



## Impact of ESG Factors on Long-Term Sustainability-An Empirical Analysis

Dr.K.Jagannayaki<sup>1</sup>, Dr.T.Vara Lakshmi<sup>2</sup>, V.Rashmitha<sup>3</sup>

<sup>1,2,3</sup>Department of MBA, Institute of Aeronautical Engineering, Dundigal, Hyderabad-Telangana, India

**Email:** [kjagannayaki@gmail.com](mailto:kjagannayaki@gmail.com)<sup>1</sup>, [mvaralu2011@gmail.com](mailto:mvaralu2011@gmail.com)<sup>2</sup>

### Abstract

The paper titled “**Impact of ESG factors on Long-term Sustainability -An Empirical Analysis**” is a topic of growing importance in the field of finance and corporate governance. ESG factors encompass a wide range of issues, including environmental sustainability, social responsibility, and governance practices. Understanding how these factors affect a company's financial performance is crucial for investors, regulators, and other stakeholders. This paper aims to provide an overview of the relationship between ESG factors and the financial health of select companies. It will examine how ESG factors can influence key financial metrics such as revenue, profitability, and stock performance. By analyzing case studies and empirical research, the paper will highlight the impact of ESG factors on the long-term sustainability and competitiveness of companies in various industries. By understanding the link between ESG factors and financial health, investors can make more informed decisions that align with their values and long-term financial goals. Companies utilize this information to improve their ESG practices and enhance their overall financial performance.

**Keywords:** Environmental, Social, Governance , Sustainability, Financial performance.

### 1. Introduction

Environmental, Social, and Governance (ESG) factors have emerged as critical considerations for investors, regulators, and stakeholders concerned with sustainable business practices and long-term value creation. ESG factors encompass a broad range of issues that reflect a company's impact on the environment, society, and its governance structure. In recent years, there has been a growing recognition of the importance of ESG factors in assessing a company's overall performance and risk profile. Investors are increasingly integrating ESG considerations into their investment decisions, viewing companies with strong [1] ESG practices as more sustainable and potentially more resilient to market fluctuations and regulatory changes. ESG factors refer to a set of criteria that investors use to evaluate a company's performance in terms of environmental sustainability, social responsibility, and corporate governance practices. These factors are seen as indicators of a company's long-term sustainability and are used by investors to assess the

potential risks and opportunities associated with an investment. For companies, integrating ESG factors into their business practices can lead to improved operational efficiency, reduced risk exposure, and enhanced reputation among stakeholders. Additionally, investors are increasingly looking for companies that demonstrate strong ESG performance, as they believe that such companies are better positioned to deliver long-term value. This paper aims to explore the ESG factors of NTPC, a leading public sector undertaking in the energy sector. company, and their impact on the company's financial performance and overall sustainability [2]. By examining the company's ESG practices and performance, to provide insights into how companies can effectively integrate ESG considerations into their business strategies to drive long-term value creation.

#### 1.1. Purpose

To analyze how Environmental, Social, and Governance (ESG) factors affect the financial performance and overall health of a specific company



and examine the relationship between the company's ESG practices and its financial outcomes, such as profitability, stock performance, and risk management [3]. The study seeks to provide insights into the importance of ESG factors in driving long-term value creation for investors and stakeholders.

## 2. Method

The methodology for the data presented involves a review and analysis of NTPC's annual reports, sustainability reports [4], and other publicly available documents. Information regarding NTPC's water

conservation efforts, ESG policies, and safety framework was extracted and synthesized to highlight key achievements and initiatives table 1. The analysis focused on identifying trends, patterns, and key focus areas within NTPC's sustainability and ESG practices [5]. Relevant industry benchmarks and best practices were considered to provide context and comparison [6]. The findings were then structured into concise observations to showcase NTPC's commitment to sustainability and responsible business practices table 2.

**Table 1 Reuse & Recycle of 97% Water by NTPC**

Description	Unit	FY 2021-22
Rain water	Lakh KL	69.26
Surface water storage	Lakh KL	59.63
Groundwater recharge	Lakh KL	9.63
<b>Waste water reuse &amp; recycling</b>		
Waste water generated	Lakh KL	3411.38
Waste water reused (no treatment)	Lakh KL	2592.43
Wastewater treated	Lakh KL	857.11
Primary treatment	Lakh KL	34.45
Secondary treatment	Lakh KL	820.14
Tertiary treatment	Lakh KL	2.52
Waste water recycled	Lakh KL	760.59
Primary treatment	Lakh KL	22.85
Secondary treatment	Lakh KL	735.59
Tertiary treatment	Lakh KL	2.15
Waste water (treated) discharged	Lakh KL	98.01
Percentage of recycled and reused water	%	97%



**Table 2 Safety Framework**

Component 1 (Safety Policy & Objectives)	Component 2 (Safety Risk Management)	Component 3 (Safety Assurance)	Component-4 (safety promotion)
Safety Policy, issue, revision & awareness	Hazard identification	Legal, statutory & other compliance's	Competencies & training
Management commitment & safety accountability	Safety risk assessment & mitigation	Management of change	Safety communication
Appointment of key safety roles	Incident reporting & investigating	Continual improvement	Safety awareness, rewards & recognition program
Emergency response 40 planning	Incident recall	Contractors & contract control)	
Safety objectives & safety plans			

**Table 3 Governance Factor NTPC Company ESG Policies**

Environment Policy, 2022	Rainwater Harvesting Policy, 2018
Water Policy, 2022	Sustainable Supply Chain Policy
Biodiversity Policy, 2022	Human Rights Policy, 2018
Waste Management Policy, 2022	Safety Policy, 2022
Ash Policy, 2015	Complaint Handling Policy, 2023
E-waste Policy, 2014	Whistle Blower Policy, 2014
Integrated Plastic Management Policy, 2019	Fraud Prevention Policy, 2007

### 3. Results and Discussion

#### 3.1 Results

NTPC's water conservation efforts in FY 2021-22 were impressive, with a 97% reuse and recycle rate achieved. This was accomplished through

initiatives like rainwater harvesting, surface water storage, and groundwater recharge [7]. The company recycled 760.59 Lakh KL of wastewater after treatment, showcasing its commitment to environmental stewardship and resource efficiency table 3. These efforts highlight NTPC's proactive approach to sustainable operations and its contribution to water conservation [8]. NTPC's ESG policies cover a broad spectrum of environmental, social, and governance issues, showcasing its commitment to sustainability and responsible business practices. The company's focus on environmental conservation is evident through policies on biodiversity [9], ash management, e-waste, and water usage. Socially, NTPC emphasizes CSR, human rights, safety, and rehabilitation [10]. Governance is underscored by transparency and accountability measures such as fraud prevention, whistle-blowing, director training, and complaint handling policies. This comprehensive framework reflects NTPC's alignment with ESG principles [11].

#### Conclusion

In conclusion, NTPC's ESG efforts are commendable, showcasing a commitment to sustainability, responsible business practices, and employee well-being. The company's water conservation initiatives, impressive reuse and recycle rates, and comprehensive ESG policies demonstrate proactive environmental stewardship.



Furthermore, NTPC's robust safety framework and focus on governance highlight a commitment to ethical conduct and transparency. Overall, NTPC's holistic approach to ESG principles not only aligns with global sustainability goals but also sets a benchmark for responsible corporate practices in the energy sector.

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