International Journal of Environmental Sciences
ISSN: 2229-7359
Vol. 11 No. 6s,2025
https://theaspd.com/index.php

A Case Study Analysis Of The Environmental Sustainability Performance Of Infosys - A Reputed Firm In India

Ashok Kumar C.S.[1],Pranab Bhardwaj[2],Dr. Chandibai Potsangbam[3]
[1]*Research Scholar, Department of Management,Manipur International University*
[2]*Research Scholar, Department of Management,Manipur International University*
[3]*Associate Professor,Manipur International University*

Abstract: *Environment, Social, and Governance goals are becoming table stakes in the business environment(Kim & Oh, 2019) . This paper presents a comprehensive case study analysis of the sustainability performance of Infosys, a renowned firm operating in India. Infosys is a global IT services company with major operations across India. It also has announced a bold ESG vision for the year 2030. This research's primary interest is in the environmental (E) aspect of ESG, it analysed the past five years of data from annual reports, integrated sustainability reports, and news articles, to understand the various trends, relationships, and patterns. The paper goes on to analyse the company's practices and strategies in energy consumption, waste management, and water usage was analysed in detail to construct a comprehensive evaluation of the company's sustainability practices. From the analysis of the results, it certainly concludes that the strategies and practices employed by Infosys for managing sustainability have been effective. These results and analysis commensurate with the overall ESG vision and demonstrate successful integration of strategy in the business operations. The findings contribute to the growing body of literature on corporate sustainability and offer valuable implications for practitioners, policymakers, and stakeholders interested in fostering sustainable business practices in India and beyond.*
Keywords: *ESG, Environment, Social, Governance, Sustainability, Carbon Neutrality, Infosys*

INTRODUCTION TO SUSTAINABILITY AND INFOSYS

Sustainability has transitioned from being a niche concern to a mainstream business mega-trend (Lubin & Esty, 2010), impacting consumer behavior, regulatory frameworks, and investor expectations. Successful companies integrate sustainability into their core business strategies rather than treating it as a separate initiative. This involves aligning sustainability goals with overall business objectives and creating value for shareholders, customers, and society. (Hahn & Kühnen, 2013) emphasized the significance of sustainability reporting in enabling companies to reaffirm the environmental and social impacts of their products and services.

Infosys' growth story is one of entrepreneurial spirit, innovation, and global impact Starting small, Infosys has grown into a global giant, playing a pivotal role in India's emergence as a major IT. By spearheading IT adoption, Infosys has empowered Indian businesses to compete globally and improve operational efficiency (*The Infosys Story*, 2022). Infosys is a major player in the global IT services sector, consistently ranking among the world's leading companies. It is the only Indian company to be featured in Time Magazine's World's Best Companies of 2023 (*World's Best Companies of 2023*, n.d.). Infosys' ESG vision reflects its commitment to driving positive change in environmental stewardship, social responsibility, and corporate governance while leveraging technology as a catalyst for sustainable development (*INFOSYS ESG VISION 2030*, 2020).

Theoretical Perspective and Literature Review

Sustainability and Business Strategy

United Nations World Commission on Environment and Development, in their seminal report (*Our Common Future*, 1987) , defines sustainable development as "Development that meets the needs of the present without compromising the ability of future generations to meet their needs". It examines the intricate interplay among pivotal issues such as poverty alleviation, environmental conservation, economic advancement, and sustainable development. Emphasizing the imperative for international collaboration to confront environmental challenges, it advocates for concerted efforts from governments, corporations, and individuals to realize sustainable development objectives, thereby harmonizing diverse imperatives of economic expansion with the ethos of sustainability.

Sustainability has evolved from a corporate social responsibility concern to a critical business imperative. Lubin and Esty argue that companies that fail to take sustainability seriously will fall behind their competitors. Sustainability is no longer a "nice-to-have" but rather a "must-have" for businesses looking to create long-term value and remain competitive (Lubin & Esty, 2010)

The triple bottom line is a very noteworthy framework in the field of sustainability that measures and examines a company's performance across social, environmental, and economic impacts. (Elkington, 2004) proposes that three dimensions of the triple bottom line are "people, planet, and profit"

Life Cycle Assessment

(International Organization for Standardization, n.d.) According to ISO 14040, LCA is defined as the "compilation and evaluation of the inputs, outputs, and the potential environmental impacts of a product system throughout its life cycle". The concept of Life Cycle Analysis involves assessing the environmental impacts associated with all stages of a product's life cycle, from raw material extraction through production, use, and disposal. This holistic approach allows for a comprehensive evaluation of a product's environmental footprint and helps identify opportunities for improvement and sustainability. (Finkbeiner et al., 2010)

Emissions

The definitions of Scope 1, Scope 2, and Scope 3 emissions as provided are based on the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard, developed by the World Resources Institute (Ranganathan, 2015) and the World Business Council for Sustainable Development. This standard is widely recognized as the global framework for businesses to measure and manage their greenhouse gas emissions

a. Scope 1 Emissions: Scope 1 emissions are direct greenhouse gas emissions that occur from sources that are owned or controlled by the reporting entity. These emissions typically include emissions from the combustion of fossil fuels in owned or controlled equipment, such as emissions from onsite fuel combustion in boilers, furnaces, vehicles, and other equipment (Ranganathan, 2015).

b. Scope 2 Emissions: Scope 2 emissions are indirect greenhouse gas emissions associated with the consumption of purchased or acquired electricity, steam, heat, or cooling by the reporting entity. These emissions result from the generation of electricity etc that is consumed by the reporting entity, but produced by a third party, such as a utility company (Ranganathan, 2015).

c. Scope 3 Emissions: Scope 3 emissions are all other indirect greenhouse gas emissions that occur in the value chain of the reporting entity, including both upstream and downstream emissions. (World Resources Institute, n.d.) These emissions can result from activities such as extraction and production of purchased materials, transportation of goods and services, use of products sold by the reporting entity, and disposal of waste generated by the reporting entity (Ranganathan, 2015).

METHODOLOGY AND OBJECTIVE

This is a case study-based study to gain an in-depth understanding of the Sustainability performance of an Indian firm within its real-life context. Past five years, annual reports and integrated sustainability reports were analysed to understand the various trends, relationships, and patterns within the data. Also, news reports and articles were gathered and analysed. Interviews with important stakeholders with Infosys were carried out to understand some of the intrinsic reasons that form the qualitative dataset for the research.

Research Objective

Examine the environmental sustainability-related practices followed by Infosys and ascertain if they are effective.

Infosys' Vision for Sustainability

In the Vision Document (*INFOSYS ESG VISION 2030*, 2020) the company outlines its commitment to the ESG journey and articulates its sustainability priorities. It provides a vision to serve the preservation of the planet, the development of people, and the interests of stakeholders. The company's ESG roadmap outlines bold ambitions with a focus on climate change, water, waste, digital talent at scale, diversity and inclusion, corporate governance, data privacy, and information management.

The document highlights Infosys' commitment to Carbon Neutrality. It also emphasizes the company's commitment to fostering a diverse and inclusive workforce, with initiatives to empower women and promote diversity. Additionally, the company places a strong emphasis on employee wellness and experience, as well as promoting local community engagement and ethical corporate governance. The document underscores the company's commitment to ethical business practices, employee welfare, and technology-driven societal impact, positioning Infosys as a leader in sustainable business performance and responsible stewardship. Here are some of the strategies and initiatives highlighted in the report:

Carbon Neutrality Commitment: Infosys reiterates its commitment to achieving carbon neutrality. Infosys achieved carbon neutrality for fiscal year 2020 across all emissions, 30 years ahead of the timeline set by the Paris Agreement.

Renewable Energy Adoption: Infosys plans to actively invest in renewable energy sources to power its operations. This includes the installation of solar panels, wind turbines, and other renewable energy infrastructure at its facilities.

Energy Efficiency Measures: The company plans to implement energy efficiency initiatives aimed at reducing energy consumption and improving overall efficiency in its operations. This includes the adoption of energy-efficient technologies, building designs, and equipment.

Green Building Standards: Infosys reiterates its commitment to incorporating green building standards and practices in the design and construction of its facilities. This includes features such as energy-efficient lighting, HVAC systems, and sustainable materials.

Water Conservation: Infosys intends to implement water conservation measures to minimize water usage and reduce its environmental impact. This includes the adoption of water-saving technologies, wastewater recycling, and rainwater harvesting.

Waste Management: Infosys has initiatives in place to manage and reduce waste generation across its operations. This includes waste segregation, recycling programs, and initiatives to minimize single-use plastics.

Stakeholder Engagement: Infosys actively engages with stakeholders, including employees, suppliers, customers, and communities, to drive environmental sustainability initiatives collaboratively. This includes partnerships, awareness campaigns, and stakeholder consultations.

Data

To gain a more granular and insightful understanding of a company's sustainability performance, we embarked on an extensive data collection effort. This involved the compilation of information disclosed by the companies in their annual reports, quarterly reports, and sustainability reports. Additionally, relevant information from reputable mainstream media sources was incorporated. Given this research's primary interest in the environmental (E) aspect of ESG, we screened the collected data to isolate details pertaining to the company's performance in energy consumption, waste management, and water usage. Thus through this process, we aimed to construct a comprehensive evaluation of the company's sustainability practices.

Table 1: Details of Energy Consumption by the firm and Analysis of Energy Intensity

		FY 2023	FY 2022	FY 2021	FY 2020	FY 2019
Total Electricity Consumption	GJ	7,12,134	6,15,063	626311	1008948	987397
Total Fuel Consumption	GJ	38,852	35,413	45,349	79,366	66,352
Total Energy consumption	GJ	7,50,986	6,50,476	6,71,660	10,88,314	10,53,749
Turnover of Company	Rs Cr.	1,46,767	1,21,641	1,00,472	90,791	82,675
Energy Intensity per rupee of Turnover	GJ/ Cr	5.12	5.35	6.69	11.99	12.75

Table 2: Details of greenhouse gas emissions (Scope 1 and Scope 2 emissions) by the firm and Emission Intensity analysis

	Units	FY 2023	FY 2022	FY 2021	FY 2020	FY 2019
Total Scope 1 emissions	tCO2e	8,593	8,965	8,678	15,344	13,482

Total Scope 2 emissions	tCO2 e	62,352	64,398	68,673	1,24,063	1,18,293
Total Scope 1 and 2 emisssions	tCO2 e	70,945	73,363	77,351	1,39,407	1,31,775
Turnover	Rs Cr.	1,46,767	1,21,641	1,00,472	90,791	82,675
Total Scope 1 and Scope 2 emissions per Rupee of turnover	tCO2 / Cr.	0.48	0.60	0.77	1.54	1.59

Table 3: Details of Water Consumption by Source by the Firm and Analysis

	Units	**FY 2023**	**FY 2022**	**FY 2021**	**FY 2020**	**FY 2019**
(i) Surface water	KL	-	-	-	-	-
(ii) Groundwater	KL	54,617	1,12,910	1,42,081	1,23,077	4,03,323
(iii) Third-party water	KL	19,93,801	11,29,818	10,72,258	26,95,270	29,55,989
(iv) Seawater / desalinated water	KL	-	-	-	-	-
(v) Others (rainwater)	KL	2,26,261	69,656	79,293	1,52,470	93,559
Total volume of water consumption (in kilolitres)	KL	22,74,679	13,12,384	12,93,632	29,70,817	34,52,871
% of Ground Water against total Water Consumption	%	2%	9%	11%	4%	12%
% Third-Party Water Sources against Total Water Consumption	%	88%	86%	83%	91%	86%
% of Rainwater against total Water Consumption	%	10%	5%	6%	5%	3%
Water intensity per rupee of turnover (Water consumed / turnover)	KL/ Rs Cr.	15.50	10.79	12.88	32.72	41.76

Table 4: Details of Waste Management by the firm

Financial Year	**Unit**	**2023**	**2022**	**2021**
Plastic waste (A)	KG	128.58	114.62	55.99
E-waste (B)	KG	813.37	863.67	361.94
Biomedical waste (C)	KG	106.02	43.58	31.92
Construction and demolition waste (D)	KG	10,861.63	3,087.65	2,597.50
Battery waste (E)	KG	132.64	132.02	97.42
Radioactive waste (F)	KG	3.62	0.008	0
Other hazardous waste (G)	KG	57.47	55.11	57.38
Other non-hazardous waste (H)	KG	8,956.44	6,882.24	6,097.60
Total (A + B + C + D + E + F + G + H)	KG	21,059.76	8,091.25	6,702.25
Waste Intensity	KG / Cr.	0.143	0.067	0.067

Table 4: Details of Waste Management by Reuse and Recycling by the Firm

Category of waste	**Unit**	**2023**	**2022**	**2021**
Recycled	KG	9,022.89	9,512.77	6,116.46
Reused	KG	1,066.94	728.72	332.65
Other Recovery Options	KG	70.73		
Total	KG	10,160.55	10,241.50	6,449.11

Practices and Strategies of Infosys OPerations Towards Managing Sustainability

We now analyse the various practices implemented by Infosys in the operations and understand of impact of the same towards managing sustainability. Climate change considerations continue to play a key role in Infosys Operations, managing its offices and engagement with its stakeholders. While continuing to remain carbon neutral, Infosys also integrates strong efforts to better its sustainability performance by consistently embracing clean technology in its operations, thereby minimizing the impact on the environment

Following are the key initiatives implemented by Infosys as proactive approach towards achieving its environmental vision for sustainability and reducing its environmental footprint.

Green buildings

Development center campuses are an integral part of business models for Indian IT companies. They are hubs for bringing together engineers for project delivery as well as important for fostering an environment for attracting, training, and retaining top talent. In line with its vision and global trends of sustainable practices, the firm has invested development of environmentally sustainable Development Centres (DC) campuses. They not only feature lush green landscapes but also integrate innovative technologies such as radiant cooling systems. Acknowledging the substantial energy consumption attributed to buildings, the firm has implemented one of the most extensive companywide energy conservation initiatives. These encompass various aspects including lighting, air-conditioning, automation, UPS systems, building facades, data centers, and server rooms.

Multiple Infosys Campuses have been awarded the LEED (Leadership in Energy and Environmental Design) India 'Platinum' rating by the Indian Green Building Council (*Infosys Awarded the Highest LEED Rating*, 2014) (Thahsin Ibrahim, 2021) . Infosys has not only attained preeminent standards in green building practices but has also reduced Energy Intensity to 40% over the last 5 years of its baseline of 2019

		2023	2022	2021	2020	2019
Energy Intensity per rupee of Turnover	GJ/ Cr	5.12	5.35	6.69	11.99	12.75

Additional Emissions reduction strategies: In addition to the investment in Green Campus and following practices were implemented in the Development Centre operations:

Multiple office buildings harvest natural light, reducing the use of electricity for lighting during the daytime. The efficient building design includes provisions along windows to allow natural light into the building.(Thahsin Ibrahim, 2021)

Focus HVAC energy savings through optimization of operational patterns and adding smart controls for demand-based operation ("Infosys - Saving Energy with HVAC Retrofits," 2012)

Adopting a life cycle approach for Capital Goods

The concept of Life Cycle Analysis involves assessing the environmental impacts associated with all stages of a product's life cycle. (Finkbeiner et al., 2010) . Infosys is implementing Life Cycle Assessments (LCA) for its buildings, aiming for a holistic examination of carbon emissions from production to disposal. This data will inform comparative analyses of materials and construction methods to identify those that effectively reduce environmental impact. This approach will help detect areas of improvement from a sustainability perspective, guiding material selection towards sustainability, and providing data to support certification efforts. Additionally, insights from the LCA drive climate action initiatives across the company's supply chain.

Carbon Offsite Programs

A carbon offset programs represents a quantifiable avoidance of carbon dioxide or other emissions, achieved through avoidance, reduction, or sequestration (Ramseur, 2009) . While Infosys has invested in Renewable energy plans to avoid emissions and achieve carbon neutrality, there are still unavoidable emissions emerging out of business air travel or employee commute, etc that need to be offset for carbon neutrality (*Infosys | ESG REPORT 2022-23 |Climate Change*, 2023) . Infosys' carbon offset program is sensibly thought through a grassroots social development initiative, executed on a large scale to yield emission offsets. Collaborating with local non-governmental organizations (NGOs), the company has initiated projects in rural India aimed at societal impact. These initiatives encompass the distribution and

implementation of enhanced cookstoves and household biogas plants. Benefits include better indoor air quality and a significantly elevated standard of living, particularly for women and children within these communities. Infosys states that 2,40,000 rural families continue to benefit from its carbon offset programs (*Infosys ESG Report 2022-23*, 2023)

Water Conservation:

Water availability for consumption has become more inconsistent and unpredictable, due to climate change and is forecast to decrease in many regions in the near future (Cooper et al., 2002) . Infosys has prioritized water sustainability across its India campuses. The approach involves reducing freshwater intake and implementing water conservation initiatives. Retrofitting existing building operations and optimizing water usage strategies have lowered freshwater consumption in various locations. Notably, the company's freshwater utilization is solely for human consumption, minimizing its overall impact on water resources.

Rainwater harvesting is a significant pillar of the Infosys' water conservation program. Campuses are augmented with rooftop rainwater harvesting systems, groundwater injection wells and artificial lakes. These data show that these initiatives have not only decreased the company's reliance on external freshwater sources. Additionally, it also contributes to replenishing groundwater tables in the regions where it operates.

Waste Management Practices

(Tao et al., 2005) Researchers have demonstrated the superior effectiveness of Membrane Bioreactor (MBR) technology for sewage treatment in Singapore since 2003. Infosys has also upgraded its traditional sewage treatment plants to MBR technology to elevate the sewage treatment effectiveness and improve the quality of the treated water. In the year 2023, Infosys facilities have recycled up to 11, 75,764.82 KL of water, which is equal to 70.84% of the total water consumption across locations. (*Infosys ESG Report 2022-23*, 2023)

Infosys has also created Biogas plants that intakes its employee canteen's food waste and landscaping waste, which is later, treated through bio methanation process to produce biogas as alternate fuel for its employee canteens. As of 2023, there established capacity for processing 10 Tons of waste in these biogas plants.

FINDINGS AND CONCLUSIONS

Following are the quantitative analysis of the data and the result comparing to the FY-2020 (April 2019 to March 2020) with the latest data of FY 2023

Analysis of the energy consumption:

Decreased the total energy consumption by 32% (through FY20)
Increased percentage of electricity supplied by renewable sources to XX% (through 2020)
Decreased the energy intensity per rupee of turnover by 53.9% (through FY20)
Analysis of the greenhouse gas emissions:
Decreased the total Scope 1 emissions by 50.1% (through FY20)
Decreased the total Scope 2 emissions by 52.2% (through FY20)
Decreased the combined Scope 1 and Scope 2 emissions per rupee of turnover by 66% (through FY20)
Analysis of the water withdrawal:
Reduced groundwater withdrawal by 17% (through FY20)
Increased rainwater harvesting and rainwater usage by 78.9% (through FY20)
Decreased overall water withdrawal through all sources (groundwater, surface water, rainwater) by 20.2% (through FY20)
Decreased the water intensity per rupee of turnover by 41.3% (through FY20)
Analysis of the waste recycling (The data availability is from 2021 to 2023.)
Increased Recycling and Reuse by 57.5% since FY21
Recycled and Reused 48.2% of the total waste produced in FY23.
In the year prior in FY22, Recycled and Reused 100% of the total waste produced

From the analysis of the results, we can certainly conclude that the strategies and practices employed by Infosys for managing sustainability have been effective. Infosys achieved carbon neutrality for the year

2020 across all emissions ahead of its planned target. This was accomplished through a combination of energy efficiency measures, green building, the use of renewable energy, carbon offset projects, and effective waste management practices. These results and analysis commensurate with the overall ESG vision and demonstrate successful integration of strategy in the business operations. The findings will contribute to the growing body of literature on corporate sustainability and offer practical advice for business management, policymakers, and stakeholders interested in fostering sustainable business practices in India and beyond.

BIBLIOGRAPHY

1. Cooper, R. N., Houghton, J. T., McCarthy, J. J., & Metz, B. (2002). Climate Change 2001: The Scientific Basis. *Foreign Affairs*, *81*(1), 208. https://doi.org/10.2307/20033020
2. Elkington, J. (2004). *Enter the Triple Bottom Line*.
3. Finkbeiner, M., Schau, E. M., Lehmann, A., & Traverso, M. (2010). Towards Life Cycle Sustainability Assessment. *Sustainability*, *2*(10), Article 10. https://doi.org/10.3390/su2103309
4. Hahn, R., & Kühnen, M. (2013). Determinants of sustainability reporting: A review of results, trends, and opportunities in an expanding field of research. *Journal of Cleaner Production*, *59*, 5–21. https://doi.org/10.1016/j.jclepro.2013.07.005
5. *Infosys | ESG REPORT 2022-23 |Climate Change*. (2023). https://www.infosys.com/sustainability/documents/esg-2022-23/env-story1.pdf
6. *Infosys Awarded the Highest LEED Rating*. (2014, January 28). https://www.infosys.com/newsroom/press-releases/2014/leed-ratings-hyderabad.html
7. *Infosys ESG report 2022-23*. (2023).
8. *INFOSYS ESG VISION 2030*. (2020).
9. Infosys—Saving energy with HVAC retrofits. (2012). *Air Conditioning and Refrigeration Journal*. https://www.infosys.com/newsroom/features/2012/saving-energy-hvac-retrofits.html
10. International Organization for Standardization. (n.d.). *ISO 14040:2006*. ISO. Retrieved March 25, 2024, from https://www.iso.org/standard/37456.html
11. Kim, W. S., & Oh, S. (2019). Corporate social responsibility, business groups, and financial performance: A study of listed Indian firms. *Economic Research-Ekonomska Istraživanja*, *32*(1), 1777–1793. https://doi.org/10.1080/1331677X.2019.1637764
12. Lubin, D. A., & Esty, D. C. (2010, May). *The Sustainability Imperative*. https://hbr.org/2010/05/the-sustainability-imperative
13. *Our common future*. (1987). Oxford University Press.
14. Ramseur, J. L. (2009). *Voluntary Carbon Offsets: Overview and Assessment*.
15. Ranganathan, J. (2015). *GHG Protocol Initiative Team*.
16. Tao, G., Kekre, K., Wei, Z., Lee, T., Balakrishnan, V., & Seah, H. (2005). Membrane bioreactors for water reclamation. *Water Science and Technology : A Journal of the International Association on Water Pollution Research*, *51*, 431–440. https://doi.org/10.2166/wst.2005.0665
17. Thahsin Ibrahim. (2021, October 8). *INFOSYS MYSORE SOFTWARE DEVELOPMENT BLOCKS LITERATURE CASE STUDY*. https://www.coursehero.com/file/109916726/INFOSYS-MYSORE-CASE-STUDY-FINALpdf/
18. *The Infosys Story*. (2022, March 6). https://theincmagazine.com/the-infosys-story/
19. World Resources Institute. (n.d.). *Green House Gas Protocol , FAQ*. WRI. https://ghgprotocol.org/sites/default/files/standards_supporting/FAQ.pdf
20. *World's Best Companies of 2023*. (n.d.). Time. Retrieved March 23, 2024, from https://time.com/collection/worlds-best-companies-2023/