"Financial, Environmental and Social Benefits of Carbon Credit Revenues"

First Author
Shaifali Bareja
Research Scholar
Amity University, Haryana

Second Author
Prof. (Dr.) Vidhi Bhargava
Professor, Amity College of Commerce
Amity University, Haryana

Abstract

Severe climate change impact has urged the organizations to behave more responsibly towards their carbon emissions. For an organization to survive in this polluted environment not only monetary figures are important but environmental and social aspects are also important. The organizations are adopting several mitigation and remedial measures like carbon trading that leads the path towards carbon net zero. The present study focuses on selected Power sector firms and examines the financial, environmental and social impacts of carbon credit revenues (CCR). While applying the Multiple Regression, the coefficient of correlation (R) is 0.115, 0.013, 0.143 and 0.269 indicates a weak positive linear relationship between CCR and earning per share (EPS), return on equity (ROE), return on capital employed (ROCE) and enterprise value (EV) respectively. Currently, the impact of CCR on EPS, ROE, ROCE and EV is minimal but its positive larger benefits on society at large are very significant for the environmental and social health of the organization. Even the standard setting bodies are working towards the implementation of reporting standards to ensure proper accounting of climate related events. The study also suggests Social Entrepreneurship as a remedial measure which combines the goals of both traditional ventures and NGOs. to reduce emissions and provide leading advantages to the organizations.

Keywords: Carbon Credits, Financial Performance, Power Sector, Sustainability, ESGs.

Introduction

Recent times are characterized by humungous changes in weather patterns. Numerous environmental initiatives have been taken in action to harmonize these changes, which has taken gigantic magnitude, thanks to the unabated carbon emissions. Social and regulatory pressures are forcing firms to move towards eco-friendly behaviors. Simultaneously, firms have to be ready with adequate know-how about the prospective climate change effects on their actions and processes affecting financial performances, remedial actions to be strategized, so as to empower the stakeholders. The most significant function to mitigate these environmental issues has been the carbon credit trading that has given the environmental edge along with monetary gains.

Carbon credits are a component of market-based approaches to control pollution. Under this system, companies can earn credits for reducing greenhouse gas emissions beyond regulatory requirements. These credits can then be sold to other companies that may need them to comply with emissions targets and to earn some revenue. The fundamental idea is to create a financial incentive for companies to invest in cleaner technologies and practices, thereby promoting sustainable development. In India, the regulatory landscape, having mechanisms like the Clean Development Mechanism (CDM) and the National Clean Energy Fund, has enabled companies to engage actively in carbon markets.

In a vast country like India where the demand for electricity is rising exponentially the power sector needs to expand its capacity while simultaneously addressing environmental concerns. The country is among the top emitters of greenhouse gases globally, with the power sector being a significant contributor. This sector is pivotal to the country's economic growth, providing the energy necessary for industrialization and improving the quality of life for its citizens. The sector is characterized by a diverse mix of energy sources, including coal, natural gas, hydroelectric power, and renewables such as wind and solar. Each of these sources has different potential for earning carbon credits. For instance, companies investing in renewable energy projects can earn credits for displacing fossil fuel-based power generation. Similarly, companies that adopt energy-efficient technologies or processes can reduce their emissions and earn credits, thus creating a direct financial incentive to pursue sustainability.

As companies seek to comply with environmental regulations, the revenue generated from carbon credits can have a substantial impact on their profitability. This revenue not only enhances the financial health of the companies but also enables them to invest further in sustainable practices. However, the relationship between carbon credit revenue and financial performance is complex and multifaceted. While many companies may benefit from this revenue stream, the degree to which it impacts financial metrics such as profitability, return on assets (ROA), and return on equity (ROE) varies across firms. Mere earning revenue from Carbon credits may not be significant, the non-monetary benefits are immense from social and ecological point of view.

The transition to a low-carbon economy is increasingly recognized as essential for achieving sustainable growth. Carbon credits serve as an effective tool in this transition, facilitating the alignment of economic and environmental goals. In the Indian context, the government has set ambitious targets to increase renewable energy capacity while reducing reliance on fossil fuels. By participating in carbon markets, power sector companies can not only comply with these targets but also leverage new revenue opportunities that arise from emissions reductions.

This research paper aims to investigate firstly the specific impacts of carbon credit revenue on the financial performance of power sector companies in India. It will explore how revenue from carbon credits correlates with key financial indicators and assess whether companies that actively participate in carbon trading outperform their peers who do not engage in such practices. By focusing on a range of financial metrics, this study will provide a comprehensive view of how carbon credit revenue contributes to the overall economic health of power sector firms. Secondly the study highlights the environmental and social benefits of carbon credit revenues, proving that firms that engage in carbon trading practices do outperform their peers.

Review of Literature

Through an extensive review of literature, it has been observed that rising atmospheric emissions will create a toxic environment, causing serious threats to human survival. Various studies are being conducted to explore strategies with respect to this issue, with researchers aiming to identify financial, environmental, and social solutions to mitigate the harmful impacts of increasing emissions.

According to **Paul (2010)** “Carbon Credit and Carbon Trading in India”, there is a direct and immense connection between carbon credits, economic incentives, and environmental sustainability. It presents India as a major participant in mitigating climate change by highlighting the country's substantial engagement in the global carbon trading markets, notably through the Clean Development Mechanism (CDM). The study showed the dual effects of carbon credits, first by reducing emissions giving positive environmental impacts, and secondly relatively small but important financial implications, particularly in the manufacturing and power industries.

According to **Sarkar et al. (2011)** "Emissions trading and carbon credit accounting for sustainable energy development with focus on India", the study outlines the potential for creating reliable accounting practices for the trade of carbon credits, as well as the new concerns related to the emission-trading mechanisms. With an emphasis on India, the study explores the potential for creating a reliable carbon credit marketing system with integrated efficiency in transactions, accountability, and transparency in reporting systems. In order to properly implement emission-trading programs and achieve carbon neutrality, the paper also emphasizes the necessity of adhering to global accounting standards, tax planning, access to the multi-commodity exchange market, certification, verification, and enforcement procedures. The elements of carbon management are also emphasized, with an emphasis on implicit energy security, sustainable energy development, and carbon neutrality.

Lee (2012) "Corporate carbon strategies in responding to climate change",examined how organizations respond to climate change by adopting various carbon strategies, due to regulatory pressures and market needs. The strategies of 241 Korean companies into six types: Wait-and-See Observer, Cautious Reducer, Product Enhancer, All-Round Enhancer, Emergent Explorer, and All-Round Explorer were selected. The results showed firms in energy-intensive sectors tend to adopt more comprehensive strategies and larger companies are more proactive due to greater resources and regulatory pressures. The study found limited evidence linking carbon strategies to financial performance, with cautious reducers experiencing lower profit growth.

Banawat and Vardia (2015) "An analysis of carbon credit revenue practices in Indian corporate sector", investigated the earnings from carbon credits in the Indian corporate sector in the research. Ten businesses that reported revenue from carbon credits in their annual reports are included in this analysis. Statistical methods such as the ANOVA and Chi-Square tests have been employed. The results show that while there are no appreciable differences in the sample companies' income generation from carbon credit trading, there are appreciable variations in the average revenue from carbon credit transactions among the sample units in different years.

Kumar et al. (2020) "Carbon credit issuance: Accounting based financial performance", examined the relationship between the Corporate Financial

Performance (CFP) and the Certified Emission Reductions (CERs') issuance in this investigation. It includes information about 44 Indian organizations that are actively engaged in climate conservation efforts and have at least once submitted data about their ecological efforts through the CDP between 2011 and 2015. The results of this analysis showed a substantial and positive correlation between ROE and CER issuances. The results show that investors view the CER grants as a good gesture from the organization, which increases ROI. The findings hold significance for financial experts engaged in the CDM market and for the development of environmental initiatives by Indian organizations.

Bhardwaj et al. (2022) “Trade in Carbon Credits-An Indian Perspective”, examined the carbon tariff projects undertaken by accountants in connection with climate change. It focuses specifically on how businesses in the energy sector have changed how they operate since the carbon tax was implemented. The Kyoto Protocol serves as the foundation for the idea of carbon credit trading, which is mostly utilized to reduce greenhouse gas emissions. India is among the initial players in this market. Originally, just a few major corporations employed and profited from this idea. However, a few smaller, more recent businesses are also seizing the chance. As of now, this is India's financial market with the quickest growth.

Chen et al., (2022) "Does the carbon emission trading scheme boost corporate environmental and financial performance in China?", examined the impact of China's Carbon Emission Trading (CET) pilot on corporate and provincial environmental performance, as well as financial outcomes for the period 2008 to 2016. The CET pilot successfully decreased the carbon emissions at both levels. The policy had a stronger positive impact on market-based financial performance than on accounting-based performance, indicating that the CET encourages firms to innovate and reduce emissions but does not immediately improve profitability.

Zhang et al., (2023) “The impact of carbon markets on the financial performance of power producers: Evidence based on China”, examined the impact of China's carbon trading market on the financial performance (2016-2022) of power generation companies. The results show that the setting up of the carbon market had a substantial negative impact on financial performance especially for smaller, non-state-owned

businesses based in developed economies but state-owned businesses were less impacted because of better availability of resources.

According to **Khurana (2024)** “Shaping India's climate future: A perspective on harnessing carbon credits from agriculture”, in order to attain net carbon neutrality by 2070, India needs to prioritize mitigating climate change immediately. By implementing sustainable farming practices like zero tillage, laser-assisted precision land levelling, direct rice seeding, intercropping, applying biochar, using solar energy, and more effective management of irrigation water, soil nutrients, livestock feed, and manure, its agriculture sector has the potential to change from being a net emitter of greenhouse gases to a net absorber of them. A voluntary carbon credit trading scheme, bolstered by a platform for measurement, monitoring, reporting, and verification, might be used in agriculture to encourage climate consciousness. More specifically, from 2019 to 2070, the country's yearly emissions could be significantly reduced by 84% thanks to the agriculture sector. However, the carbon markets need to get over their present obstacles in order to reach their full potential.

Research Objective

The present study is focused on Carbon Credit Revenues, Environment and Social goals. So, the main objectives are to analyze the impact of Carbon Credit Revenue on financial performance of power sector companies in India and to explore the Environmental and Social relevance of Carbon trading. The study also aims to explore the concept of Social Entrepreneurship.

Research Methodology

The present study is Descriptive and Empirical in nature that has studied the major Power Sector firms based on their market capitalization in India. The study tries to establish a relationship between carbon credit revenue and financial performance indicators of selected firms. Firm's overall health and its ability to achieve its financial objectives is measured by financial performance. It includes various metrics and dimensions like profitability, liquidity, solvency, and operational efficiency. Financial performance measures include both qualitative and quantitative methodologies. The present study focuses only on quantitative measures. Quantitative measures often

involve financial ratios, such as return on assets (ROA), return on equity (ROE), and net profit margin, which shows a firm's profitability and efficiency (Das Sarma, 2024).

To understand the impact of carbon credit revenue, it is essential to define the financial performance metrics that will be analyzed. Key indicators of profitability such as return on equity (ROE), return on capital employed (ROCE), earning per share (EPS) and enterprise value (EV) will serve as primary metrics to assess financial health. These metrics are critical for evaluating the overall financial performance of power sector companies, particularly in an environment where carbon credit revenues can provide a competitive edge. By assessing these indicators in relation to carbon credit revenues, the study aims to reveal the economic implications of carbon trading.

Among the different available financial indicators Earning per Share (EPS), Return on Equity (ROE), Return on Capital Employed (ROCE) and Enterprise Value (EV) have been selected for this study. The carbon credit revenue figures have been derived from companies' annual reports (2023-24) and the data regarding financial performance has been extracted from www.finology.com. Finology offers financial information about firms, especially those that are listed on Indian stock exchanges. The platform provides a number of resources and tools that allow users to investigate and assess a company's financial performance. Multiple regression analysis using software SPSS has been conducted to analyze the impact of Carbon Credit Revenue on Financial Performance.

Insert Table 1 here

Analysis

Carbon trading offers additional revenues to businesses to further invest in cleaner and sustainable technologies. By including environmental costs into business strategy, this revenue supports long-term financial sustainability, draws in ESG-focused investors, and fosters innovation. It helps in improving overall financial health and environmental goals and provides a favourable framework for change within the business by aligning with global climate change efforts.

The results of Multiple regression analysis using SPSS where independent variable is carbon credit revenue and dependent variable is financial performance indicators are as follows:

1. **Impact of Carbon Credit Revenue (CCR) on Earning per share(EPS)**

Insert Table 2 here

- **Dependent Variable**: EPS (Earnings Per Share)
- **Independent Variable**: CCR (assuming CCR is the predictor)

EPS is financial metric used to evaluate the profitability of a company. It gives the value of earnings per outstanding share of a company's common stock. While applying the Multiple Regression, the **coefficient of correlation (R)** is 0.115, indicating a weak positive linear relationship between CCR and EPS. As of now, CCR is not having much impact on EPS owing to its low magnitude but owing to the seriousness and significance CCR will gradually make the EPS stronger for sure i.e. CCR will aid enhancement in the EPS. The **coefficient of determination (R Square**) is 0.013 i.e. approximately 1.3% of the variance in EPS can be explained by the variance in CCR. **Adjusted R Square** is -0.110. A negative adjusted R Square suggests that CCR does not explain the variance in EPS adequately. **Std. Error of the Estimate** 11.17014 representing the standard deviation of the residuals (the differences between the observed and predicted values of EPS). A lower value indicates better predictive accuracy of the model.

The relationship between CCR and EPS is poor but not negative means, it still does not diminish the strategic importance of carbon credits. From long term environmental, financial and sustainability point of view, CCR have to be an important component of a firm’s overall strategy. The significance for CCR will rise as awareness regarding carbon markets rises, leading to a stronger future relationship with EPS. Poor correlation with EPS can be attributed to several factors like volatility in carbon credit prices, lag in financial recognition and complex accounting practices. Currently, CCR might be very minimal part of earnings but its importance in regulatory compliance, market positioning and long-term sustainability must not be underappreciated/overlooked.

Insert Table 3 here

In conclusion, based on the ANOVA table, The regression model with CCR does not provide a statistically significant explanation for the variance in EPS, as indicated by the high p-value (0.751) and low F-statistic (0.108). A high p-value (0.751) indicates the model as a whole is not statistically significant in predicting EPS and a low F-statistic like 0.108 suggests that the explained variance by the model is not statistically significant. To reiterate the significance of carbon credits, the study wants to point out that presently the statistical significance of this revenue may be low, but still the organizations cannot stop functioning in this direction. Even if the financial returns from carbon credits are minimal, the need of the hour is sustainability for the long terms. Hence, the environment and social impacts of such efforts need to be highlighted and propagated rather than the monetary benefits. With time, the regulatory authorities may need to devise mechanisms to monetize these benefits.

2. **Impact of Carbon Credit Revenues (CCR) on Return on Equity (ROE)**

Insert Table 4 here

- **Dependent Variable**: ROE (Return on Equity)
- **Independent Variable**: CCR (assuming CCR is the predictor)

ROE measures a company's profitability relative to shareholder's equity. It shows how company earns profits using equity finance. The model with CCR does not explain any of the variance in ROE (**R Square = 0.000).** The model fit is poor and potentially worse than having no predictors at all **(Adjusted R Square = -0.125)**. These results suggest that CCR does not predict or explain the variability in ROE in the context of this model. As shown in above table CCR's impact on ROE might be minimal because CCR contribution to company's overall revenue is very less. But CCR can have an indirect positive impact on ROE in long term specially if it attracts ESG focused investors and leads to a competitive world where carbon emissions will be regulated through proper carbon pricing mechanisms.

Here again, CCR are not explaining any financial impact on equity. But in today's times, when markets are governed by investor sentiments due to their emphasis on

the human, social and environmental factor in financial decision-making, deepen their comprehension of markets and offering insightful information to both investors and policymakers, the organizations need to understand and function to not only satisfy but also impress the shareholders who are quite aware about sustainability, SDGs, greenhouse gas emissions and ESG goals of executives(Gaur et al., 2024) .

Insert Table 5 here

The significant long-term impacts of carbon trading on the environment and society makes its implementation even more important. Even though the monetary benefits might not be felt at first glance still the benefits of lowering climate risks, ensuring regulatory compliance and improving firms' reputation are substantial.

Although the ANOVA results indicate that CCR doesn't significantly explain the variance in ROE as indicated by high p-value (0.971) and very low F-statistic (0.001), the overall relevance of carbon trading should not be forgotten. Carbon credits are essential weapons to fight against negative consequences of climate change. Now-a-days, corporates are engaging themselves with global regulatory frameworks regarding carbon pricing mechanisms and focusing on sustainability and climate responsibility.

3. **Impact of Carbon Credit Revenues (CCR) on Return on Capital Employed (ROCE)**

Insert Table 6 here

- **Dependent Variable**: ROCE (Return on Capital Employed)
- **Independent Variable**: CCR (assuming CCR is the predictor)

ROCE is used to determine how profitable and capital-efficient a company is. It indicates how successfully a business makes profit on its capital, which consists of both debt and equity. It assesses the profit a business makes on the capital it has invested. Here, the **coefficient of correlation (R)** is 0.143. This indicates a weak positive linear relationship between CCR and ROCE. The **coefficient of determination (R Square)** is 0.020. This means that approximately 2.0% of the variance in ROCE can be explained by the variance in CCR. **Adjusted R Square**

is -0.102. The adjusted R Square is a modified version of R Square that adjusts for the number of predictors in the model. **Std. Error of the Estimate** is 2.88040. It represents the standard deviation of the residuals (the differences between the observed and predicted values of ROCE). A lower value indicates better predictive accuracy of the model.

Carbon trading is not just about short-term financial benefits but about a future where carbon constraints become more stringent. Corporates opting for carbon trading are seen as mitigating environmental risks, making them more attractive to ESG focused investors. This may not immediately boost ROCE but can lead to better access to capital, higher stock valuations and long-term growth opportunities. Here, CCR explains a very less amount of variance in ROCE i.e. only 2% and the model fit as indicated by adjusted R Square is poor. But, keeping in mind SDG 13 (Climate Change), SDG 12 (Responsible Consumption and Production), and SDG 7 (Affordable and Clean Energy), it becomes necessary for corporates and society as a whole to mitigate GHG emissions and opt for carbon trading practices. Today companies are not just working to generate profits but the way that profits are generated is also questionable. As ROCE is considered to be the best profitability ratio the quality of profit and mode of earning is also a point of discussion. CCR give that leverage to companies to prove that their profits are environmentally and ecologically safe.

Insert Table 7 here

Based on the ANOVA table, the regression model with CCR does not provide a statistically significant explanation for the variance in ROCE, as indicated by the high p-value (0.693) and low F-statistic (0.167). This means that CCR does not significantly contribute to explaining the variability in ROCE in the context of this model. ROCE , an important indicator of financial performance shows how well an organisation utilizes its capital. The lack of substantial relation between CCR and ROCE may indicate that key financial performance indicators like ROCE have not yet been adequately included into the existing carbon trading schemes or the money earned from them. This problem arises because of lack of proper sustainability accounting practices. The International Accounting Standards Board (IASB) is working to improve the disclosure of climate-related risks in financial

statements, which could help alleviate some of the issues related to the discrepancy between carbon credit revenues and financial performance indicators like ROCE. The IASB is striving to ensure that climate-related risks are effectively reflected in financial reporting by enhancing the use and understanding of IFRS accounting standards (Climate-Related and Other Uncertainties in the Financial Statements Proposed Illustrative Examples International Accounting Standards Board Exposure Draft IFRS ® Accounting Standard, 2024).

4. Impact of Carbon Credit Revenues (CCR) on Enterprise Value (EV)

Insert Table 8 here

- **Dependent Variable**: EV (Enterprise Value)
- **Independent Variable**: CCR (assuming CCR is the predictor)

The coefficient of correlation (R) is 0.269. This indicates a weak positive linear relationship CCR and EV. The **coefficient of determination (R Square)** is 0.072. This means that approximately 7.2% of the variance in EV can be explained by the variance in CCR. **Adjusted R Square** is -0.044. The adjusted R Square is a modified version of R Square that adjusts for the number of predictors in the model. **Std. Error of the Estimate** is 34.44994. It represents the standard deviation of the residuals (the differences between the observed and predicted values of EV). A lower value indicates better predictive accuracy of the model.

Insert Table 9 here

The entire value of a firm is expressed as its Enterprise Value, or EV. All ownership interests and asset claims from both debt and equity are included, it considers the full market value rather than just the equity value(Corporate Finance Institute, 2024). Given that investors are increasingly taking environmental, social, and governance (ESG) concerns into account when valuing companies, EV can serve as a window into how the market perceives a company's ESG initiatives. EV and CCR consider how the market values a company's environmental efforts in addition to its financial performance. The regression model here with CCR does not provide a statistically significant explanation for the variance in EV, as indicated by the high p-value (0.453) and low F-statistic (0.623). This means that CCR does not significantly contribute to

explaining the variability in EV in the context of this model. But the organisations who actively employ carbon reduction plans and produce CCR could be viewed as progressive and in line with worldwide sustainability trends. This may attract investors who place a high value on ESG considerations, which will for sure have a beneficial impact on the company's EV.

The data analysis of this study reveals that the impact of CCR on FP indicators i.e. EPS, ROE, ROCE, and EV is currently minimal. The regression results show weak positive relationships between CCR and these financial metrics, with low coefficients of determination (R Square) and statistically insignificant p-values. However, these results do not diminish the strategic importance of CCR. Despite the current minimal impact, CCR's significance is expected to grow as companies integrate sustainable practices and regulatory frameworks evolve. Engaging in carbon credit practices supports long-term sustainability, market positioning, regulatory compliance, and investor attraction. Thus, while CCR may not yet significantly enhance financial metrics, its indirect benefits on a company’s future growth and alignment with environmental objectives should not be overlooked.

A Futuristic Approach : Social Entrepreneurship

Entrepreneurship has been long considered as a catalyst for economic development. The greater the growth of entrepreneurship, higher the growth of economy, infrastructure and other economic indicators. Entrepreneurship involves the identification, evaluation, and exploitation of opportunities (Shane & Venkataraman, 2000). The 21st Century has seen a tremendous rise in entrepreneurship. But of course with a heavy price – it brought unprecedented poverty, inequality, climate change, social imbalances, ecological disasters, governance mismanagements, are just a few to name. This ignited the emergence of a concept called Social Entrepreneurship that is a hybrid approach that combines the best of both worlds. Social entrepreneurs identify gaps where neither government nor traditional businesses can reach and introduce solutions that generate social value while ensuring financial self-sufficiency. These enterprises are not primarily concerned with profits; rather focus on fulfilling fundamental and societal needs (Certo & Miller, 2008). It is the process of identifying opportunities to fulfil the needs of the society. In this sense, social entrepreneurs are similar to entrepreneurs except that they are

motivated derived from social inequalities and social insufficiencies (Rawal, 2018). These entrepreneurs identified as change agents, believe in equality, are determined people, and believe in selflessness can bring significant changes to the society (Bulsara et al., 2015). Their success lies in their ability to build partnerships across sectors, engage communities, and mobilize resources in a way that maximizes both social and financial returns.

Today social entrepreneurship has emerged as a powerful force, driving societal, cultural, and environmental change. Unlike traditional businesses focused on profit maximization or NGOs which mainly are reliant on donations, social entrepreneurship combines the business models of both ventures - blending the mission driven focus of NGOs with the innovation and financial viability of the private sector. As the social problems faced by society gain prominence, it disrupts the existing businesses by bringing in market driven strategies, innovation, and sustainable business models. With a population of 142 crores (*World Bank Open Data*, n.d.), diverse socio-economic conditions and societal challenges, India is a land with a lot of potential for the growth of social entrepreneurs. Social entrepreneurs are transforming the way social problems are addressed through their unique business models. Sometimes, they have to face complexity related to measurement of social impact. Despite the hurdles, they continue to innovate and adapt, demonstrating that the pursuit of profit and social good need not be mutually exclusive. In a world where the boundaries between public, private, and non-profit sectors are increasingly blurred, social entrepreneurship represents a paradigm shift in how we think about social change. It offers a compelling alternative that harnesses the power of the market to achieve social good. In India, where traditional solutions often struggle to meet the scale and complexity of social problems, social entrepreneurs are showing a path forward that is both practical and visionary. As we navigate an era of profound social, economic, and environmental change, the lessons of social entrepreneurship offer valuable insights for building a more equitable, sustainable, and inclusive future.

Social entrepreneurs having major focus on addressing environmental issues as part of their main mission, take part in carbon pricing and trading schemes. They may directly help to reduce emissions, which is in line with their social and environmental goals.

Social enterprises (such waste management, clean energy initiatives, and reforestation) that engage in emission-reducing activities can obtain carbon credits. Businesses that need to offset their emissions may purchase these credits, and earn revenue that the company can utilise further in its social mission. Additionally, bigger organisations that prioritise strategic advancements might depend on and assist these smaller, more focused, and crucially, locally orientated social entrepreneurs by acting as facilitators that bridge the gap between social and financial needs.

Conclusion and Suggestions:

Global warming, climate change, non-seasonal rains, tsunamis, floods, earthquakes, rising of sea levels, melting of glaciers…..the list is endless. Thus, sustainability has become the hottest buzz word in the social, political, environmental and financial landscape. Mitigation strategies or remedial measures are becoming the key to success for any business organization for which they are adopting to concepts like carbon trading leading the path towards carbon net zero. To achieve these goals, standard setting bodies as well as organizations both are working hand in hand. Standard setting bodies like the IASB is working towards setting of reporting standards like IFRS to ensure proper reporting of such climate related facts in financial reports officially and mandatorily. Organizations on the other hand are adopting to trading of carbon credits, setting up of system for emission disclosures, putting all efforts to negate carbon emissions, moving towards renewable energy resources and even looking out for social entrepreneurs to support their mission towards carbon net zero. These socially engaged private sector companies excel in creating positive social and environmental impacts while addressing critical climate change challenges. They utilize their business acumen and creativity to establish ventures that promote sustainable practices, such as the adoption of renewable energy, waste reduction, and sustainable agriculture. To sum up, social entrepreneurship has the potential to foster behaviors that contribute to a more sustainable and resilient future. The organizations to whichever sector they may belong to, have to continuously work towards sustainability and social causes along with the financial gains. The paper not just emphasizes the financial aspects of carbon trading but also signifies the social benefits for long-term survival of the organization.

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Tables

Table 1- Selected Power Sector Companies in India (2023-2024)

S.No	Company	Share Price (₹)	MCAP (Cr.)	P/B	P/E	EPS (₹)	ROE (%)	ROCE (%)	P/S	EV/EBITDA	Carbon Credit Revenue (%)
1	NTPC	364.65	3,53,588.93	2.36	20.87	17.48	12.85	10.44	2.18	11.39	11
2	Power Grid Corp	332.20	3,08,966.06	3.56	19.38	17.14	19.29	12.95	7.13	10.63	2.54
3	Adani Green Energy	1,723.30	2,72,976.32	61.87	0	-3.45	-11.72	4.24	22.75	256.42	1.91
4	Tata Power	414.15	1,32,334.99	8.39	59.35	6.98	15.13	13.46	6.59	26.29	6.23
5	JSW Energy	705.00	1,23,217.68	6.06	118.72	5.94	6.64	7.90	24.02	64.78	0.44
6	NHPC	106.27	1,06,748.59	2.86	30.41	3.49	11.13	8.07	11.46	24.12	4.24
7	Torrent Power	1,526.50	73,366.15	6.09	40.80	37.41	15.60	15.69	3.68	19.01	3.03
8	SJVN	140.90	55,370.81	3.95	60.31	2.34	10.12	11.05	18.86	30.21	0.06
9	Neyveli Lignite	269.84	37,417.00	2.34	20.26	13.32	8.78	10.33	2.89	9.18	0.45
10	CESC	167.41	22,191.38	2.24	28.63	5.85	8.34	9.71	2.78	12.83	6.98

(Source- Financial Indicators www.finology.com

Carbon credit revenue figures are own computed and derived from companies' annual reports)

Table 2- Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.115[a]	.013	-.110	11.17014

a. Predictors: (Constant), CCR

b. Dependent Variable: EPS

Table 3- Anova

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	13.428	1	13.428	.108	.751[b]
	Residual	998.176	8	124.772		
	Total	1011.604	9			

a. Dependent Variable: EPS

b. Predictors: (Constant), CCR

Table 4- Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.013[a]	.000	-.125	4.61097

a. Predictors: (Constant), CCR

b. Dependent Variable: ROE

Table 5- Anova

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.029	1	.029	.001	.971[b]
	Residual	170.088	8	21.261		
	Total	170.117	9			

a. Dependent Variable: ROE

b. Predictors: (Constant), CCR

Table 6- Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.143[a]	.020	-.102	2.88040

a. Predictors: (Constant), CCR

b. Dependent Variable: ROCE

Table 7- Anova

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.387	1	1.387	.167	.693[b]
	Residual	66.374	8	8.297		
	Total	67.761	9			

a. Dependent Variable: ROCE

b. Predictors: (Constant), CCR

Table 8- Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.269[a]	.072	-.044	34.44994

a. Predictors: (Constant), CCR

b. Dependent Variable: EV

Table 9- ANOVA[a]

Model		Sum of Squares	df	Mean Square		Sig.
1	Regression	739.168	1	739.168	.623	.453[b]
	Residual	9494.389	8	1186.799		
	Total	10233.557	9			

a. Dependent Variable: EV

b. Predictors: (Constant), CCR F