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Corporate Social Responsibility and Sustainability Practices in the Renewable Energy Sector: A Case Study of Adani Green Energy Limited

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Abstract— Corporate Social Responsibility (CSR) and sustainability have become strategic imperatives for organizations, especially those operating in environmentally sensitive sectors such as renewable energy. This study examines the CSR and sustainability initiatives of Adani Green Energy Limited (AGEL), one of India's leading renewable energy companies. Using secondary data from AGEL's sustainability and CSR reports between 2020 and 2024, the research explores how AGEL integrates sustainability into its CSR framework and evaluates the environmental and socio-economic outcomes of these initiatives. Results show a steady rise in CSR investments and renewable energy capacity, along with notable improvements in carbon reduction, community development, and resource conservation. The findings highlight AGEL's significant contribution toward national clean energy targets and global Sustainable Development Goals (SDGs).

Keywords— Corporate social responsibility, sustainability, renewable energy, Adani Green Energy, ESG, Sustainable Development Goals.

I. INTRODUCTION

As global priorities shift toward climate resilience and environmental stewardship, businesses are increasingly expected to expand their role beyond profit generation. The renewable energy sector, positioned as a driver of sustainable development, has a particular responsibility to embed social and environmental accountability within its operations. In India, Adani Green Energy Limited (AGEL) has emerged as a leading renewable energy producer with a rapidly expanding portfolio of solar and wind assets.

AGEL's activities go beyond energy production; the company integrates CSR and sustainability into its strategic vision, addressing community welfare, environmental conservation, and ethical governance. With over 8 GW of installed renewable capacity and an ambitious target of reaching 45 GW by 2030, AGEL demonstrates how corporate growth can be aligned with national sustainability priorities. This study explores the depth and effectiveness of AGEL's CSR and sustainability efforts over a four-year period.

II. LITERATURE REVIEW

CSR is often defined as an organization's voluntary commitment to balancing economic goals with social welfare and environmental protection (Carroll, 1999). The Brundtland Commission (1987) expanded the concept of sustainability as development that does not compromise future generations' ability to meet their needs, highlighting intergenerational responsibility.

Porter and Kramer (2006) argued that CSR can create shared value by aligning social progress with business success. In the Indian context, Gupta and Sharma (2022) found that corporations integrating sustainability with CSR achieved stronger stakeholder trust and operational efficiency. Within the renewable energy industry, CSR typically focuses on carbon reduction, biodiversity conservation, and inclusive community development (Singh & Jain, 2021). AGEL's strategy reflects these priorities, positioning the company as a model for sustainability-driven corporate leadership.

III. OBJECTIVES OF THE STUDY

- 1) To examine Adani Green Energy Limited's CSR and sustainability initiatives.
- 2) To analyse the relationship between CSR investment and sustainability outcomes.
- 3) To assess the environmental and socio-economic impact of AGEL's CSR programs, be justified, i.e. both left-justified and right-justified.

IV. RESEARCH METHODOLOGY

This descriptive study is based on a case study approach using secondary information. Data were collected from:

- 1) AGEL's CSR and Sustainability Reports (2020–2024)
- 2) Adani Foundation publications
- 3) Publicly available government and industry document.

A. Analytical Approach

- 1) *Quantitative Analysis:* Year-wise CSR expenditure, renewable capacity, carbon reduction, resource conservation, and beneficiary count.
- 2) *Qualitative Analysis:* Thematic study of CSR initiatives in areas such as education, healthcare, livelihood development, and environmental conservation.
- 3) *Trend Analysis:* Graphical and tabular representation of changes across four years.

V. DISCUSSION AND ANALYSIS

A. CSR Investments and Focus Areas

AGEL's CSR activities are primarily concentrated in four domains—education, healthcare, livelihood, and environment. The company's CSR spending has shown a consistent upward trend over years.

TABLE I
CSR EXPENDITURE BY THEMATIC AREA (₹ Crores)

Year	Educa tion	Healthc are	Liveli hood	Envir onme nt	Total CSR Spend
2020-21	6.2	4.8	3.9	2.1	17.0
2021-22	7.5	5.3	4.5	3.0	20.3
2022-23	9.0	6.5	5.1	3.6	24.2
2023-24	10.4	7.2	6.0	4.1	27.7

The data indicate a 63% increase in CSR expenditure from 2020–21 to 2023–24, with education and healthcare consistently receiving the largest share. This growth reflects AGEL's increasing commitment to social development.

B. Sustainability Performance Indicators

AGEL's sustainability performance shows consistent progress in renewable energy expansion and environmental conservations.

TABLE II
SUSTAINABLE PERFORMANCE INDICATORS (2020-24)

Year	Installed Capacity (MW)	CO ₂ Reduction (Million Tons)	Water Saved (Million Liters)	CSR Beneficiaries (Lakhs)
2020-21	4,600	6.5	25	2.8
2021-22	5,400	7.8	32	3.4
2022-23	6,800	9.2	40	4.2
2023-24	8,100	10.5	47	5.0

All The company's installed capacity grew by nearly 76% during the four-year period, accompanied by significant increases in carbon abatement and community reach.

C. Graphical Presentation.

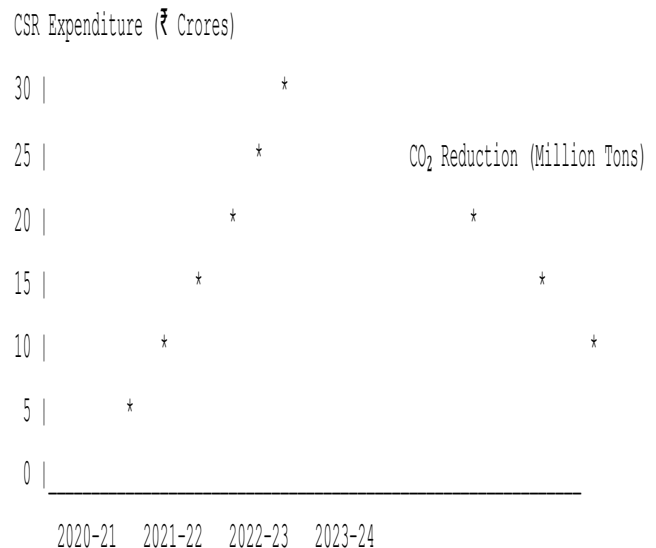


Figure I CSR Expenditure and CO₂ Reduction Trends (2020-24)



Interpretation:

The upward movement of both CSR expenditure and CO₂ reduction suggests a positive association between social investments and environmental outcomes.

D. Social and Environment Impact

AGEL's CSR initiatives have yielded measurable benefits:

- 1) *Education:* Support for 50+ rural schools and nearly 20,000 students.
- 2) *Healthcare:* Over 250 health camps conducted each year, benefiting nearly 50,000 individuals.
- 3) *Livelihood programs:* Training of 12,000 rural youth in renewable energy operations and maintenance.
- 4) *Environmental Conservation:* Plantation of over one million trees around renewable project sites, contributing to biodiversity enhancement.

These initiatives reflect AGEL's integrated commitment to social welfare and environmental stewardship.

E. Governance and Ethical Practices

AGEL's sustainability governance framework includes a dedicated CSR and Sustainability Committee that oversees compliance with legal and regulatory standards such as the Companies Act (2013) and SEBI's ESG guidelines. Annual third-party audits ensure transparency, while stakeholder consultations guide CSR decision-making. The company's alignment with global reporting formats further strengthens its accountability.

VI. FINDINGS

- 1) AGEL's CSR spending and renewable energy capacity have grown consistently from 2020 to 2024.
- 2) Higher CSR investment corresponds with improved sustainability metrics, such as carbon reduction and water conservation.
- 3) AGEL's CSR activities strongly align with SDGs, especially SDG 7 (clean energy), SDG 8 (decent work), and SDG 13 (climate action).
- 4) Community-oriented programs have enhanced social inclusion, educational access, and rural employability.

VII. RECOMMENDATIONS

- 1) *Strengthen ESG Reporting:* Introducing real-time CSR dashboards will enhance transparency and stakeholder trust.
- 2) *Increase Academic Collaboration:* Partnerships with universities can stimulate innovation in sustainability research.
- 3) *Diversify CSR Focus Areas:* Adding projects on gender empowerment and rural entrepreneurship can broaden community impact.
- 4) *Expand Green Technology R&D:* Increased investment in green hydrogen, battery storage, and smart grid technology will support long-term sustainability.
- 5) *Promote Community Ownership:* Involving local communities in planning and evaluating CSR projects will enhance sustainability and local empowerment.

VIII. CONCLUSION

Adani Green Energy Limited demonstrates how CSR and sustainability can be embedded into core business strategy. The company's efforts in renewable energy expansion, environmental protection, and community development showcase a balanced approach to economic growth and social responsibility. AGEL's contributions align with both national sustainability goals and global climate commitments, positioning it as a leader in responsible corporate conduct within the renewable energy sector.

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