

# Indian and Japanese Companies Adherence to ESG Reporting and its impact on Financial Performance

**Dr. Meenu Maheshwari**

Associate Professor  
Department of Commerce and  
Management University of Kota, Kota (Raj.)  
E-Mail: drmeenumaheshwari@gmail.com

**Priyanka**

Research Scholar  
Department of Commerce and Management  
University of Kota, Kota (Raj.)  
Corresponding Author  
E-Mail: priyankap000786@gmail.com

## Abstract

Energy production in the last century has been chiefly done by extracting and burning fossil fuels. However, the continued use of these fuels has released significant amounts of greenhouse gases that have raised global temperatures. It is the collective responsibility of the energy sector to reduce fossil fuel usage and increase the use of clean energy sources. Because of these reasons, ESG reporting has become an important concept. The present article has observed four significant energy generation organisations from India and Japan; their reporting and financial data have been compared within the study to understand their impact. Secondary sources of data were collected from annual reports of the four companies along with ESG score of Refinitiv. A regression analysis was done in the process to understand the relationship between ESG reporting and financial performance. The findings of the study have been able to establish a significant relationship between ESG reporting and financial performance for companies in the power sector of the two countries.

**Keywords:** ESG Reporting, Financial Performance, Technological Advancement, Waste Reduction, Clean Energy, Renewable Energy

## Introduction

The power generation sector is one of the essential aspects of a nation as it helps generate electrical power, which is necessary for any society to prosper. The climate crisis and rise in global temperature require better utilisation of renewable resources and clean energy, as a result, India and Japan have acknowledged the need to explore different options for a secure and stable energy supply. Both countries have agreed that there is no one particular method to reduce carbon emissions and that it can be tackled through cooperation between the different countries. Japan has initiated a target to achieve net zero by the year 2050, while India has set its target by 2070 (Government of India, 2022). This partnership between the two countries has led to sustainability prospects that mutually can benefit both countries. The Ministry of External Affairs has suggested that the collaboration will result in clean growth that will

influence job creation, innovation and investments. Mint (2022), in their analysis, has stated that both countries continue to improve collaborations to reach a Joint Crediting Mechanism (JCM).

Japan's Asia Energy Transition Initiative (AETI), which was launched in the year 2021, aimed at helping the different Association of South East Asian Nations (ASEAN) countries to achieve net zero for the benefit of the planet. The partnership has opened new potential and opportunities for India to transition into sustainable energy (Down to Earth, 2023). The present article will therefore compare the performance of different companies in India and Japan's power generation sectors. These companies' ESG reporting and financial performance will primarily be compared as strong ESG performance often shows a positive correlation with high equity returns, directly reducing the risks associated with the method. Different kinds of ESG issues have been identified in the Indian power generation sector, particularly problems related to the use of fossil fuel production, reduction of business deals and also while incorporating ESG into the decision making process of the organisation (Energy World, 2023). The present research will therefore help by casting light on all of these different issues and potential ways through which financial performances of this sector can be improved.

## Literature Review

ESG reporting helps disclose all of an organisation's important environmental, social and corporate governance data; the data from the reporting helps shed light on the organisation's different activities and maintains transparency with governing bodies and investors. In the research study carried out by Baran et al. (2022), the researcher carried out a comparative study by comparing the ESG reporting of multiple Polish companies and the relation it shares with the company's financial performance. Companies started addressing the ESG issues of a company can help increase trust within the company and among its stakeholders. The study's findings have found that the energy sector has made immense contributions to the economy and that many of the energy sectors in Poland have been transforming themselves into energy-efficient methods. Other side, the relationship between

sustainability, ESG and financial performance among Chinese firms has been portrayed by Zhao et al. (2018). The findings show a positive relationship between ESG and financial performance; developing countries require more supervisory standards and enforcement for successful implementation. The research carried out by Koundouri, Pittis & Plataniotis (2022) has shed light on the impact of ESG performance on European firms. 44 top European companies analysed for this research; the results point towards good ESG performance and sound financial results.

Lack of standardisation is one of the significant reasons that hold back ESG investors, as Dye, McKinnon & Van der Byl (2021) pointed out. However, the European financial sector has been leading the way in making changes and defining climate risks while setting targets and measuring performance. The findings further point towards the oil and gas industry to demonstrate the variability between firms. Kumar & Firoz (2022) have collected data sets from 77 different Indian power companies; the research findings confirm that better ESG practices have the potential to increase the company's creditability, promote corporate ethical practices and generate a good image for the company. Naimy, El Khoury & Iskandar (2021) have collected their data from 108 East Asian listed firms; the findings show that the relationship between ESG and financial performance depends on several factors such as CFP measures, nature of the industry and accountability levels of the organisation. Another piece of literature by Domanovi (2022) states that maintaining transparency during the era of climate crisis helps investors make responsible decisions. The research has primarily been conducted on the energy sectors of Serbia between 2017 and 2019; the results show that the enterprises mainly report on the traditional financial measures in their financial statement. Out of all the companies observed, only one has been found to report all ESG indicators properly, while the rest do partial reporting; this has prevented any active relation between the financial performances.

## Research Methodology

### Data collection methods

The focus of the present research has been on conducting a comparative study on the power generation sector of India and Japan. A comparative research method has been chosen as it can help understand the vital aspects of the four selected companies and how their potential can be increased. The chosen companies from India are Power Grid Corporation Of India Ltd. and NTPC Ltd. Other hand, the Japanese companies selected include Tokyo Electric Power Company Holdings, Inc. (TEPCO) and Kansai Electric Power Co., Inc. A secondary data collection method has been adopted to collect both qualitative and quantitative data. The data will be directly collected from the official websites and portals of the organisations to get access to authentic data. The sustainability reports and Refinitiv ESG Score has been used to assess the ESG information and industry rankings of all the companies while financial reports have been used to collect the financial data.

### Data analysis technique

The data has been analysed with the help of MS Excel and presented using tables to provide a descriptive understanding of the different phenomena. To be more specific, a regression analysis will be done to establish the relationship between ESG Reporting and financial performance. The ESG profiles of both the Indian and Japanese companies will be evaluated from Sustainability

Reports of the companies as well as the Refinitiv ESG Scoring system. On the other hand, the Return on Capital Employed (ROCE) has been used to assess the financial performance of the companies along with other financial indicators. Further, the regression analysis between the ESG score and ROCE has been to establish the relationship between the variables and test the hypothesis.

### Research Question

What is the overall relationship that is shared between ESG reporting and financial performance in the power generation sector?

### Hypothesis

**H0:** There is no relationship between ESG reporting and financial performance in the power generation sector of India and Japan.

**H1:** There is a significant relationship between ESG reporting and financial performance in the power generation sector of India and Japan.

### Findings

#### ESG Reporting and Score (India)

##### Power Grid Corporation of India Ltd

The detailed ESG score for the company has been provided in the below table from the Refinitiv Company Scores along with the industry ranking. A detailed interpretation of the scores based on the annual reports have been provided below the table.

**Table 1: Refinitiv ESG Score of Power Grid Corporation of India Ltd.**

Environment- 68		Social- 76		Governance- 18	
Emissions	79	Human Rights	48	Management	11
Resource Use	82	Workforce	81	Shareholders	35
Innovation	40	Community	84	CSR Strategy	31
<b>Total score: 58</b>					
<b>Industry ranking: 121/305</b>					

As evident from the above table, the total ESG score of the company is 58 out of 100 and the industry ranking is 121/305. Based on the score and rankings, it suggests that the company has a relatively good ESG reporting and an average degree of transparency. The annual report on the

last five years of Power Grid has showed that the company continues to adhere to international environmental standards such as ISO 14001:2015, ISO 9001:2015 and OHSAS 18001:2007. The ISO certificate helps the company remain accountable and carry out organisational

procedures without hindrances. Power Grid has adopted many innovative technological tools over the years to ensure their service has better availability; some technological advances include Aerial Patrolling of Transmission lines and App-based Patrolling. Online web-based training programmes have been made available for all employees; the training sessions are well documented to keep track of employee progress. Different training programs focus on induction, hands-on, managerial and behaviour. Due to the nature of the work, the organisation produces only a little waste; the waste is restricted to metal scraps, used batteries and e-waste. The company wastewater, primarily domestic sewage, gets treated before release. Limited information on production is available, which must provide clear information on all the internal processes.

In order to combat climate change, the company is installing 5 MWp Rooftop Solar PV Systems, among the

various other protocols it's taking to reduce its carbon footprint. Renewable energy sources are constantly being used, and different local integration programs have been linked to the company, the details of which are available in the company's annual report; solar and wind power have been considered, among other factors. Despite the company's focus on clean energy, only a little information is available on its energy projects that still need to be completed. Local competitive bidding processes are encouraged to get the local communities more involved with the business processes; the company also empower the local communities through sustainable business processes. Data on company emissions are available on the annual reports, alongside protocols being adopted to reduce the emissions; using solar energy as an energy source is believed to reduce the carbon footprint.

**Table 2: Refinitiv ESG Score of NTPC Ltd.**

**NTPC Ltd.**

Environment- 52		Social- 71		Governance- 19	
Emissions	61	Human Rights	93	Management	7
Resource Use	87	Workforce	66	Shareholders	14
Innovation	0	Community	46	CSR Strategy	86
<b>Total score: 50</b>					
<b>Industry ranking: 163/305</b>					

(Source: Refinitiv, 2023)

The table above shows the ESG Score of NTPC, the collective score acquired by the company is 50; it offers an average level of public transparency in sharing data. All of NTPC stations in India have dedicated environmental cells that meet the standards of ISO 14001, the company maintains all power sector-related standards. NTPC introduced a bio-diversity policy in 2018 to ensure the company maintains conservative and enrichment practices. While sustainability is the main focus, technology advancements are also prioritised to improve energy efficiency; the company has invested in carbon sink development. The company uses closed-cycle cooling systems with cooling towers to have minimal environmental impacts. Significant investments are made in training employees to promote safety and commitment to

a safe environment. The capacity-building programs of the company focus on enhancing employees' knowledge and awareness of environmental issues. NTPC actively promotes sanitation waste management projects to help properly handle and dispose of waste. Auctions are conducted on the recyclable scrap waste; other waste is managed as per Waste Management Policy & applicable govt. Regulations.

NTPC is one of the leading coal producers; the production process and details on coal are available in the annual report. To deal with the climate crisis, the corporation has been diversifying its resources to find a balance between thermal and clean renewable energy resources. Being a coal producer, NTPC continues to use both renewable and non-renewable resources but is determined to increase

renewable resources by 45-50% before 2030. NTPC is working closely with multiple government and private institutions on projects. The green hydrogen mobility project in Delhi is being done with a partnership from the Indian army. The local communities near the plants are

always supported through advocacy, capacity building and academics. Biomass fuels are being blended to reduce greenhouse gas emissions; the company has anticipated the reduction of CO2 emissions within the next 5 years.

**Table 3: Refinitiv ESG Score of Tokyo Electric Power Company Holdings, Inc. (TEPCO)**

**ESG Reporting and Score (Japan)  
Tokyo Electric Power Company Holdings**

Environment- 71		Social- 43		Governance- 61	
Emissions	83	Human Rights	24	Management	75
Resource Use	68	Workforce	63	Shareholders	15
Innovation	58	Community	14	CSR Strategy	68
<b>Total score: 60</b>					
<b>Industry ranking: 114/315</b>					

(Source: Refinitiv, 2023)

The above table casts light on the ESG performance of TEPCO, the company also ranks in the third quartile range, confirming that the reporting done by the company has average degree of transparency. TEPCO considers ISO 14001 to be a practical certificate that helps in the assessment of the company's EMS operations. Technological advancements are one of the top priorities of the TEPCO group, as decarbonisation, resilience strengthening, and digital technology are all being incorporated within the business protocol. Offshore wind power, hydrogen, and ammonia production are some of the other recent contributions of the company. The human assets within the company are highly valued, and therefore, training and development are prioritised. Nuclear safety is a top priority for the TEPCO group; the water is treated within the plant before being released, and fuel debris retrieval procedures and other countermeasures are

implemented within the company. The fuel production details are available however, information on the production process is unavailable.

The climate issue is handled critically within TEPCO; the regulatory aspects of the company focus on innovation to reduce CO2 emissions. The use of fossil fuels within the plant has dramatically been limited; the temperature within the plant is kept within the range of 1.5-2C. Renewable energy sources are used as the primary energy source within the organisation. The company prioritises geothermal power generation operations. The company is involved with many government projects for rebuilding and restoring cities and other intercontinental projects. The company constantly prioritises the local communities of Fukushima over its interests. The company is actively reducing its CO2 emissions; it is estimated to drop by 85% by 2030.

**Table 4: Refinitiv ESG Score of Kansai Electric Power Co., Inc.**

**Kansai Electric Power Co.**

Environment- 81		Social- 54		Governance- 49	
Emissions	89	Human Rights	29	Management	57
Resource Use	93	Workforce	83	Shareholders	35
Innovation	58	Community	39	CSR Strategy	42
<b>Total score: 65</b>					
<b>Industry ranking: 91/305</b>					

(Source: Refinitiv, 2023)

The above table in this section, showcases the ESG score of Kansai Electric Power, the score acquired by the company is 65, highest among the four companies observed. Overall the company ranks in the third quartile as well and has a decent amount of reporting of ESG data publicly. The Kansai Electric Power adhere by the Ministry of the Environments Guidelines and ISO 26000, suggesting that the company makes positive impacts on the environment. The group has worked closely to leverage technological developments to make green energy available worldwide; AI technology and big data are some of the modern technologies adopted within the business process. The employees are mandated to participate in disaster response training that is sponsored by external agencies; they are also made more conscious of the environment. The nuclear

waste that is produced within the company is disposed of properly; waste is eliminated through specific reviews. While the company has made information available on the production, the process needs to be more detailed in the annual reports. The company understands the importance of addressing climate issues and constantly discovers eco-friendly business methods. Renewable energy and storage batteries are prioritised to reduce the environmental impact of the company practices. The company is currently working on 22 projects in 11 countries and hopes to expand further to make energy available without harming the planet. The company is adamant about achieving net zero by 2050; different initiatives are constantly adapted to meet the needs of the company with reduced emissions.

**Table 5: ROCE of the companies**

**Financial performance of the Indian and Japanese companies- ROCE**

Company	ROCE
NTPC	8.6
Power Grid	11
TEPCO	3.5
Kansai Electric Power	1.6

(Source: Annual reports of the companies)

**Table 6: Comparison of ESG Score and ROCE for India and Japan companies**

**Comparison between India and Japan**

Company	ESG Score	Industry Ranking	ROCE
NTPC	50	168/305	8.6
Power Grid	58	121/305	11
TEPCO	60	114/315	3.5
Kansai Electric Power	65	91/305	1.6

The above table shows the required comparison between the two nation companies based on their ESG score and ROCE. It can be inferred from the above table that the ESG performance of Japanese companies is better than the Indian companies. On the other hand, based on the ROCE value, it can be inferred that the financial performance of

Indian companies is better than the Japanese companies. This further establishes the need to establish the relationship between the two variables and the next section of the article will help provide the required insights on the topic.

## Relationship between ESG Reporting and financial performance

**Table 7: Regression Analysis**

### Regression statistics

Regression Statistics	
Multiple R	0.83982
R Square	0.7053
Adjusted R Square	0.4106
Standard Error	2.76807
Observations	3

(Source: MS Excel)

The results of the regression analysis between ESG score and ROCE has been provided above for the companies of India and Japan. The multiple R value which is the

correlation value is 0.84 and this indicates that there is a positive relationship between ESG score and ROCE.

**Table 8: ANOVA statistics**

### ANOVA table

ANOVA								
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	1	18.33780866	18.33780866	2.393285139	0.365319037			
Residual	1	7.662191337	7.662191337					
Total	2	26						
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	64.2695	2.649652782	24.25583163	0.026231195	30.60250104	97.93656251	30.60250104	97.93656251
8.6	-0.6092	0.393807261	-1.547024609	0.365319037	-5.613025208	4.39456616	-5.613025208	4.39456616

(Source: MS Excel)

The p-value is further less than 0.05 which indicates that the null hypothesis needs to be rejected in the process. Hence, this leads to the conclusion that there is a significant relationship between ESG reporting and financial performance of companies in the power sector of both India and Japan.

### Discussion

The energy sector significantly contributes to the economy, as the energy created creates newer industries and services. The present research has thoroughly observed disclosures publicly available of the two Indian and Japanese power industries chosen for the study. The number of disclosures that were met was then compared to the financial performance of the company, particularly ROCE as both companies are from different countries, there are

differences in the information reported by both companies. The ESG disclosures have focused on environmental, social and governance information that is publicly available. All four companies adhere to some International environmental standards; Power Grid, NTPC and TEPCO follow ISO 14001, while Kansai follows the Ministry of the Environment Guidelines. Each company has made an effort to make most of its environmental activities and other company information publicly available. Watson et al. (2019) have researched emerging clean energy sources, and the findings have shown how the wind power sector is undergoing a significant transformation to produce more wind energy. The annual reports of the companies studied have also revealed that the companies have been trying to switch to clean energy sources for their operations.

Majid (2020) has argued that it is essential for organisations

to take training and educational initiatives for the development of renewable energy sources. Employees trained in the field are more capable of overcoming obstacles and barriers. The ESG reporting has shed light on company initiatives to reduce waste and preserve the local ecosystems. Each power sector is unique and uses different methods for producing electricity; this includes coal, wind, hydro, solar, nuclear, thermal and gas. The waste of each of the companies is treated before disposal; Porter, Serafeim & Kramer (2019) have elaborated on this aspect and have shared how organisations need to be driven to reduce waste. Information on the production processes have yet to be made available for most of the companies that have been analysed. Renewable energy has been helping many organisations globally to switch to mitigate climate change's consequences (Gielen et al. 2019). Accordingly, the four companies that have been assessed are constantly implementing new innovative methods to produce clean energy. The Refinitiv score provided on each of the companies has further shed light on their strong points and areas they lack. The financial analysis that has been conducted in the above section has shown how there is a strong connection between ESG reporting and financial performance; among the organisations studied, the ones with the highest ESG scores tend to have higher financial performance.

## Conclusion

As concluding remarks for the present research, it can be observed how organisations are required to be transparent and objective with their practices; the ESG reports of the company show the effectiveness and commitment of the company to the climate cause. A detailed analysis has been carried out in the study on several environmental disclosures made by the four chosen Indian and Japanese companies as well as a critique of their financial performance to understand the relationship that is shared between these two aspects. It can be concluded that there exists strong relationship between these factors. However, there still remains scope to conduct a study an extensive research on the topic by looking at various other financial indicators and developed appropriate model to perform the analysis.

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