by the national commitment to reach 500 GW of non-fossil capacity by 2030.

TABLE 1: COMPARATIVE ANALYSIS WITH PEERS

Company	Operational Capacity (GW,2024)	Focus Area(s)	Key Strengths	Key Challenges
Adani Green	10.9	Solar & Wind	Scale, global financing, and expansion pace	Debt, governance concerns
Tata Power (TPGEL)	4.8	Solar, Wind, Hydro, Distributed	Strong ESG profile, green bonds, credibility	Forex risk, policy bottlenecks
NTPC Renewable	3.5	Solar, Wind, Hydro, Storage	Govt. backing, large project execution	Bureaucratic hurdles, slower than peers
Suzlon energy	14	Solar, Wind, Hydro, Floating Solar	Industry pioneer, domestic dominance	Past financial stresses, weak diversification

TABLE 1 depicts several key players that dominate the renewable sector. Tata Power stands out for its sustainability focus and ESG transparency, backed by strong green bond issuances; on the other hand, Adani Green Energy is the most aggressive in scaling capacity, focusing heavily on solar and wind. NTPC's renewable energy leverages government backing but lags in speed compared to private players. But Suzlon remains a wind leader, facing financial restructuring and diversification issues.

TABLE 2: 'THE LAST FIVE YEARS' FINANCIAL PERFORMANCE OF TPGEL

Financial Indicators	2024	2023	2022	2021	2020
Profit after tax (in ₹ Cr.)	2229.86	3267.90	2782.93	921.45	148.12
Basic EPS	6.97	10.22	8.61	21.49	0.08
Revenue from operations/ Share	62.88	55.48	34.67	19.34	28.56
Net profit margin (%)	11.09	18.43	25.05	14.90	1.91
ROCE	13.35	15.29	10.44	7.41	10.82
ROA	4.41	6.78	5.90	2.14	0.39
Total debt/ Equity	1.24	1.60	2.27	1.11	1.17

TABLE 2 discusses the financial results of TPGEL for the last five years; all the data was collected from authorized secondary sources. The table shows that Profit after tax escalates from Rs. 148 Cr. In 2020, to Rs. 3268 Cr. In 2023, before moderating to Rs. 2229 Cr. In 2024, earnings per share stabilized at Rs. 6.97 after a one-time peak in 2021. This kind of company's profitability, rising revenue per share alongside moderate margins, demonstrates strong clean energy adoption with economic trade-offs, shareholder value, enabling them to reinvest in renewable projects, which supports SDG 7 (Affordable & Clean Energy), SDG 9 (Industry, Innovation & Infrastructure), and SDG 13 (Climate Action). TPGEL's capital efficiency is indicated by Return on capital employed (ROCE) and return on assets (ROA), which rose steadily, showing effective and efficient use of renewable assets that align with SDG 12 and SDG 13. Also, a fall in the Debt-to-Equity ratio leads towards financial resilience and assists long-term green investments that contribute to SDG 17.

VII. CONCLUSION

The Sustainable Development Goals, as outlined in Agenda 2030, are the world's first comprehensive blueprint for sustainability, and green finance is a crucial financial activity or instrument for achieving the Sustainable Development Goals (SDGs). It mobilizes financial resources from the sender to the receiver, who invests the fund after accumulating them in sustainable infrastructure and projects that help

reduce climate risk, greenhouse gas emissions, and promote sustainable agribusiness and a zero-carbon economy, which promotes sustainable economic growth. Finance acts as a lifeblood for business as well as the development of any infrastructure project. Financial sectors are sourcing funds for sustainable projects like solar panels, waste-to-energy recycling, water treatment plants, wind turbines, etc., that help reach the SDGs and fulfill the SDG Agenda 2030, but in general, investors show less interest while investing in green projects and initiatives due to the high risk and lower rate of return associated with them. This conceptual study spotlights that green financial instruments play a transformative role in redirecting capital towards sustainable projects. To achieve sustainable development goals, we need to scale up investments in green bonds, green banks, carbon market instruments, and fiscal policy. At present, many financial institutions and investors who are socially responsible are investing in green finance instruments. Green finance aligns with multiple sustainable goals, investing in areas like clean energy, clean water, and sustainable agriculture. All these not only promote environmental sustainability but also contribute to specific sustainable development goals (SDGs). So, sustainable finance is a necessary element for accomplishing the SDGs as well as calibers to put in motion resources, align with several sustainable objectives, engages the private sector, and solve regulatory challenges makes it an exigent operator of betterment. So, the chapter emphasises that green finance is not just an option as a financial instrument but an unavoidable imperative for a more sustainable and equitable future. Green finance stands for a powerful stimulant in achieving the 2030 Agenda and ensuring a more sustainable and equitable future for all. Our study only provides conceptual insights into green finance and SDGs; this is the limitation of our paper. There is a possibility to conduct this study empirically, using analytical methodology, etc.

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