



# GLOBAL SUMMIT 2023

## UNLOCKING SUSTAINABILITY: G20 PRESIDENCY PAVES THE WAY FOR AN ESG-DRIVEN NEW WORLD ORDER

14 - 15 JULY 2023 | MANEKSHAW CENTRE | DELHI

KNOWLEDGE PACK



### THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

Statutory Body under an Act of Parliament

<https://icmai.in/GS-2023/> [gs2023@icmai.in](mailto:gs2023@icmai.in)

Behind every successful business decision, there is always a **CMA**



## GLOBAL SUMMIT 2023

Unlocking Sustainability:

G20 Presidency Paves the Way for an ESG-driven New World Order

14-15 July 2023 | Manekshaw Centre | Delhi

### About ICMAI

The Institute of Cost Accountants of India (ICMAI) is a Statutory Body set up under an Act of Parliament in the year 1959. The Institute as a part of its obligation, regulates the profession of Cost and Management Accountancy, enrolls students for its courses, provides coaching facilities to the students, undertakes professional development and continuing education programmes for the members and conducts research work in the field of Cost and Management Accountancy. The Institute pursues the vision of cost competitiveness, cost management, efficient use of resources and structured approach to cost accounting as the key drivers of the profession.

With the current emphasis on management of resources, the specialized knowledge of evaluating operating efficiency and strategic management, the professional members of the Institute are known as "Cost and Management Accountants (CMAs)". ICMAI is the largest Cost & Management Accounting body in the world, having more than 5,00,000 students and 90,000 members all over the globe. The Institute is headquartered at Kolkata with an office at New Delhi. The Institute operates through four regional councils at Kolkata, Delhi, Mumbai and Chennai and 114 Chapters situated at important cities in the country as well as 11 Overseas Centres, 61 Support Centres & 382 ROCCs. It is under the administrative control of the Ministry of Corporate Affairs, Government of India.

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The Institute of Cost Accountants of India would be the preferred source of resources and professionals for the financial leadership of enterprises globally.

### Mission Statement

The CMA Professionals would ethically drive enterprises globally by creating value to stakeholders in the socio-economic context through competencies drawn from the integration of strategy, management and accounting.

### Motto

From ignorance, lead me to truth  
From darkness, lead me to light  
From death, lead me to immortality  
Peace, Peace, Peace

असतोमा सद्गमय  
तमसोमा ज्योतिर् गमय  
मृत्योर्मा मृतं गमय  
ॐ शान्ति शान्ति शान्तिः



Strategic Partner



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### KNOWLEDGE PACK



### THE INSTITUTE OF COST ACCOUNTANTS OF INDIA

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## MISSION STATEMENT

"The Cost and Management Accountant professionals would ethically drive enterprises globally by creating value to stakeholders in the socio-economic context through competencies drawn from the integration of strategy, management and accounting."

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## MESSAGE



**CMA Vijender Sharma**

*President*

The Institute of Cost Accountants of India

We feel extremely happy to organise the *Two-day Global Summit 2023* on the theme **Unlocking Sustainability: G20 Presidency Paves the Way for an ESG-driven New World Order** to be held on **14 - 15 July 2023** at **Manekshaw Centre, Delhi**. This *Knowledge Pack* is also getting released to mark this occasion.

India has been leading in adoption of forward looking measures for quite some time now. This is indispensable to keep up the pace with the ongoing changes and upgradation. One of them is ESG framework, which, inter alia, require businesses to act responsible and disclose the efforts made by them towards ESG. The objective behind this is to ensure sustainability, inclusivity, diversity, transparency in the business operations, its implementation will play a crucial role in ensuring its effectiveness.

SEBI has been one of the early adopters of sustainability reporting for listed entities and requires mandatory ESG-related disclosures for the top 100 listed entities since 2012. Over the years, the requirement was strengthened to cover the top 500 and then the top 1000 entities. In the recent past, SEBI has issued new sustainability reporting requirements under the Business Responsibility and Sustainability Report (BRSR), to establish links between the financial results of a business with its ESG performance. The BRSR was made mandatory for the top 1000 listed entities (by market capitalisation) from 2022–23. The BRSR has set a significant step towards bringing sustainability reporting at par with financial reporting.

Undoubtedly, this Summit will highlight the issues like: ESG Ecosystem, Green Energy, Green Mobility, Green Finance, etc. I am sure, the deliberations from eminent speakers should be intellectually stimulating and professionally enriching.

Creditable efforts have been made to make the Knowledge Pack beneficial for the decision makers, industry people and professionals like us. I wish all the readers a happy reading!!!

Further, wish this event a grand success.

**CMA Vijender Sharma**



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## MESSAGE

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**CMA H Padmanabhan**  
*Chairman, Global Summit 2023*  
*Former Vice President, ICAI*  
The Institute of Cost Accountants of India

I am happy that our Institute is organising the *Two-day Global Summit 2023* on the theme **Unlocking Sustainability: G20 Presidency Paves the Way for an ESG-driven New World Order** at **Manekshaw Centre, Delhi** and a *Knowledge Pack* is also getting released to mark this occasion.

The rise of ESG regulations in India is a reflection of the country's commitment to sustainable growth. The regulations are intended towards promoting sustainable business practices, improving corporate governance standards, and reducing environmental and social risks. While there is still a long way to go, the adoption of ESG practices is a positive step towards a sustainable future. Companies that adopt sustainable practices will not only benefit society and the environment but will also be more competitive in the long run.

CMAs can play a key role in the ESG adoption process. They are professionally competent enough to assess the environmental and social impact of investments; advise corporate governance practices that best matches the expectations of the investors and other stakeholders; suggest smart materials, energy-efficient processes and contribute towards the preservation of environmental quality and bio-diversity and ensuring that sustainability issues are factored into corporate strategies and capital allocation decisions. By adopting ESG and other sustainability practices, making use of the valuable services of the CMAs, and above all with the policy support of Union and State Governments, let us hope that India can attain USD 5 trillion economy very soon.

We firmly believe the Summit will be an incentive for the delegates; moreover, the Knowledge Pack brought out on this occasion will be useful and informative as well.

We extend our best wishes to all the participants of the event.

**CMA H Padmanabhan**

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## **SUSTAINABILITY ACCOUNTING & GOVERNANCE PRACTICE: CHALLENGES OF THE ACCOUNTANTS**

### **Abstract**

*Sustainability accounting is a practice of measuring and reporting of an organization 's contribution to the society and the environment. Reporting on financial performance of an organization is a statutory requirement but reporting of sustainability is a voluntary. The growth of an organization and the sustainability accounting is inter-related. Hence, every organization should practice the reporting on performance of their environmental and social activities in a regular manner before their stakeholders. It is one of the pre-requisites for good governance of an organisation. The accountants need a greater awareness of the sustainability accounting and at the same time developing the skills and competencies to support an organization for its sustainability in the long run.*

### **Introduction**

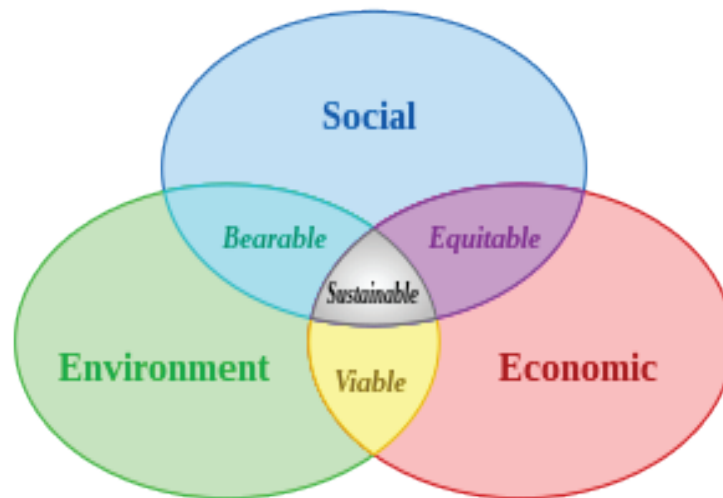
Sustainability accounting is the practice of measuring, analysing and reporting of a company's social and environmental impacts arising due to the operational activities. There are four key elements of sustainability accounting i.e.

- a. the economic, b. the social, c. the environmental, and d. the Good Governance.

The sustainability of an organisation can be measured in terms of the following five dimensions:

- a. Impact on the economy due to the operational activities of the organisation that causes creation of local employment and the upliftment of livelihoods,
- b. Impact on the society and the effect on its staff due the changes in the terms and conditions of the employees,
- c. Other related impact on the community at large due to the operational activities of the organisation,
- d. Impact on the natural resources and other resources due to the operational activities of the company, and
- e. Finally, impact on the environment due to the operational activities which cause due to the discharge of waste water and hazardous substances or greenhouse gas emissions etc.

Accounting, auditing and reporting is a statutory requirement of an organisation in order to measure the financial performance of an organisation but the accounting for sustainability is a voluntary activity. The companies are now start practising the reporting of their social and environmental performance in the report.



For better performance in the reporting, the accountants need awareness on the following:

- A greater awareness of the sustainability accounting and find the effect out of it,
- Develop the professional skills and competencies in the reporting,
- Support the organization for sustainability,
- Ensure the key elements of developing a sustainable strategy, and
- Provide the necessary information on various resources and tools which are necessary to develop the knowledge and skillset in order to meet the challenges ahead.

The Corporate Sustainability is a broad frame aimed at enhancing competitive positioning and profitability through the sustained creation of shared value, co-creation practices with stakeholders which popularly known as ESG (Environmental, Social, and Governance).

The governance is the internal system of practices, controls, and procedures for maintaining transparency that the organisation adopts with the object to govern itself in order to comply with the law, and meet the needs of all stakeholders. Every organisation which is itself a legal creation, requires good governance practice.

### **Back ground of sustainability accounting**

It was in the year 1980, the concept of sustainable development was launched.

The UN's Brundtland report defined it as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

Initially, it was contested, but it helps as a valuable tool in scrutinizing various complex issues. It is tied up with the following i.e.:

- Stream of ecological modernization, and
- Economic growth.

Sustainability recognizes the interdependence of economic, social and environmental factors and forward-looking approach too. On the macroeconomic level, sustainability has been linked to national accounting and GDP has been used limitedly as an indicator of economic performance and social progress.

There was an increasing interest in developing a new welfare indexes i.e., the creation of gross





happiness indexes which was first invented in Bhutan. Environmental accounts have been created to complement the national financial accounts which contain the full economic value and costs of natural resources which has been utilised and environment has been affected. In most of the countries in the world, it is a law that both the private and public sector organizations are required to publish an annual report and to be included in the financial performance report which included all the relevant financial information and presented in a structured way.

The external auditor has to assure the reasonableness of its completeness and accuracy and also to attest the proper financial accountability of the audited report. The success of an organization is not only depending on its financial results, but the following issues also important i.e.

1. Reduce the greenhouse gases; and
2. Efficient use of natural resources.

In the today's economic world, these issues are not only important but also a moral concern because of the impact on the financial performance of an organisation in the long run.

Due to the growing importance of the corporate governance both in the private sector and the public sector, the issues cannot be reported only through its traditional financial reporting. In order to report on the performance of an organisation, report on the performance of the following issues along with the financial issues is a must i.e.,

- a. Environmental impact issues, b. Social responsibility, c. Sustainable development etc.

The sustainability reporting is a systematic tool that to gather and to present the information on the sustainability for the management process as well as for the other stakeholders i.e., employees, shareholders, customers, local communities etc.

### **Essentials of Sustainability**

A clear and deeper understanding of the following is essential in order to deal with the sustainability.

1. Value creation over a period of time and adaptation of efficient and sound business model;
2. Utilise the opportunities available for better organisational performance;
3. Adopt the suitable protection measures against threats which may happened due to depletion of natural resource and scarcity arises, climate changes, increasing trends of population, urbanization and increasing trends of growing middle-class people that ultimately drive the sustainable growth;
4. Improve the perception of stakeholder and the organization's activities that are affected by the society. The valued stakeholder helps in facilitating the pooling of resources in a way that helps to gain insights and knowledge, solve problems, and reach goals and targets etc;
5. Change the consumer preferences that encourages the innovations of new products and services in order to fulfil the customer's demand for new products and preferences;
6. The organisations be more interested for their products and services which have lesser impact on the environment; and
7. The organisations be more vigilant to follow the labour laws and practices, other laws and regulations etc nationally as well as globally.

### **Sustainability & Business Resilience**

Business resilience is an ability to resist and to adapt quickly against any disruptions and maintaining



a continuous flow of the operational activities of the business enterprise and to adopt the necessary protectionary steps in order to avoid any substantial damages or any unexpected loss. It begins with the following activities:

1. Understanding the business process;
2. Maintaining work flow in order to avoid any unexpected loss;
3. Approaching to readiness and also to maintain the continuity of various issues i.e., technology management, crisis management, risk management and sustainability accounting etc;
4. Adopting the various elements of resilience i.e., organisational, operational, cyber, environmental and supply chain etc.

The business resilience requires a strategy that to create value for its shareholders and also contributes to a sustainable society by providing the needs of the present generation. An effective sustainable strategy helps the society in the following ways:

1. Integrate the material sustainability issues; and
2. Lead the business models which create net positive economic, environmental, and social impacts.

“For example, Ikea strives for resource independence by encouraging all waste be turned into resources; energy independence by being a leader in renewable energy; and becoming more energy efficient throughout its operations and supply chain.”

The key steps of a business resilience plan are as follows:

- a. Identifying the organisational structure;
- b. Functioning the organisation;
- c. Anticipating the potential for the incident and preparing for the same;
- d. Finding the alternative or any other interim method of operation of the business; and
- e. Identifying the effect of the organisational culture and practice and recovery of the business operations.

### **Business resilience & Sustainability Accounting**

The accountants undertake diverse roles in leadership and management of various private and public sectors organisations. The top management of the organisation are involved in decisions making process which influence their organization’s ability to create and to preserve the value over a period of time. In this respect, their role in these organisations may broadly be narrated as follows:

1. Delivering continuing value to the stakeholders is the key to business resilience,
2. Planning and providing a long-term thinking on a wider / broader range of various issues;
3. Contributing to business resilience to extend its support,
4. Influencing the organizations in integrating sustainability matters into organizational strategy, finance, operations, environmental and communications etc.

It is to ensure a resilient business models, the organizations need either to transform or to change the way of planning about the manufacturing style of the products, technologies and processes adopted, and business models etc. It is a necessity for the organizations to consider the impact of the following activities in order to bring a change in the production activities and also to avoid any irreparable damages to the resources i.e.





1. Economic activities,
2. Investment's pattern,
3. Volume of hazardous materials, waste and pollution created; and
4. Effect on Natural and human resources and also other associated issues.

In this situation, the organisation needs to take into account the following issues which leads to business model innovation and to achieve a circular economy.:

- a. On the natural environmental issues;
- b. On the natural resources' issues;
- c. On the economic development issues,
- d. On the social condition's issues, and
- e. Finally, the human resources issues.

Approaching sustainability and to achieve a resilient business model is a journey which involves understanding and responding to complex and interrelated issues. The start of this journey might focus on complying with laws and regulations and in some cases require a radical response.

### **Focus areas of the Accountants on sustainability of the enterprise**

The accountants play a big role in the survival of the business enterprise. To be a useful and effective partner in the business and the industry. The accountants should focus on the following issues:

1. Identification: Identify the important areas, trends that are important for business performance;
2. Connection: Connecting with the organization's strategy, business model, and performance;
3. Integration: Integrating the natural, social and the capital issues into management information required to formulate strategies, plans, targets, and investment decisions making process;
4. Assessment: Evaluating the benefits of environmental and social matters;
5. Organisation: Developing and organising the systems, processes, and the people that to support the decision-making process;
6. Value creation: Ensuring the resources that are used effectively in creating value for shareholders, and other stakeholders;
7. Drive Efficiency: Taking appropriate action in reducing the waste, utilising the waste for useful alternative product as well as lowering the costs of production;
8. Improving Credibility: Collecting various data and information through effective governance;
9. Effective Communication: Maintaining transparency though a clear communication among the stakeholder; and
10. Disclosures: Disclosing the financial data & information through the financial reporting system which is essential to maintain transparency.

### **Investors & Sustainability**

Investor's interest relates to improve the performance of the companies or the business organisation. These investors seek to better understanding of an organization's business model, strategy, governance, key dependencies, and significant risk factors. It is also a fact that companies have the ability to attract different kinds of investors through their good governance principle and disclosure policies. The accountants should indicate that sustainability accounting have a positive impact on



the type of investors specifically who are looking for sustainable value creation.

Moreover, the organizations who are having a well-integrated strategy and outward-looking approach can be benefitted from effectively communicating on various significant issues related to strategy, governance, performance, and prospects which also reflect its commercial, social, and environmental context.

### **Sustainability Accounting & Construction sectors**

In the present economy, the construction industry plays a significant role. The infrastructure industry is a key to improving the quality of life in the of the following ways:

1. Better housing facilities,
2. Proving utilities, and
3. Better road condition, drainage facilities and transport infrastructure etc.

The construction industry provides a different opportunity which have favourable effect to the employees as well as the communities at large. Many organisations in the construction sectors who are practicing sustainable development principles in order to evade the potential detrimental effect on account of the hazards created out of the construction industry and improve the life style too.

### **Corporate Governance & Sustainability**

A good corporate governance is a set of organised relationship among the various stakeholders that helps the management to exercise a prudence in policy making and decision-making process for the best interest of the organisation and various stakeholders. The principles of good governance that help in achieving a broader economic, environmental and socially positive objectives. The following are pillars of good corporate governance principles:

- a. Transparency
- b. Participation
- c. Responsiveness
- d. Equity
- e. Efficiency
- f. Accountability
- g. Effectiveness, and
- h. Sustainability

The Corporate sustainability governance emerged as management system that maintain the balances of pillars of sustainable development within the boundaries of the organisation. It should ensure that the investments made are appropriate and fulfil the environmental and social goals of the organisation.

### **Sustainability Accounting & Reporting**

Sustainability accounting is a powerful tool for both the internal and the external reporting. The key issues relate to sustainability accounting which requires the following consideration:

1. Boundaries: The sustainability accounting is a voluntary activity and the organisation has to determine the boundaries thereon;
2. Valuation method: The avoidance and restoration costs method be the most appropriate method;



the costs of prevention or restoration needs to be considered too.

3. Adding up and across: The conversion of social and environmental impacts into financial values and add up the impacts and trade them off against each other; and
4. Accounting: Include items only which are easy to convert to financial values only.

Sustainability report contains the following information:

1. Strategy: An overview of the company's business strategy;
2. Profile of the company: A brief description of company's history, mission & values etc;
3. Governance principle: The detail of company's board structure and the role of management team;
4. Performance of the company: The performance of the company's financial and operational activities;
5. Sustainability: Performance of the company's environmental and social activities;
6. Outlook: The company's plan for the future.

### **Benefits of Sustainability Accounting**

Organisations who are committed to sustainability should look beyond profits, which can be achieved over years. The sustainability accounts may be helpful to following areas:

1. Collect data and information on expenditure on account of environmental and socially related issues and convert them to financial benefits;
2. Measure the environmental and social costs which decline over time due to commitment to sustainability;
3. Assess the risk associated with social and environmental issues and link with the current financial performance;
4. Help in the of aid risk management associated with environmental issues;
5. Identify the stakeholder relationships which present the sustainability risks and benefits; and
6. Encourage partnership between the stakeholder and the organisations.

### **Conclusion**

To deliver on this vision, the accountants need a greater awareness as well as developing the professional skills and competences that to support a stronger and for more sustainable organizations. To bring this vision into reality, the role of accountants which play in embracing sustainability and to ensure that the organizations they serve are resilient. It does this by linking sustainability to a broader business agenda of enabling resilient organizations, and highlighting the key elements of developing a sustainable strategy and how accountants can help in addressing the sustainability opportunities and challenges in their diverse roles. It also provides information on the many other resources and tools available in order to help the accountants in building up the required knowledge and skillset necessary to meet the future challenges.

Sustainability reporting is a tool to increase transparency and accountability in the issues that traditional financial reporting is not dealing with. These issues include the linkages between environmental, social and economic issues as well as long-term development. Reporting on sustainability matters has increased in all the sectors. The Institute of chartered Accountants of India published the exposure draft on sustainability Accounting and the effective date of application of



SSAE (Standard on Sustainability Assurance Engagements) are as follows:

- I. Reporting on voluntary basis covering periods ending on March 31, 2023,
- II. Reporting mandatorily covering periods ending on or after March 31, 2024.

The IFRS Foundation announced the formation of the International Sustainability Standards Board (ISSB) on 3 November 2021 and the ISSB is developing the standards that will result in a high-quality, comprehensive global baseline of sustainability disclosures which will focus on the needs of the stakeholders, investors and the financial markets.

Hence, the professional accountants need to build up expertise and competency while reporting the sustainability accounting in future days that helps to achieve the real value of economic growth.

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## JIO: PAVING THE PATH FOR DECARBONIZING INDIAN DIGITAL SECTOR

### Abstract:

*This white paper explores Jio's decarbonization strategy to achieve net zero operations by 2035. It addresses the challenges faced by Jio in achieving decarbonization at scale, outlines the governance structure for implementation, highlights emission reduction targets, and presents the strategic approach to decarbonization. Jio's progress in deploying renewable energy, implementing energy-efficient practices, and engaging suppliers demonstrates its commitment to achieving sustainable development goals and serves as an example for the telecom and the broader digital sector's accelerated transition to a cleaner and greener future.*

### 1.0 Background

Climate Change is an existential crisis for earth, endangering the existence of life on the planet. The Climate crisis is essentially an energy crisis. Unfettered use of fossil fuel over the last 200 years has endangered the earth's fragile ecology. The transition from fossil fuels to green and clean energy is an urgent imperative. The survival of mankind on earth depends on how quickly we are able to effect this transition.

From a business perspective, Climate Change poses transitional risks driven by changes in policy/regulatory environment and demands from stakeholder groups including capital providers and customers. Increasing frequency of extreme climate events witnessed across different parts of the world, including India also creates physical risks for businesses. In today's interconnected world, digital and communication services play a critical role, and any disruptions, especially during times of disasters and emergencies, pose significant risks to both human life and property.

Governments across the world have acknowledged the need for urgent energy transition and have made long term pledges to transition their economy to Net Zero. In Nov 2021, Government of India has committed that India will achieve Net Zero by 2070. As a responsible corporate citizen, the Reliance Group, led by its Chairman Sh Mukesh Ambani announced that the group will target to achieve Net Zero by the year 2035.

As part of this initiative, Reliance Jio Infocomm Limited (Jio), the digital services division of the group, has been actively spearheading various initiatives to transition its Digital services business towards becoming net zero.

### 2.0 Decarbonization Challenges

Jio's decarbonization strategy had to address the below listed key challenges to transition to Net Zero:



1. **Scale of Operations:** As the premier digital services provider in the company, Jio's scale of operations is massive. Jio has 439.2 million subscribers (as of Mar 31, 2023), which is 30% more than the entire population of the US. With a population coverage in India of 99%, Jio has presence in every state, including in remote, far-flung areas and hard to reach terrains. For the company to achieve Net Zero status, it is essential for Jio's decarbonization initiatives to be highly scalable.
2. **Aligning Supply Chain with Net Zero Targets:** 50-55% of Jio's overall GHG footprint lies in its upstream supply chain. These include emissions caused due to the goods & services it consumes, transportation and from upstream leased network facilities. Aligning Jio's supply chain with an aggressive target of becoming Net Zero by 2035, where it doesn't exercise direct control, is expected to be challenging.
3. **Decoupling Growth and Emissions:** Jio is leading the roll out of 5G services across India, at a pace which is globally unprecedented. These investments are essential to unlock the potential for new generation technologies like Artificial Intelligence (AI), Blockchain, Internet of Things (IoT) etc. Deployment of 5G technology pan India will not only increase Jio overall value chain emissions but also result in quantum jump in data consumption. Jio's decarbonization efforts has to account for the expected increase in its projected energy load.
4. **Regulatory Landscape for RE Consumption:** Distributed solar for majority of network sites cannot be a viable solution for a variety of reasons. Hence, centralized Renewable Energy (RE) power plants become a necessity to power the network. While India has taken several policy initiatives for promoting RE, several challenges are still anticipated. Decarbonization of Jio's entire network operations would require utility scale renewable energy plants. Regulatory approvals, land acquisition for setting up RE plants of thousands of capacity and wheeling of power within and between states to multiple sites with very low individual consumption are potential anticipated challenges.
5. **Sourcing Backup Power for Network Reliability:** To ensure delivery of high-quality services, it is essential for the network and associated infrastructure to be available 24 x 7. Given the challenges with grid availability in certain parts of the country, it is critical to have back up source of power. Diesel is the most commonly used backup energy source. To achieve Net Zero, Jio had to ensure a non GHG emitting backup source that is both cost effective and scalable.

### 3.0 Governance

Given the criticality of the initiatives and the scale of the challenges, Jio focused on setting up a governance mechanism to formulate, execute and monitor progress of its decarbonization strategy.

#### Board Oversight:

Decarbonization is a strategic initiative for the company and the board maintains oversight on the overall progress of its decarbonization strategy and progress towards net zero.

The Risk Management Committee of Jio's Board is specifically tasked with the responsibility of monitoring Environment Social and Governance risks (including Climate related risks), assessing adequacy of the risk mitigation plans and the systems and processes for internal controls.

#### Executive Accountability:





The Managing Director (MD) is the highest executive responsible for executing the company's ESG and Climate strategy, managing climate related risks and opportunities and periodically reporting to the Board on the progress.

The MD is supported by the following committees that comprise of the seniormost executives of the company, tasked with specific responsibility:

- *Executive Committee (EC)*: provides oversight and governance and is responsible for monitoring the overall health of the business. Decarbonization is a strategic initiative for the company and its progress is periodically reviewed by the EC.
- *Business Risk and Assurance Committee (BRAC)*: Climate risks are classified as Enterprise-wide risks and are integrated in the company's overall risk management framework. BRAC maintains oversight on climate related developments and assess the adequacy of mitigation plans for addressing both transitional and physical risks related to climate.
- *Governance Compliance Committee (GCC)*: Monitors the status of company's compliance with regulatory requirements as well as internal company policies.
- *ESG Steering Committee*: Maintains oversight on the company's ESG strategy and its execution, and reporting to external stakeholders.

#### **On Ground Execution:**

Executing the decarbonization strategy is expected to be a collaboration between company-wide functions including Finance, Operations, Engineering, Procurement, Health, Safety, Environment & Fire (HSEF), HR etc. to ensure timely availability of financial, human and technological resources to drive progress. Jio has taken the following measures to embed climate in the day-to-day operations:

- 1) *Goal Setting*: Roles for each function and individuals in the overall decarbonization strategy has been identified and is integrated in their goal setting process.
- 2) *Incentivization*: High performers, who help further the company's goals are motivated through relevant monetary and non-monetary incentives including salaries and promotions.
- 3) *Co-ordination*: Given the scale, criticality and the involvement of multiple functions, Jio has also constituted a Project Management Office to monitor and report progress and escalate potential issues and roadblocks to senior management for timely resolution.

#### **4.0 Jio's Emissions Profile and Reduction Targets**

The key sources of GHG emissions and the corresponding emissions in the base year of 2020 is provided below:

- (1) Diesel used as a backup source of energy contributes to 493,761 tCO<sub>2</sub>e
- (2) Grid Electricity used to power the network contributes to 3,106,924 tCO<sub>2</sub>e.
- (3) Key sources of its Value Chain or Scope-3 emissions include: (a) Purchase of Goods & Services, (b) Capital Goods, (c) Upstream Leased Assets, (d) Fuel & Energy Related Emissions, (e) Transportation and Distribution and (f) Business Travel and Employee Commute contributing to 4587174 tCO<sub>2</sub>e. Of these the first three contribute nearly 99% of overall Scope-3 emissions.

While Jio pursues its net zero journey, it is also keen to ensure that the pace of reduction is aligned with a 1.5°C world. So Jio has also setup shorter term targets which have been validated by SBTi to be aligned with the 1.5°C pathway. These include: (a) Reduce Scope 1 and Scope 2 emissions by



76% by 2028, (b) Reduce Scope-3 emissions by Scope-3 emissions by 66.5% by FY 2028 and (c) Switchover to 100% RE by 2029.

## 5.0 Decarbonization Strategy

Jio has developed a strategic approach decarbonization as outlined below:

1. ***Demand Side Energy Management:*** Energy costs form nearly 35-40% of the overall Operation & Maintenance cost. As a company committed to delivering affordable digital services to every India, Jio continually adopts measures to maintain high levels of energy efficiency. Measures such as turning off specific Time Division Duplex band based on dynamic peak load, automated building management systems and sophisticated automation has helped Jio in achieving industry leading efficiency levels.
2. ***Building Circular Operations:*** Net zero and circularity are entwined goals. To achieve circularity in its operations, Jio follows a hierarchical approach to waste management, prioritizing reuse/ repair over recycling/ recovery and avoiding landfilling/ incineration. Jio has identified innovative ideas to enhance the life cycle of equipment like Batteries, Electronic cards, and Rectifiers, beyond their designed life. Jio now aims to enhance its focus on minimizing the use of virgin material by encouraging vendors to increase the use of recycled materials in their supplies for products.
3. ***Prioritizing Decentralized Solar:*** Decentralized Solar, i.e. setting up the solar panels closer to the telecom sites, reduces the dependence on the grid to wheel the power to the sites and hence reduces the need to switch over to Diesel powered emergency back up during grid failures. Jio conducted viability studies to identified the sites suitable for setting up decentralized solar and the optimal capacity at these sites. These sites were then prioritized for solarization.
4. ***Centralized Utility Scale Solar:*** For sites where decentralized solar was identified to be unviable, we have developed a plan to setup utility scale solar based power plants in various states across the country. Power from these sites would be wheeled to the sites from the grid. Based on projected energy demand, we expect to setup solar plants of capacity aggregating to 14,000+ MWp capacity between 2023 and 2028.
5. ***Creating Energy Storage Capacity:*** Jio is setting up Li-Ion batteries to store the energy produced from solar. Diesel Generators (DG) as a backup source of power is switched on only in case where the duration of the grid failure exceeds the capacity of the Li-ion battery.
6. ***Supplier Engagement:*** Suppliers and service providers are a critical part of Jio's decarbonization plan. Jio's supplier expectations are being laid out in its Supplier Code of Conduct which specifies that it expects its suppliers to set net zero target, undertake measures to reduce their GHG footprint and periodically report their progress. Jio is also including GHG and energy related clauses in its supplier agreement to make it contractually binding for the suppliers.

## 6.0 Status & Impact

Three years since the start of the journey, Jio continues to be on track to achieve its short-term goal of transitioning to 100% RE by 2029 and its long-term goal of becoming net zero by 2035. Jio has already setup distributed solar power plant at 17,684 sites with an aggregate capacity of 161 MWp. It has also started its centralized solar initiative with a 35 MWp power plant being commissioned in Bidar, Karnataka. Jio's efficiency measures has helped it in achieving industry





leading efficiency standards.

Jio's net zero journey will aid India with the following key Sustainable Development Goals (SDG): (a) SDG7 Affordable and Clean Energy, (b) SDG9: Industry, Innovation & Infrastructure, (c) SDG13: Climate Action and (d) SDG17: Partnerships for the Goals.

Jio, as the market leader in India, is also demonstrating to its national and international peers that: (a) there is a strong business case to decarbonize telecom network operations and (b) rapid scaling and transition to RE is possible. Jio's success will not just be of its own but will provide conviction to its industry peer to aggressively follow suit.

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## ECONOMIC SUSTAINABILITY THROUGH ESG AND ROLE OF CMAs

### Abstract

*ESG considerations into business practices and decision-making can contribute to the long-term economic sustainability of companies. By managing risks, improving efficiency, building trust, accessing capital, and complying with regulations, businesses can position themselves for success in an increasingly sustainability-focused and responsible world. CMAs being champion of analysis of financial health, can play a pivot role to the long terms objectives of a company.*

*“Sustainability requires maintaining a delicate balance between the human need to improve lifestyles and feeling of well-being on one hand, and preserving natural resources and ecosystems, on which we and future generations depend.” - Kofi Annan, former Secretary General, United Nations*

ESG (Environmental, Social, and Governance) refers to a set of criteria used to evaluate a company’s performance and impact in terms of environmental sustainability, social responsibility, and corporate governance practices. On other hand, Economic sustainability refers to long terms planning to support the economy for a high standard of living and well-being for its citizens without depleting its natural resources and damaging the environment as well as compromising the well-being of future generations. ESG factors have become increasingly important for investors, businesses, and stakeholders as they recognize the interconnectedness between environmental, social, and governance issues and long-term economic sustainability.

**Relation between ESG and Economic sustainability:** ESG factors have become increasingly important for investors, businesses, and stakeholders as they recognize the interconnectedness between environmental, social, and governance issues and long-term economic sustainability. Here’s how ESG and economic sustainability are related:

ESG	Economic Sustainability
Quantitative	Qualitative and Quantitative
Externally Regulated	Self and externally regulated
Directly related to business valuation	Often related to business valuation
Implemented through goals and audit	Implemented through ESG and regulated framework

- Risk management:** ESG factors help identify and manage risks that can impact a company’s financial performance and long-term viability. Environmental risks, such as climate change and resource scarcity, social risks like labour practices and human rights violations, and governance risks like board composition and executive compensation, can all have significant economic consequences. By addressing these risks, companies can enhance their economic sustainability.



2. **Access to capital:** ESG considerations are increasingly influencing investment decisions. Many investors now consider a company's ESG performance when allocating capital, which can affect its access to funding. Companies with strong ESG practices may find it easier to attract investment and secure financing, contributing to their economic sustainability.
3. **Reputation and stakeholder trust:** Companies with strong ESG performance are often seen as responsible and ethical, which can enhance their reputation and stakeholder trust. A positive reputation and trust from customers, investors, employees, and communities can lead to increased customer loyalty, investor confidence, and employee productivity. These factors contribute to the long-term economic sustainability of a business.
4. **Regulatory compliance:** Governments and regulatory bodies are placing greater emphasis on ESG issues, enacting policies and regulations to address environmental and social challenges. Non-compliance can result in legal penalties, reputational damage, and operational disruptions, impacting a company's economic sustainability. By proactively addressing ESG issues, companies can ensure compliance and avoid potential negative consequences.
5. **Cost savings and efficiency:** Embracing sustainable practices can lead to cost savings and operational efficiency. For example, adopting energy-efficient technologies can reduce energy consumption and lower operating costs. Implementing responsible supply chain practices can mitigate the risk of disruptions and reputational damage. By optimizing resource use, reducing waste, and improving productivity, companies can improve their economic sustainability.

**Way to Sustainability through ESG:** While ESG and economic sustainability offer numerous benefits, some are enumerated along with challenges associated related to their implementation:

1. **Invest in renewable energy:** Switching to renewable energy sources like solar, wind, and hydropower can help reduce the carbon footprint and promote sustainability. The major challenges are:
  - a. High capital costs: Renewable energy projects often require significant upfront investments, making it difficult for some investors to participate. This can be particularly challenging for individuals or smaller organizations with limited financial resources.
  - b. Technical challenges: Some renewable energy technologies are still relatively new and may not have been fully tested or proven in real-world scenarios. This can make it difficult to accurately predict performance and profitability, adding an element of risk for investors.
  - c. Intermittency: Many renewable energy sources, such as solar and wind power, are intermittent, meaning that they are not always available when needed. This can make it challenging to integrate renewable energy into the grid and may require additional investments in energy storage technologies.
  - d. Market volatility: Like any investment, renewable energy projects are subject to market fluctuations, which can impact the profitability of the investment. This can be particularly challenging in the renewable energy sector, which is still developing and may be subject to greater volatility than more established industries.
2. **Promote sustainable practices:** Encouraging sustainable practices like reducing waste, recycling, and using eco-friendly products etc. can contribute to a more sustainable economy. Promoting sustainable practices can be a challenging task due to a variety of reasons. Some of the common challenges include:
  - a. Lack of awareness: Many people are not aware of the impact of their actions on the



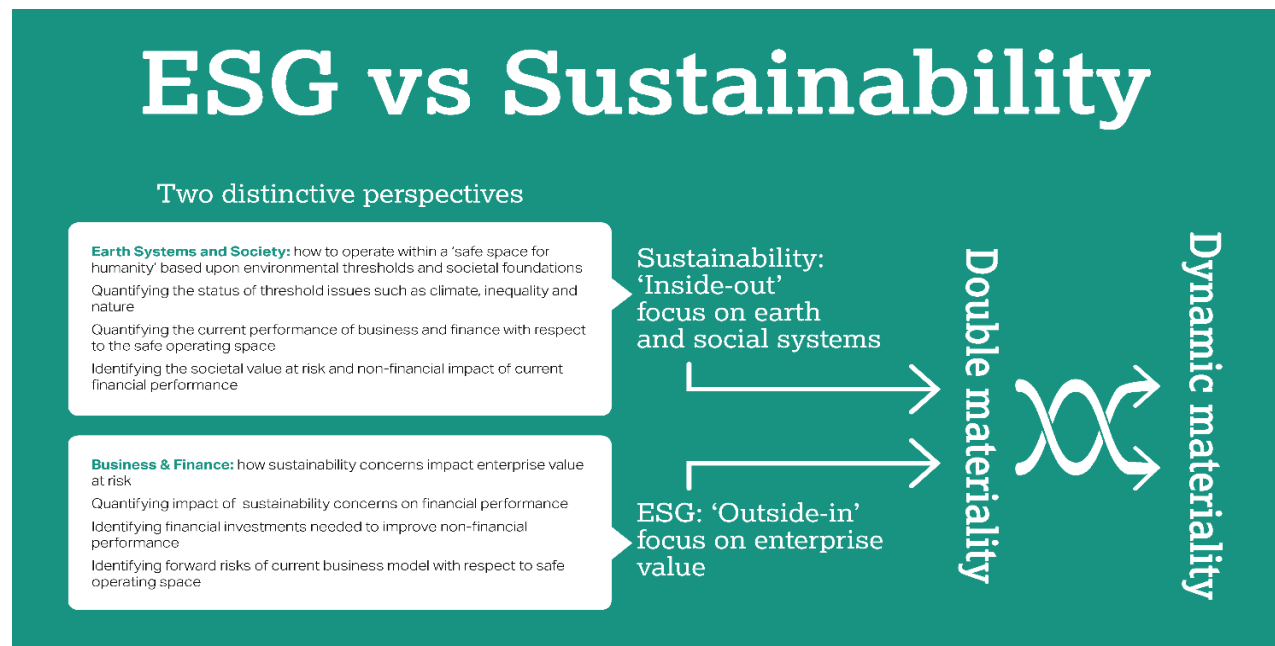
environment and the importance of sustainable practices. Raising awareness and educating people about the benefits of sustainability can be a challenging task.

- b. **Cost:** Sustainable products and practices can often be more expensive than their non-sustainable counterparts. This can be a barrier for many people, especially those with limited financial resources.
  - c. **Limited access to resources:** Sustainable practices may require access to resources such as clean energy or sustainable materials, which may not be readily available or affordable for everyone.
  - d. **Cultural and social norms:** Cultural and social norms can also play a role in promoting sustainable practices. In some cultures, for example, it may be considered impolite to refuse plastic bags or disposable utensils, making it difficult to adopt sustainable practices.
- 3. Support local businesses:** Supporting local businesses and industries helps to strengthen the local economy, create jobs, and reduce carbon emissions associated with transportation. Local businesses play a crucial role in sustainable development by contributing to the economic, social, and environmental well-being of their communities. Here are some of the key roles local businesses can play in sustainable development:
- a. **Economic Development:** Local businesses can help promote economic development by creating jobs and generating income for the community. They can also contribute to the growth of other local businesses by buying local goods and services, which helps to circulate money within the community.
  - b. **Environmental Sustainability:** Local businesses can take steps to minimize their environmental impact by reducing waste, conserving energy, and using sustainable materials. This can help to protect the natural resources of the community and promote long-term sustainability.
  - c. **Social Responsibility:** Local businesses have a responsibility to their communities and can play a role in promoting social justice and equality. They can support local charities and community organizations, provide job training and education programs, and prioritize ethical business practices.
- 4. Implement regulations and policies:** Governments can implement regulations and policies that encourage sustainable practices, such as taxes on carbon emissions and incentives for renewable energy. Government regulation plays an important role in promoting sustainable energy by setting standards, providing incentives, and enforcing regulations. Some of the key roles that government regulation can play in promoting sustainable energy are:
- a. **Setting Renewable Energy Targets:** Governments can set targets for renewable energy generation to encourage investment in clean energy sources. These targets can be set for specific sectors, such as electricity generation, transportation, or buildings.
  - b. **Providing Incentives:** Governments can provide incentives such as tax credits, rebates, and grants to encourage investment in sustainable energy projects. This can help offset the higher initial costs of these projects and make them more attractive to investors.
  - c. **Mandating Renewable Energy:** Governments can require utilities to generate a certain percentage of their electricity from renewable sources, such as wind or solar power. This can create a market for renewable energy and drive investment in these technologies.
  - d. **Supporting Research and Development:** Governments can provide funding for research

and development of new sustainable energy technologies, such as energy storage or advanced solar panels. This can help accelerate the development and deployment of these technologies.

5. **Greenwashing and credibility:** With the growing focus on ESG, there is a risk of “greenwashing” or superficially presenting a company as environmentally and socially responsible without making substantial changes. This undermines the credibility of ESG efforts and makes it challenging for stakeholders to differentiate between genuinely sustainable companies and those engaging in token gestures. Robust verification mechanisms and transparent reporting are needed to address this challenge.
6. **Global disparities and uneven adoption:** ESG and economic sustainability face global disparities in terms of awareness, regulation, and implementation. Developing countries and emerging markets may face unique challenges in adopting sustainable practices due to resource constraints, limited access to financing, and competing development priorities. Bridging these disparities and ensuring a more equitable adoption of ESG practices across regions is a significant challenge.
7. **Data quality and standardization:** ESG performance relies heavily on data collection and reporting. However, there is often a lack of standardized metrics, inconsistent data quality, and limited transparency. This makes it difficult for investors, stakeholders, and regulators to compare and assess companies’ ESG performance accurately. Improving data quality, establishing industry standards, and ensuring transparency are ongoing challenges in ESG and economic sustainability.

Addressing these challenges requires collaboration among businesses, investors, governments, and civil society organizations. Continuous efforts to improve data quality, standardization, and transparency, as well as raising awareness, promoting education, and fostering regulatory stability, are essential to overcome the challenges and advance ESG and economic sustainability.



Source: <https://www.lancaster.ac.uk/pentland/news-and-events/blog/esg-and-sustainability-different-but-related-ideas>



## Roles of CMAs in ESG and Economic Sustainability

CMAs play a critical role in facilitating to overcome the challenges faced during the implementation of measures for sustainability and ESG issues explained as above. Their primary responsibilities include, to help businesses manage and control costs, while ensuring the efficient use of resources. Due to these two roles, there are much expectations from CMAs as a helping tools to overcome the implementation hiccups:

Out of many, some key roles that cost accountants can have in promoting ESG and sustainability are:

1. **Cost analysis and decision-making:** CMAs can analyse the financial implications of sustainability initiatives and help the corporates to make informed decisions. They assess the costs and benefits of adopting sustainable practices, such as energy-efficient technologies, waste reduction strategies, or responsible sourcing. By providing accurate cost information, cost accountants enable organizations to evaluate the financial viability of sustainability projects and prioritize investments that align with ESG goals.
2. **Environmental accounting:** CMAs can help companies adopt environmental accounting practices to track and report on their environmental performance. This can help businesses identify areas where they can reduce their environmental impact, such as reducing greenhouse gas emissions, conserving water, and reducing waste.
3. **Sustainable sourcing:** CMAs can help businesses adopt sustainable sourcing practices by analysing the costs and benefits of sourcing materials from environmentally responsible suppliers. This can include evaluating suppliers based on their sustainability certifications, social responsibility, and environmental impact.
4. **Identifying opportunities for cost savings:** CMAs can analyse and track expenses related to sustainability initiatives and identify areas where costs can be reduced without compromising the effectiveness of those initiatives.
5. **Sustainable product development:** CMAs can work with product development teams to evaluate the environmental impact of new products, identify opportunities for improvement, and ensure that sustainability considerations are incorporated into product design and development.
6. **Sustainable supply chain practices:** CMAs can collaborate with suppliers to identify opportunities to reduce environmental impact and ensure that suppliers are meeting sustainability requirements.
7. **Evaluating the financial impact of sustainability initiatives:** CMAs can help organizations evaluate the financial impact of sustainability initiatives and develop business cases to justify investments in sustainability.

Overall, cost accountants play a crucial role in integrating ESG and sustainability into the financial decision-making processes of organizations. They provide financial analysis, performance measurement, and strategic insights that support the implementation of sustainable practices and contribute to long-term economic and environmental sustainability.

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## **ESG, COLLABORATION, AND BUSINESS RESPONSIBILITIES- THE CEO'S DILEMMA AND CMA'S ROLE**

### **Abstract:**

*This paper examines the CEO's dilemma in managing Environmental, Social, and Governance (ESG) concerns and the critical role played by Cost & Management Accountants (CMAs) in promoting collaboration and addressing business responsibilities. Drawing upon the seminal research findings, the literature emphasizes the importance of ESG integration, stakeholder collaboration, responsible leadership, and the role of CMAs in driving sustainable business management practices world over. The research highlights the benefits of ESG integration, the significance of stakeholder collaboration in addressing ESG concerns, the correlation between responsible leadership and firm performance, and the role of CMAs in facilitating ESG measurement and reporting. Overcoming challenges in ESG implementation requires collaboration and leveraging the expertise of CMAs and CMAs' role in assisting and guiding the CEOs in neutralizing the dilemmas faced in achieving organizational sustainability*

### **1. Introduction:**

In recent years, there has been a growing emphasis on Environmental, Social, and Governance (ESG) factors in business operations. As society becomes more conscious of the impact of corporate actions on the environment and society, businesses are faced with the challenge of balancing profit-driven goals with their responsibilities towards stakeholders. This essay explores the CEO's dilemma in managing ESG concerns and the critical role played by Cost & Management Accountants (CMAs) in promoting collaboration and addressing business responsibilities. Supported by the seminal research findings, this paper attempted to delve into the importance of ESG integration, stakeholder collaboration, and the role of CMAs in driving sustainable business practices.

The integration of Environmental, Social, and Governance (ESG) factors into business practices has gained significant attention in recent years. As companies strive to become more sustainable and responsible, the role of the Cost & Management Accountancy (CMA) Profession in achieving the goals of ESG becomes crucial. This literature is based upon the exploration of the effectiveness of the CMA profession in addressing ESG objectives and its professional potential for assisting and guiding the strategic management team of multinational corporations besides domestic corporate houses across the Indian sub-continent in general and the Chief Executive Officers (CEOs) in particular. The objectives of ESG encompass the integration of sustainability principles into business practices, aiming to create long-term value for organizations, society, and the environment. In achieving these objectives, the active involvement and professional expertise of CMAs worldwide,



play a crucial role in assisting and guiding the CEOs when they face dilemmas and decisions making undo syndrome from the very stage of conceptualization of business ideas to navigation and carrying over the day to day economic activities in order to achieve the purpose of triple Ps(People, Profit and Planet).

## 2. Objectives of ESG

ESG's objectives are multifaceted, aiming to address environmental, social, and governance issues within organizations. These objectives include:

- a. Environmental: Mitigating environmental impacts, promoting resource efficiency, and transitioning towards a low-carbon economy.
- b. Social: Ensuring fair and inclusive practices, respecting human rights, promoting diversity and inclusion, and fostering community engagement.
- c. Governance: Establishing robust corporate governance frameworks, promoting transparency and accountability, and managing risks effectively.

## 3. Empirical Studies in Support of Linkage between CMA Profession and ESG

There are many seminal empirical research findings that established the potential and enabling roles of CMAs in particular and the CMA Profession in general, and the following are a few of the observations based on the contemporary empirical studies

According to Adams, Freedman, and Tregidga (2017), the CMA profession plays a critical role in incorporating ESG factors into management decision-making processes. Their study reveals that CMAs possess the necessary skills and knowledge to quantify and evaluate ESG risks and opportunities, enabling companies to make informed choices. Again, In their research, Demiralay and Flamm (2019) highlighted that the CMA profession is instrumental in developing performance measurement systems that capture and monitor ESG indicators. Their study emphasizes that the integration of ESG metrics into management accounting frameworks enhances organizational transparency and accountability. Further, Rimmel and Unerman (2017) observed that CMAs contribute to the identification and management of ESG risks, thereby helping organizations minimize potential negative impacts on the environment and society. Their study emphasizes the significance of cost and management accountants in implementing effective ESG risk assessment frameworks.

According to Bebbington et al. (2017), CMAs have the expertise to develop ESG-related Key Performance Indicators (KPIs) and targets, allowing organizations to measure their progress towards sustainability goals. Their research suggests that the involvement of CMAs in ESG reporting enhances the credibility and reliability of disclosed information. Besides, in their study, Schaltegger and Burritt (2017) argued that CMAs are essential in integrating ESG considerations into cost management systems. Their research highlights the potential for CMAs to drive cost efficiencies while simultaneously addressing environmental and social concerns. Further, research conducted by Biondi et al. (2019) suggests that CMAs contribute to the development and implementation of sustainable management practices. Their study showcases the role of CMAs in guiding organizations towards sustainable strategies and fostering a culture of continuous improvement. Again, in a study by Laine and Rajala (2019), it is found that CMAs contribute to the integration of social and environmental considerations into investment appraisal processes. Their research emphasizes that CMAs play a vital role in assessing the financial viability and long-term sustainability of investment projects with ESG implications.





Besides, La Torre et al. (2018) observed CMAs facilitate the implementation of ESG-oriented management control systems. Their study highlights the importance of CMAs in designing performance evaluation systems that incentivize sustainable practices, leading to improved organizational performance and ESG outcomes.

In a study by Schaltegger and Wagner (2017), it is revealed that CMAs contribute to the development of ESG-focused cost accounting systems. Their research demonstrates how CMAs can help organizations track the costs associated with environmental and social initiatives, enabling better decision-making and resource allocation. Further, research conducted by Herzig et al. (2019) suggests that CMAs play a significant role in sustainability performance measurement and reporting. Their study emphasizes the need for CMAs to understand and integrate ESG metrics into performance evaluation frameworks, thereby fostering sustainable practices and stakeholder engagement. It may be observed that the substance of the researchers' findings evidence unanimity in defining the roles of the CMAs as the enablers of ESG.

#### **4. Professional Expertise of CMAs in Achieving ESG Objectives**

The professional expertise of cost and management accountants plays a vital role in achieving ESG objectives within organizations. Their ability to collect and analyse data, conduct cost-benefit analyses, establish performance measurement and reporting frameworks, manage ESG risks, and integrate sustainability into decision-making processes makes them valuable contributors to responsible business practices. As the importance of ESG continues to grow, cost and management accountants will play an increasingly pivotal role in driving sustainable and ethical business conduct. The next section presented how CMAs could contribute their professional expertise and due-diligence in achieving the objectives of ESG in a global scenario.

##### **4.1: The Global Context**

As far as achieving ESG objectives in global context is concerned, CMAs are equipped with professional skills and modern management techniques for achieving the purpose of ESG and the following are some of their contributory quotients.

##### **Incorporating ESG into Management Practices**

Research by Adams, Freedman, and Tregidga (2017) highlights that CMAs have the necessary skills and knowledge to incorporate ESG factors into management decision-making processes. CMAs can help organizations assess and quantify ESG risks and opportunities, enabling informed choices aligned with sustainability objectives.

##### **Performance Measurement and Reporting**

CMAs contribute to ESG objectives through the development of performance measurement systems that capture and monitor ESG indicators, as demonstrated by Demiralay and Flamm (2019). By integrating ESG metrics into management accounting frameworks, CMAs enhance organizational transparency, accountability, and the ability to track progress towards sustainability goals.

##### **ESG Risk Management**

CMAs play a critical role in identifying and managing ESG risks, as emphasized by Rimmel and Unerman (2017). Their expertise enables organizations to minimize potential negative impacts on the environment and society. CMAs can help design and implement



effective ESG risk assessment frameworks, ensuring sustainable practices are embedded within organizational processes.

#### ESG Reporting and Disclosures

Bebbington, Unerman, and O'Dwyer (2017) highlight the importance of CMAs in the development of ESG-related Key Performance Indicators (KPIs) and targets. CMAs ensure that ESG information disclosed by organizations is reliable, credible, and meets stakeholder expectations. Their involvement enhances the quality of ESG reporting, enabling effective communication of sustainability performance.

#### Integration of ESG into Cost Management Systems

Schaltegger and Burritt (2017) suggest that CMAs are instrumental in integrating ESG considerations into cost management systems. By identifying cost-efficient sustainability initiatives, CMAs help organizations achieve environmental and social objectives while maintaining financial viability.

#### Sustainable Management Practices

Biondi, Gond, and Schiantarelli (2019) emphasize the role of CMAs in guiding organizations towards sustainable management practices. CMAs contribute to the development and implementation of strategies that align business goals with ESG objectives. Their expertise helps embed sustainability into budgeting, reporting, and overall organizational decision-making.

#### ESG Integration in Investment Appraisal

Laine and Rajala (2019) demonstrate that CMAs contribute to the integration of social and environmental considerations into investment appraisal processes. CMAs assess the financial viability and long-term sustainability of investment projects with ESG implications, ensuring that organizations make informed investment decisions aligned with ESG objectives.

#### ESG-Oriented Management Control Systems

La Torre, Matonti, and Sicoli (2018) highlight the role of CMAs in greening management control systems. CMAs contribute to the design and implementation of performance evaluation systems that incentivize sustainable practices and align with ESG objectives. By integrating ESG indicators into management control systems, CMAs foster a culture of sustainability within organizations.

#### Sustainability Performance Measurement

Herzig, Schaltegger, and Burritt (2019) emphasize the significance of CMAs in sustainability performance measurement and reporting. CMAs play a crucial role in understanding and integrating ESG metrics into performance evaluation frameworks. By measuring and monitoring sustainability performance, CMAs contribute to improved sustainability outcomes and stakeholder engagement.

### 4.2: CMAs Effectiveness in the Indian Context

In the context of India, CMAs are well versed in the enabling processes of ESG implementation, monitoring and measuring the outcomes of ESG. CMAs well exposed to the relevance of national resource management and they can avail a unique opportunity



to make ESG successful in balancing socioeconomic development and guiding the agents responsible in ESG governance. The Institute of Cost Accountants of India (ICMAI) has recognized the importance of sustainability and has included ESG-related topics in the syllabus for CMAs and the Indian CMAs can leverage their expertise and professional expertise to address ESG challenges specific to the country, such as sustainable supply chain management, social impact assessment, and environmental compliance. Additionally, research conducted by scholars and practitioners in India, such as Rathi et al. (2020) and Mahendri and Meenakshi (2020), explores the role of CMAs in sustainable development, highlighting the potential of Indian CMAs to drive positive change and contribute to ESG goals. The active involvement and professional expertise of CMAs, including Indian CMAs, are vital in achieving the objectives of ESG. Through their ability to incorporate ESG factors into management practices, develop performance measurement systems, manage ESG risks, enhance reporting and disclosures, integrate ESG into cost management systems, foster sustainable management practices, evaluate investment projects, and implement ESG-oriented control systems, CMAs make a substantial impact on sustainability and organizational performance. With their knowledge and skills, CMAs play a crucial role in creating a more sustainable and responsible business environment, both globally and within the Indian context.

## 5. CMAs-the Critical Success Factors of ESG

The Institute of Cost Accountants of India (ICMAI) and its members have a significant role to play in guiding multinational corporations (MNCs) and various associated agencies towards achieving socioeconomic goals set by world leaders. This paper presents the critical role the ICMAI and its members can play in assisting and guiding these entities in aligning their strategies and practices with the broader socioeconomic objectives. The discourse is based upon the following seminal research findings

### Incorporating Sustainability into Corporate Strategy

According to Elkington (1997), ICMAI members can help MNCs integrate sustainability considerations into their corporate strategies. By analysing the economic, environmental, and social impacts of business activities, members can guide MNCs in formulating sustainable strategies that contribute to socioeconomic goals.

### Implementing Ethical Business Practices

Research by Crane and Matten (2016) emphasizes the importance of ethical business practices in achieving socioeconomic objectives. ICMAI members can guide MNCs in adopting ethical principles such as transparency, accountability, and responsible governance, which contribute to sustainable development.

### Social Impact Assessment

ICMAI members can assist MNCs and associated agencies in conducting social impact assessments to evaluate the potential effects of their operations on local communities and society. This approach, highlighted by Hezri and Dovers (2006), enables MNCs to align their activities with socioeconomic goals and address community concerns.

### Cost Management for Social Responsibility

As highlighted by Bhimani et al. (2008), ICMAI members can guide MNCs in integrating social responsibility into cost management practices. By identifying cost-effective strategies



that prioritize socioeconomic objectives, members help organizations optimize their resources and contribute to sustainable development.

#### Integrated Reporting

ICMAI members can support MNCs in adopting integrated reporting, as proposed by Adams et al. (2016). By combining financial, environmental, and social information in their reporting, MNCs can provide stakeholders with a comprehensive understanding of their performance, including their contribution to socioeconomic goals.

#### Sustainable Supply Chain Management

Research by Walker et al. (2008) suggests that ICMAI members can play a vital role in promoting sustainable supply chain management practices among MNCs. By advising on supplier evaluation, ethical sourcing, and environmental considerations, members help MNCs create resilient and socially responsible supply chains.

#### Carbon Accounting and Reduction

ICMAI members, in line with the research of Ball and Asare (2009), can guide MNCs in carbon accounting and reduction strategies. By measuring and managing carbon emissions, members assist organizations in mitigating climate change impacts and aligning their operations with global socioeconomic goals.

#### Responsible Investment and Financing

ICMAI members can advise MNCs and associated agencies on responsible investment and financing practices. Research by Hawn and Ioannou (2016) highlights the importance of considering environmental, social, and governance factors in investment decisions, ensuring alignment with socioeconomic objectives.

#### Performance Measurement and Incentives

As suggested by Schmallegger et al. (2017), ICMAI members can assist MNCs in developing performance measurement frameworks that integrate socioeconomic indicators. By aligning incentives with socioeconomic goals, members contribute to the establishment of a sustainable performance culture within organizations.

#### Stakeholder Engagement

ICMAI members, drawing from the research of Mitchell et al. (1997), can guide MNCs in effective stakeholder engagement practices. By facilitating dialogue with diverse stakeholders, including local communities, NGOs, and government agencies, members help MNCs understand and address socioeconomic concerns.

## 6. Capacity Development of CMAs for Guiding CEOs of MNCs and Domestic Firms

In the pursuit of achieving EESG objectives, the Institute of Cost Accountants of India (ICMAI) and its members play a crucial role in guiding the strategic management of multinational corporations (MNCs) and domestic firms in India. To effectively navigate the complexities of ESG challenges, ICMAI members need to be equipped with modern technology tools and expertise. This essay explores the importance of technology in supporting ICMAI members' role in achieving ESG objectives and guiding strategic management practices.

#### Data Analytics:

ICMAI members should leverage modern data analytics tools to collect, analyse, and interpret



ESG-related data. Through advanced data analytics techniques, such as machine learning and predictive modelling, members can identify trends, patterns, and risks associated with ESG factors. This enables them to guide MNCs and domestic firms in formulating strategies aligned with ESG objectives.

#### Sustainability Management Systems

The utilization of technology-enabled sustainability management systems is crucial for ICMAI members to effectively monitor and manage ESG performance. These systems provide real-time visibility into various sustainability metrics, facilitate goal-setting and tracking, and support decision-making processes. By recommending and implementing such systems, members enhance the strategic management of organizations towards achieving ESG objectives.

#### Remote Collaboration Tools

Given the global nature of MNCs and the increased adoption of remote work practices, ICMAI members should be proficient in using remote collaboration tools. These tools enable seamless communication and collaboration among geographically dispersed teams, facilitating the exchange of ESG-related information, best practices, and knowledge sharing.

#### ESG Reporting Software:

ICMAI members can guide MNCs and domestic firms in selecting and implementing ESG reporting software. These software solutions streamline data collection, analysis, and reporting processes, ensuring accurate and standardized ESG disclosures. By recommending and integrating ESG reporting software, members enhance transparency and accountability in organizations' ESG reporting practices.

#### Blockchain Technology

Blockchain technology offers opportunities for ICMAI members to enhance the credibility and transparency of ESG-related information. By leveraging blockchain, members can ensure the immutability and traceability of sustainability data, such as carbon emissions, supply chain information, and social impact indicators. This supports the accurate measurement and verification of ESG performance.

#### Digital Supply Chain Management

ICMAI members can guide MNCs in adopting digital supply chain management solutions that integrate ESG considerations. These technologies enable end-to-end visibility, traceability, and optimization of supply chain activities, facilitating sustainable sourcing, waste reduction, and ethical practices. Members can assist in selecting and implementing digital supply chain management systems aligned with ESG objectives.

#### Renewable Energy and Resource Management

With the transition to a low-carbon economy, ICMAI members should be knowledgeable about renewable energy technologies and resource management systems. By understanding the financial and operational implications of renewable energy investments and implementing resource optimization strategies, members can guide organizations in achieving ESG goals related to energy efficiency and environmental impact reduction.

#### Artificial Intelligence (AI) for Risk Assessment

ICMAI members can employ AI-based risk assessment tools to identify and mitigate ESG-





related risks. AI algorithms can analyze vast amounts of data, including social media sentiment, environmental impact assessments, and regulatory changes, to identify emerging risks and provide proactive recommendations for risk management strategies.

### 7. **CMAs in Technology Driven Global Business Management Arena**

ICMAI members have a vital role to play in guiding multinational corporations and associated agencies towards achieving socioeconomic goals. Through their expertise in sustainability integration, ethical business practices, social impact assessment, cost management for social responsibility, integrated reporting, sustainable supply chain management, carbon accounting and reduction, responsible investment and financing, performance measurement and incentives, and stakeholder engagement, ICMAI members can provide valuable guidance and support. By incorporating the insights from seminal research works and leveraging their knowledge, ICMAI members can help MNCs align their strategies, operations, and reporting practices with broader socioeconomic objectives. This alignment not only contributes to the achievement of sustainable development goals but also enhances the reputation, competitiveness, and long-term success of multinational corporations. In substance, equipping ICMAI members with modern technology is crucial for guiding the strategic management of MNCs and domestic firms in achieving ESG objectives.

### 8. **CMAs' Exposure to Contemporary Technology-An Imperative**

CMAs fraternity cannot discharge their professional duties and responsibilities in isolation, but it is an imperative for them to discharge their meaningful and significant role both in shoes of team players and team leaders in conjunction with other professionals, subscribing to common objectives in terms of derivation of efficiency, effectiveness and economy in order to make the hiring organizations competitive and sustainable in the environment of 'Triple Bottom Line- People, Profit and Planet'. By leveraging data analytics, sustainability management systems, remote collaboration tools, ESG reporting software, blockchain technology, digital supply chain management, renewable energy solutions, and artificial intelligence for risk assessment, members can effectively navigate the complexities of the ESG landscape.

Through continuous professional development and collaboration, ICMAI members can play a pivotal role in guiding organizations towards sustainable practices and contributing to the socioeconomic well-being of society. Equipping ICMAI members with modern technology tools is essential for effectively achieving ESG objectives and guiding strategic management practices. By leveraging data analytics, sustainability management systems, remote collaboration tools, ESG reporting software, blockchain technology, digital supply chain management, renewable energy solutions, and artificial intelligence for risk assessment, ICMAI members can enhance their capabilities to guide MNCs and domestic firms in aligning their strategies with ESG objectives.

### 9. **Businesses' Priorities in the ESG Regime Worldover**

This section attempted to focus on the priorities of global business in the ESG environment and the following are the constituents of the nucleus of ESG landscape.

#### ESG Integration

Research by Eccles et al. (2019) highlights the financial benefits of ESG integration. The study found that companies with a high ESG rating outperformed their peers in terms of stock market performance and profitability. By considering ESG factors in their decision-making



processes, CEOs can align business objectives with sustainability goals, thereby enhancing long-term value creation. This research emphasizes the need for CEOs to recognize the strategic importance of ESG integration and implement it as a core aspect of their business operations.

#### Stakeholder Collaboration

A study conducted by Freeman et al. (2010) emphasizes the significance of stakeholder collaboration in addressing ESG concerns. The research demonstrates that involving various stakeholders, including employees, customers, communities, and non-governmental organizations (NGOs), in the decision-making process enhances the effectiveness of ESG initiatives. Collaboration allows CEOs to gain diverse perspectives, build trust, and create shared value. It is crucial for CEOs to foster collaborative relationships with stakeholders to gain support for ESG initiatives and ensure their successful implementation.

#### Responsible Leadership

In a seminal study by Waldman et al. (2006), responsible leadership is highlighted as a crucial element for CEOs to navigate the ESG landscape. The research establishes a positive correlation between responsible leadership and firm performance. CEOs who demonstrate ethical decision-making, prioritize the interests of stakeholders, and foster a culture of corporate social responsibility are more likely to create sustainable value. The findings underscore the importance of CEOs embracing their role as responsible leaders and setting an example for their organizations.

### 10. CMAs in ESG Integration, Collaboration and Firms' Performance

A research study by Young and Marais (2017) examines the role of CMAs in driving ESG integration within organizations. The study identifies CMAs as key agents in facilitating the measurement, reporting, and management of ESG performance. CMAs possess the technical expertise to develop ESG metrics, analyze data, and provide insights to support decision-making. The research underscores the need for CEOs to leverage the skills of CMAs to effectively integrate ESG considerations into business strategies and enhance organizational performance by guiding the CEOs to act as the responsible leaders towards results fetching initiatives in terms of measurable sustainability. Many a time, implementing ESG initiatives is not without challenges. CEOs often face resistance from internal stakeholders, lack standardized reporting frameworks, and uncertainty regarding the financial impact of sustainability investments (Pflugrath et al., 2010). Overcoming these challenges requires CEOs to foster a culture of collaboration, innovation, and transparency, while working closely with CMAs to navigate the complexities of ESG implementation.

#### Overcoming Challenges:

Research by Pflugrath et al. (2010) sheds light on the challenges faced by CEOs in implementing ESG initiatives. The study reveals that CEOs encounter resistance from internal stakeholders, lack of standardized reporting frameworks, and uncertainty regarding the financial impact of sustainability investments. Overcoming these challenges requires CEOs to foster a culture of collaboration and innovation while aligning ESG goals with core business objectives. CMAs can play a pivotal role in addressing these challenges by providing financial analysis, identifying cost-saving opportunities, and helping CEOs navigate the complexities of ESG implementation.

#### CMAs-the Catalysts for Facilitating ESG Integration

ESG integration enables CEOs to align business objectives with sustainability goals, leading



to enhanced financial performance and long-term value creation (Eccles et al., 2019). By considering ESG factors in decision-making processes, CEOs can drive innovation, improve operational efficiency, and mitigate risks associated with environmental and social challenges.

### CMAAs- the Combaters of Collaboration Undo Syndrome

As businesses navigate the complex landscape of ESG, collaboration and responsible leadership are essential. CEOs must recognize the financial benefits of ESG integration, engage stakeholders in decision-making processes, and leverage the expertise of CMAAs. By embracing their role as responsible leaders and addressing the CEO's dilemma, businesses can proactively manage their ESG responsibilities while simultaneously driving sustainable growth and creating long-term value. The five seminal research findings discussed in this essay highlight the importance of ESG integration, stakeholder collaboration, and the role of CMAAs in addressing the CEO's dilemma and promoting sustainable business practices. Stakeholder collaboration is crucial for CEOs to effectively address ESG concerns. Involving various stakeholders in decision-making processes enhances the effectiveness of ESG initiatives and helps gain diverse perspectives and support (Freeman et al., 2010). Collaboration builds trust, fosters shared value, and ensures the successful implementation of sustainability strategies.

### CMAAs the Guides of the CEOs in Emerging as Responsible Leaders

Responsible leadership is a fundamental aspect of navigating the ESG landscape. CEOs who prioritize ethical decision-making, stakeholder interests, and corporate social responsibility are more likely to create sustainable value (Waldman et al., 2006). Responsible leadership sets the tone for the organization, influencing its culture and behavior. CMAAs play a vital role in driving ESG integration within organizations. They possess the technical expertise to develop ESG metrics, analyze data, and provide insights to support decision-making (Young and Marais, 2017). By leveraging the skills of CMAAs, CEOs can effectively integrate ESG considerations into business strategies and enhance organizational performance.

## 11. Conclusion

The CEO's dilemma in managing ESG concerns is a critical challenge faced by businesses today. By integrating ESG factors, collaborating with stakeholders, and embracing responsible leadership, CEOs can effectively address this dilemma. CMAAs play a crucial role in supporting CEOs by providing the necessary expertise in ESG measurement, reporting, and management. By recognizing the financial benefits of ESG integration and adopting sustainable business practices, businesses can not only fulfill their responsibilities towards society and the environment, but also drive long-term value creation and success. Furthermore, the implications of ESG, collaboration, and business responsibilities extend beyond individual organizations. The collective effort of CEOs and CMAAs in addressing the CEO's dilemma can have a transformative impact on industries and society as a whole.

Firstly, the integration of ESG considerations in business strategies can foster innovation and drive industry-wide change. When CEOs prioritize sustainability and responsible practices, it sets a precedent for other companies to follow suit. This ripple effect encourages industry-wide collaboration and creates a competitive environment where businesses strive to outperform each other in terms of their ESG performance. Such collaboration can lead to the development of new technologies, best practices, and standards that benefit the entire industry. Secondly, the role of CMAAs in driving ESG integration is crucial in shaping the future of corporate reporting. As the demand for transparent and standardized ESG reporting increases, CMAAs can contribute their





expertise to develop robust reporting frameworks. This involvement ensures that the reported ESG metrics are accurate, relevant, and comparable across organizations. Consistent reporting standards facilitate benchmarking, analysis, and informed decision-making by stakeholders, including investors, regulators, and consumers. Thirdly, addressing the CEO's dilemma through ESG integration and collaboration can improve the relationship between businesses and their stakeholders. By involving stakeholders in decision-making processes, CEOs can enhance trust and foster long-term relationships based on shared values. Engaging with stakeholders, such as local communities, NGOs, and customers, can lead to better understanding of their needs and concerns, ultimately enabling businesses to design products and services that align with societal expectations. This collaborative approach strengthens the social license to operate and contributes to sustainable development. Finally, the role of CMAs in supporting CEOs is not limited to ESG integration alone. CMAs can also play a pivotal role in evaluating the financial implications of sustainability initiatives, identifying cost-saving opportunities, and measuring the impact of ESG investments on the organization's bottom line. By providing accurate financial analysis and insights, CMAs enable CEOs to make informed decisions and demonstrate the financial viability of ESG strategies to stakeholders.

The CEO's dilemma of balancing business responsibilities with ESG concerns presents a complex challenge for organizations. However, by integrating ESG considerations into their strategies, collaborating with stakeholders, and leveraging the expertise of CMAs, CEOs can navigate this dilemma and drive sustainable business practices. The collective effort of CEOs and CMAs not only benefits individual organizations but also has industry-wide implications, shaping corporate reporting standards, fostering innovation, and strengthening stakeholder relationships. By addressing the CEO's dilemma, businesses can contribute to a more sustainable and responsible future for society and the environment.

By staying abreast of the latest technological advancements and integrating them into their practices, ICMAI members can effectively support organizations in navigating the complex landscape of ESG challenges. Through the utilization of modern technology, members can enhance data-driven decision-making, facilitate transparency and accountability, optimize resource management, and proactively address ESG risks and opportunities. To ensure the successful integration of technology, ICMAI members should undergo continuous professional development programs that focus on enhancing their technological competencies. Training sessions, workshops, and certifications can equip members with the necessary knowledge and skills to leverage modern technology tools effectively. Furthermore, collaboration with technology providers, sustainability experts, and industry associations can enable ICMAI members to access cutting-edge solutions and stay at the forefront of technological advancements in the ESG domain. By establishing partnerships and networks, members can exchange best practices, share knowledge, and collectively contribute to advancing the role of technology in achieving ESG objectives.

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## **GREEN ENTREPRENEURSHIP : A LOOK TOWARDS 22<sup>ND</sup> CENTURY AND HENCEFORTH**

**Abstract :**

*Over the last few decades the global environmental crisis has increased to a great extent due to various types of activities of the human beings which has huge impact on the ecosystem .*

*In order to come out of this problem various countries of the modern day world has started thinking of developing green entrepreneurs in their countries or societies to overcome the environmental problems and save our planet and the future generations from environmental degradations .*

*In this paper we have tried to study the importance of developing green entrepreneurship throughout the societies of the modern world and the opportunities and the challenges which they might face in the process .*

**Introduction :**

The basic idea behind various types of modern day business activities has been to reverse the bad effects caused to the environment in the past decades and protect the environment from further degradation so that we can leave a much cleaner and a better environment for our future generations to come and entrepreneurs have been the most important players in introducing the new ideas in the market and be instrumental in incurring changes to the ways and methods of performing economic activities .

**Entrepreneurship :**

Entrepreneurship can be regarded as those abilities which are related to innovate , develop and organise a specific idea into a business venture and run a organisation to make some profit out of it and the entrepreneurs can be regarded as those persons who can bring this new ideas or innovations into the market and replace the old ones running in the existing markets .

**Green Entrepreneur :**

A Green Entrepreneur can be regarded as a person who specifically goes on to take care about a environmental or a social problem or a social need through adoption and execution of various types of entrepreneurial ideas which will not only go on to protect the environment from degradation but will also go on to help in development of the economies of the countries of the modern world .

**Green Entrepreneurship :**

Green Entrepreneurship can be regarded as those activities which goes on to develop enterprises or organisations or startups which in turn will produce those types of services , products or processes which will specifically take care of the modern day's environmental degradations and prevent further damages to it to protect the current and future generations of life in our planet earth .



### **Need for Green Entrepreneurships :**

The basic need for green entrepreneurships arises from the needs of the modern societies to confront the environmental problems and develop a better way of living and so we see that the global markets for the environment friendly technologies , businesses , products and services are increasing day by day .

### **Some common terms of Green Entrepreneurship :**

- 1) **Cleantech** : This term is commonly used in Canada to describe those types of products and services that are mainly developed by green entrepreneurs .
- 2) **Greentech** : In Germany the term greentech is used to specify those technologies that provide solutions to protect the environment and meet the basic human needs in a much better and sustainable way .
- 3) **Climate Tech** : This term is used in Israel to define those companies or organisations which develops technologies that are aimed to reduce carbon emissions in to the environment from various types of industries and aims to adverse the bad impacts of climate changes .

### **Goal of Green Entrepreneurship :**

The basic goals of green entrepreneurships are to have business ideas or activities which will help in having a proper and positive impact on the natural environment surrounding us and help in overall sustainable development of the societies throughout the entire world .

### **Objective of the Study :**

The main objective of this study has been to find out the efficacy and importance of introducing green entrepreneurship in the modern societies throughout the world and to find out and solve the challenges and obstacles of introducing green entrepreneurship so that it can go on to help in prevention of serious degradation of the natural environment and help in overall development of our planet earth .

### **Literature Review :**

Steven Asma in his report “ Challenges and Opportunities that green entrepreneurs face when building their network compared to traditional network formalities , a triple bottom line perspective “ stated that in the past decade and recently there has been an increasing awareness towards the ecological and sustainable aspects of entrepreneurship and organisations and more and more companies wants to reduce their carbon footprints in order to contribute to diminishing the bad environmental impact that businesses have . Customers , investors and other stakeholders demand continuous improvements in these environmental facets and companies are increasingly encouraged to implement sustainable business practices to reduce the environmental load and to stay competitive in the market .

### **Research Methodology :**

This study has been exploratory , casual and empirical in nature and the data needed for such research work has been collected through both direct and indirect methods of collection of primary and secondary data .

### **Direct Method :**

Primary data has been collected by two stage sampling technique during field visit by personal interview through a structured questionnaire of randomly selected respondents who are either service holders or are engaged in or practices various types of professions , businesses or have other





means of earning livelihood and are normal ordinary residents of Kolkata city of India .

### **Indirect Methods :**

A number of books , newspapers , magazines , journals , websites , edited volumes , working papers , e-books and other reports were consulted to gather information related to our study .

The data obtained from both the primary and secondary sources was examined and analysed thoroughly and the results of the analysis are presented below .

### **Findings :**

The United Nation’s (UN) Intergovernmental Panel on Climate Change’s (IPCC ) , most recent report has confirmed that various types of human activities have caused enormous changes in the climate which are “ unprecedented in thousands , if not hundreds of thousands of years “ .

As observed over the years it is seen that changes in the normal climatic conditions of the planet earth is actually causing enormous bad impacts on the societies throughout the world in the form of wildfires , droughts and overall increasing of the global temperatures .

Therefore according to the various studies , various climate experts have specifically mentioned that in order to avoid serious economic , environmental and social hazards the unnecessary rise in global temperatures has to be controlled by immediate reductions of large scale greenhouse gas emissions in our environment .

In this regard we see that entrepreneurs are the basic group who will be instrumental in reducing the green house gas emissions into the environment with their ability to innovate , develop and promote green technology solutions and so green entrepreneurship can be regarded as a newer method which can go on to protect the world environment for the current as well as for the future generations and also maintain and increase the economic growth of the countries of the modern world .

Therefore we can say that green entrepreneurs normally goes on to play a very important role in helping the modern business communities of the entire world to accept those business practices which will take care about the environmental , social and economical aspects or factors of sustainable development in a much better manner than the normal ordinary entrepreneurs of the modern world .

### **Benefits of Green Entrepreneurship :**

The best effect of introducing green entrepreneurship in the modern societies is that it not only generates customer satisfaction but also helps the employees of those organisations in feeling much more safer when they work in a organisation which is much more environmentally friendly .

Thereafter we see that introducing green entrepreneurship is not only good for the environment but it also helps business organisations in a number of ways which are as follows :

- a) **Reduces wastages and decreases cost of operations :** As observed that by reducing unnecessary wastages of energy we can ultimately go on to save on valuable resources and related cost of production which in turn will definitely go on to increase the overall efficiency of the organisation .
- b) **Increase Modern Customer base :** Studies has shown that modern societies has developed a new brand of customers who are aware of the modern days environmental complexities and can be termed as “ Green Consumers “ , who actually goes on to influence the organisations to start green entrepreneurships for the overall betterment of the entire world . In this way it is seen that modern organisations which goes on to implement proper environmental protection measures goes on to attract modern customers in a much better manner.





- c) **Increase the brand image of the organisation :** It has also been observed that in any given day the image and reputation of any organisation which introduces proper measures to protect the environment increases to a huge extent which in turn goes on to provide overall success to that organisation in comparison to those other organisations which has not taken the necessary steps to protect the environment .

### **Challenges of Green Entrepreneurship :**

- 1) **Research and Development Cost :** In order to introduce better green technology in the market , organisations has to spend huge amount of money not only in the research and development of the technology but also huge amount of money is needed to implement and commercialise them in the market .
- 2) **Expensive :** The products of the green entrepreneurship can be a bit more costlier than the normal ordinary products currently existing in the market .
- 3) **Less Savings :** As the products from green entrepreneurships are a bit more costlier than the existing products of the market it can lead to a lower amount of savings for all the concerns .

### **Green Entrepreneurship in India :**

One of the important effects of climate change can be reflected in the loss of biodiversity through land degradation which can be a serious problem in a country like India where still today majority of the population depends on agriculture for their livelihood .

Modern India today has all the potentiality to achieve better economic growth even after taking care of the environment protection factors . Today we see that modern India has all the modern resources like social scientists, research organisations , developed innovation centres , etc , etc to take care of the country's long term sustainable development programmes which can obviously go on to help and influence the entire world to take the necessary steps towards green entrepreneurship to protect the environment from degradation .

### **ESG Investing : The New World Order :**

ESG which means Environment, Social and Governance are those factors which are currently influencing the Investing decisions in the modern world .

ESG Investing is not a new idea as studies suggests that there has been reports of this type of investing in the history where we see that there has been a idea or a concept of Socially Responsible Investing ( SRI) in the 1960s and 1970s but in the modern era the focus on ESG investment has once again increased not only due to some populist political decisions throughout the world but also due to the increased awareness of the common people of the world to protect and stop environmental degradation and develop the natural resources of the world for the betterment of the entire world .

### **Suggestions :**

In the modern era as more and more people are getting aware of the environmental problems they are actually wanting industries to perform their business activities after keeping in mind the environment protection factors .

Therefore it is always advisable to the modern day entrepreneurs to become much more environment conscious to develop their brand image in the market and increase their market presence to attract more and more modern day customers and increase their overall profitability through better competitive advantages in the modern markets of the modern world .

In this regard public authorities also play a very important role in developing and implementing



those types of policies which will go on to help and promote green entrepreneurship throughout the world to help in reducing the bad effects of the modern day's climate change which has been caused by the various types of human activities in the past .

### **Future of Green Entrepreneurships :**

Now-a-days with powerful media throughout the world most people are aware of the issues like environmental degradation alongwith the increase in the pollution levels throughout the world which has not only gone on to create some serious health issues of the modern day population of the world but has also caused various types of constraints in proper economically flourishing of the modern societies of the world .

The basic need for this moment with ever increasing population and economic activities is to understand that our earth's natural resources are limited and so the modern population of the world should understand and accept the concept of sustainability and try to apply it in every sector of activities .

Keeping the above points in mind many modern day entrepreneurs have already adopted or trying to keep the idea of ' Sustainability First ' in mind and trying to bring products or services which are environmentally conscious .

### **Conclusion :**

Various types of climate related natural disasters in the last few decades has forced the modern day's entrepreneurs or business owners and executives to recognise the environment related problems and take appropriate measures to protect the environment from further unnecessary degradations , while deciding on their basic economic activities and so today green entrepreneurship has become one of the important concept in performing the existing business activities .

Therefore we can say that promotion of green entrepreneurs to protect the natural resources and stop unnecessary degradation of the environment to provide a better and healthy environment to the future generations to come in our planet earth , is absolutely necessary not only for the current century but also for the 22nd Century and henceforth .

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## **DIGITIZATION OF FINANCIAL SERVICES, COMBATING SHADOW ECONOMY, AND IMPROVED E-GOVERNANCE**

### **Abstract:**

*Digitization of financial services is essential for protecting the green environment and fighting the shadow economy, which is helplessly affecting the growth of developing countries. The paper reveals the evidence that conventional methods of fighting the shadow economy have their limitations. However, the countries that succeeded to achieve a hundred percent digitization of financial services are well ahead in fighting the shadow economy. The paper recommends that the countries should take steps to ensure full digitization of financial services to reduce the menace of the shadow economy and reinstate the momentum of growth.*

### **1. Introduction**

The digital revolution has changed the landscape of accounting and finance. In the 1990s when every commercial bank and financial institution had to maintain ledgers and journals in hard-bound books, writing them, reporting them, and preserving them were enormously difficult. Hidden costs behind this system were the destruction of the green and unnecessary accommodation of inefficiency in the system. Thanks to computerization and artificial intelligence. These two have converted banking and financial services into completely paperless exercise, which is now fast, economical, and authentic. The matters are now system administered; hence, none can leave the counter, until the system says 'It is Okay'. Given the agenda of sustainable development without damaging the environment, the complete shift from paper-based currency notes to 'electronic currency and electronic payment system' along with digitization of financial services is the need of the hour. This is not only for the sake of protecting the green but also for saving the national economies from the evils of the shadow economy, which thrives parallel to the original economic system and weakens the developmental administration and governance.

### **2. Shadow Economy**

According to the IMF estimate, the average size of the shadow economy is around 8% of global output (IMF, 2019). It keeps a certain part of economic activity hidden, which cannot be accounted for, reported, and rationally reinvested. Cryptocurrencies and cybercrimes are fueling the crisis further. It steals and withdraws resources from the national stock of wealth and distorts the circular flow of production and distribution. Unscrupulous activities such as money laundering, financing of terrorism, etc. thrive under the darkness of the shadow economy and engender activities that derail the normal demand and supply conditions in the macroeconomic system. It always misleads the central bank of the country in estimating the right size of the



money supply and economic growth. The government of the country becomes puzzled to see actual inflation is much higher than the inflation projected based on econometric forecasting. Hence, fighting the shadow economy is an agenda of every government and it is a matter of discussion in every academic forum and policy-making. This paper is taking a glimpse at the state of the shadow economy of G20 countries and examining the effect of the shadow economy on the economic growth of the member countries.

Some researchers [i.e., Rishi and Boyce (1990) and Dhar P K (2003)] argue that the development of a shadow economy results in transferring of funds from the country to off-shore financial markets through clandestine methods. Medina, Leandro and Schneider, Friedrich (2017) produced estimates of the size of the shadow economy of 158 countries. Scholars show that African and Asian countries are mostly affected by this underground economy. Chhoker, Jagdeep S (2017) draws attention to the nexus between black money and the politics of the country. Currency in circulation as a percentage of GDP has a correlation with the level of corruption (Sands, 2016; Summers, 2016; Rogoff, 2016). Therefore, demonetization emerged as a necessity to combat corruption persisting in the economic affairs of the country. **Table 1**, shown below, shows the average estimates of the shadow economy as a percentage of the size of the actual economy of the G20 countries.

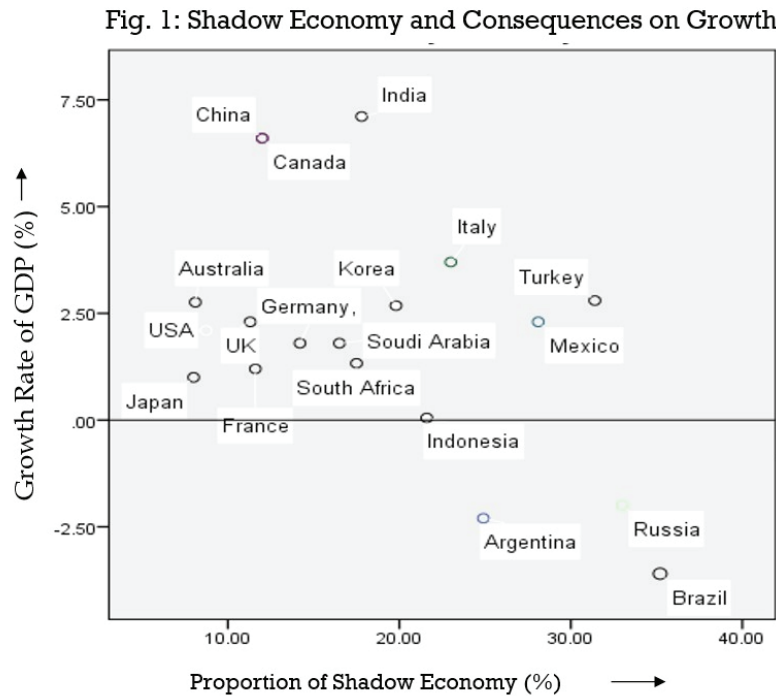
**Table 1: Size of Shadow Economy and Consequences on Growth:**

**The Fact sheet of G20 Countries**

Country	GDP Growth Rate in 2018 (%)	Shadow Economy as % of Actual Economy
Japan	1.00	8.00
Australia	2.76	8.10
USA	2.10	8.73
UK	2.30	11.30
France	1.20	11.60
Canada	6.60	12.00
China	6.60	12.00
Germany,	1.80	14.20
Soudi Arabia	1.80	16.50
South Africa	1.33	17.50
India	7.11	17.80
Korea	2.68	19.80
Indonesia	0.05	21.60
Italy	3.70	23.00
Argentina	-2.30	24.90
Mexico	2.30	28.10
Turkey	2.80	31.40
Russia	-2.00	33.00
Brazil	-3.60	35.20

Source: Shadow Economy data are collected from Medina, Leandro and Schneider, Friedrich (2018)) and GDP growth rates are collected from <https://data.worldbank.org/indicator/ny.gdp.mktp.kd.zg>. Very recent GDP data have been avoided to avoid the consequences of the Covid Pandemic.

**Table 1** reflects that economies inflicted by a higher percentage of shadow activities are rendered weak in terms of economic growth. Some countries like Brazil and Argentina that are burdened with high volumes of black money are saddled to experience negative growth rates. It is needless to state that there is a negative relationship between the size of the shadow economy and the rate of economic growth. This is more alarming in the case of African and Asian economies.



In Fig 1 the bi-variate data regarding GDP growth and the proportion of the shadow economy of the G20 countries have been plotted. The horizontal axis shows the proportion of the shadow economy and the vertical axis shows the rate of GDP growth. The plotted bi-variate data on the shadow economy and growth reflect a negatively sloping relation, which means the higher the shadow economy, the lower the growth. It makes countries crippled by the shadow economy, fail to achieve the targeted growth.

An analysis of the data, as compiled in Table 1 above, provides a significant negative correlation between GDP growth and the shadow economy. Table 2 shows that the correlation is negative and the same is statistically significant.

		GDP Growth	Shadow Economy
GDP Growth	Pearson Correlation	1	-.498*
	Sig. (1-tailed)		.015
	N	19	19
Shadow	Pearson Correlation	-.498*	1
	Sig. (1-tailed)	.015	
	N	19	19

\*. Correlation is significant at the 0.05 level (1-tailed).



### 3. Traditional Methods of Fighting Shadow Economy

There are many traditional methods for fighting the shadow economy. The methods adopted to address the problem include

- a. Demonetisations of higher denomination currency notes
- b. Preventing Tax Evasion
- c. Special Bearer Bond Schemes
- d. Voluntary Disclosure of Income Schemes
- e. Raids made by Income Tax Department or Enforcement Directorates

All these measures, listed above, are proved ineffective. Some dis-hoarding of black money occurs at the time of launching these schemes; however, after elapse of some time, the condition takes an adverse turn, because the first four methods give dishonest people a chance to convert their black money into white money. Dishonest people get the further motivation to generate more black money with an expectation that the government will once again announce a similar scheme in the future.

### 4. Digitization of Financial Services: A Proven Method to Fight Shadow Economy

Countries that are successful to digitize all financial services, near a hundred percent level, are successful to contain the shadow economy. It is due to the fact that every transaction is originating from a unique identification number, and the transaction gets recorded electronically; hence the chances of making manipulation, misappropriation, and money laundering get automatically blocked.

**Table 3** shows countries that have achieved major digitization of their financial services. These countries have only a limited proportion of shadow economies. For example, in Australia, the United Kingdom, and Canada, almost 90 percent of payments are digital payments. The proportion of the shadow economy in these countries reduced to a manageable level, which is below 10%.

**Table 3: Digital Transaction and Reduction of Shadow Economy**

Rank	Country	The proportion of Digital Payments	Percentage of people using digital mode	Percentage of Shadow Economy
1	Belgium	93	86	17.1
2	France	92	69	11.6
3	Canada	90	88	9.42
4	United Kingdom	89	88	8.32
5	Sweden	89	96	11.7
6	Australia	86	79	8.1
7	Netherlands	85	98	13.0
8	United States	80	72	7.1
9	Germany	76	88	7.76
10	South Korea	70	58	19

Source: [https:// lessonstartup.com/digitization-of-Indian-economy/](https://lessonstartup.com/digitization-of-Indian-economy/).

Shadow Economy figures of the last column are taken from IMF Working Paper WP/18/17





Every \$100 in circulation has the risk of creating black money of \$66.2 through the route of corruption, crime, and tax evasion (Rogoff, 2017). This assertion is, however, oversimplified. Nevertheless, the truth is confirmed from the data that the shadow economy has a direct relationship with currency in circulation. Roy, Dipen (2017) shows that corruption in a country is directly proportional to the percentage of currency in circulation. A glimpse at the raids made by the enforcement directorates, and the recovery of hidden money definitely reflects that the suspects do hoard illegal earnings in the form of high-denomination currency notes.

When every transaction is digitized and routed via a computerized system, exact financial details become transparent. This can assist the government to determine national income and assess the expected tax proceeds from it. It also assists in delivering governmental benefits to the right beneficiaries.

Former prime minister Rajiv Gandhi made a remark in the 1980s that 85% of the benefits of various developmental schemes do not reach the people. Now digitization has made it possible. Combining digitized financial services with unique identification (Aadhar) number provides an effective platform for better e-governance and administration of several developmental schemes.

## 5. Conclusion:

To protect the green environment and restrict the shadow economy, a reduction of the circulation of currency notes is essential. The paper recommends a hundred percent digitization of financial services and nearly hundred percent digital payments. This can work successfully to contain the growth of the shadow economy and help in offering improved e-governance for better delivery of the benefits of development to the people.

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## ROOFTOP SOLAR – A SURE WAY TO IMPLEMENT ESG INITIATIVE

### Abstract:

*Rooftop solar installations is a sure way of cutting electricity bills, whether it is an industry, commercial establishment, residential society or a bungalow. Its cuts down, the operating cost of an organization, cost per unit of a product and maintenance charges of a society.*

*ESG initiative is helping organizations and individuals to consider and evaluate solar as a source of energy that will go a long way in saving money and saving nature.*

### **Rooftop Solar – A sure way to implement ESG Initiative:**

Rooftop solar power systems can indeed be a reliable means of cost cutting for power consumers in India. Here are several reasons why:

1. **Reduced electricity bills:** By generating their own solar power, consumers can significantly reduce their reliance on grid electricity. Solar energy is a free and renewable resource, which means once the initial investment in solar panels is made; the electricity generated is virtually free. This can result in substantial savings on electricity bills over the system's lifespan, typically 25 years or more.
2. **Long-term cost stability:** Solar power provides a long-term fixed energy cost. As grid electricity prices tend to increase over time, investing in solar energy ensures a stable and predictable energy expense. This can protect consumers from the increase of electricity prices, providing greater financial stability and cost control.
3. **Government incentives and subsidies:** The Indian government offers various incentives and subsidies to promote rooftop solar installations. For instance, the Ministry of New and Renewable Energy (MNRE) provides financial assistance through capital subsidies, tax incentives, and low-interest loans. These incentives can significantly reduce the upfront investment cost, making solar installations more affordable for consumers.
4. **Net metering and feed-in tariffs:** Many states in India have implemented net metering policies. Under net metering, any surplus electricity generated by the rooftop solar system can be exported to the grid, and consumers receive credits for the exported energy. This drastically reduces electricity bills.
5. **Reduced dependence on diesel generators:** Industries and commercial establishments often rely on diesel generators during power outages or when grid electricity is expensive. However, diesel generators are costly to operate and maintain. Rooftop solar systems can serve as a reliable alternative, providing clean and sustainable power, reducing the need for diesel generators, and lowering overall energy costs.



- 6. Environmental benefits:** In addition to cost savings, rooftop solar installations offer environmental advantages. By utilizing solar power, businesses can significantly reduce their carbon footprint and contribute to India's efforts to combat climate change. This can enhance their brand image and appeal to environmentally conscious consumers.

### **Rooftop solar entrepreneurship in India holds significant potential for several reasons:**

- 1. Increasing energy demand:** India is rapidly developing causing high demand of electricity. Rooftop solar systems can help meet this demand. Ideally the power could be generated where it is consumed.
- 2. Abundant solar resources:** India receives abundant sunlight throughout the year, making it an ideal location for solar power generation. The country has a high solar radiation potential, especially in regions like Rajasthan, Gujarat, Tamil Nadu, and Andhra Pradesh.
- 3. Government support:** The Indian government has been actively promoting solar energy through various initiatives and policies. It has set ambitious renewable energy targets, including a goal of achieving 280 GW of solar capacity by 2030. Subsidies, tax incentives, and net metering policies further encourage rooftop solar adoption.
- 4. Cost competitiveness:** The cost of solar photovoltaic (PV) systems has been steadily declining in recent years, making them increasingly affordable. Additionally, rooftop solar systems can help reduce transmission and distribution losses, making them cost-competitive with conventional grid electricity in many regions.
- 5. Energy independence:** Rooftop solar allows individuals, businesses, and communities to generate their own electricity, reducing dependence on the grid and providing energy independence.
- 6. Job creation and economic growth:** The growth of the rooftop solar sector can lead to job creation across various stages, including manufacturing, installation, operation, and maintenance. The establishment of solar enterprises can stimulate economic growth and provide opportunities for entrepreneurship, especially in the renewable energy sector.

### **Solar energy – An ESG Initiative**

Solar energy has the potential to have significant impacts on the environmental, social, and governance (ESG) aspects in a developing country like India. Here's an overview of how solar energy can influence each of these areas:

#### **1. Environmental Impact:**

- *Reduced Greenhouse Gas Emissions:* Solar energy is a clean and renewable energy source that generates electricity without producing harmful greenhouse gas emissions. By adopting solar power, India can significantly reduce its carbon footprint and combat climate change.

- *Air Quality Improvement:* Traditional sources of energy, such as coal-fired power plants, contribute to air pollution. Solar energy can help improve air quality by reducing the reliance on fossil fuels and associated pollutants.

#### **2. Social Impact:**

- *Increased Energy Access:* India faces energy poverty, with a significant portion of its population lacking access to reliable electricity. Solar energy can help bridge this energy gap by providing decentralized and off-grid solutions, especially in rural areas. It empowers communities and improves their quality of life.



- *Job Creation*: The solar energy sector has the potential to generate employment opportunities. The installation, operation, and maintenance of solar power plants require a skilled workforce, leading to job creation across various levels, including manufacturing, construction, and operations.

- *Energy Security*: India currently depends heavily on imported fossil fuels, which can lead to economic vulnerability. Solar energy offers a more sustainable and domestically available energy source, contributing to long-term energy security.

### 3. Governance and Economic Impact:

- *Energy Independence*: Expanding solar power in India reduces dependence on imported fossil fuels, providing greater control over the energy supply and reducing vulnerability to international price fluctuations.

- *Policy and Regulatory Frameworks*: To promote solar energy adoption, governments need to establish supportive policies and regulations. This includes offering incentives, streamlining the permitting process, and creating a favorable investment environment. Effective governance and policy frameworks can accelerate the growth of the solar industry.

- *Economic Growth*: The solar energy sector can drive economic growth by attracting investments, fostering innovation, and creating a competitive market. It also promotes the development of domestic manufacturing capacities, leading to technological advancements and export opportunities.

### Green finance – Way to go Solar

Green finance refers to financial products and services that are specifically designed to support environmentally friendly and sustainable projects. It involves the allocation of capital toward activities that promote climate change mitigation, adaptation, and other environmental objectives.

The key difference between green finance and traditional finance lies in the purpose and focus of the investments. While traditional finance considers primarily financial returns, green finance also takes into account the environmental and social impacts of investments.

There are various sources of green finance available for solar energy projects. These include:

1. *Green bonds*: These are fixed-income securities specifically issued to finance environmentally friendly projects, including solar energy.
2. *Renewable energy funds*: These are investment vehicles that pool capital from multiple investors to finance renewable energy projects, such as solar energy.
3. *Climate-focused venture capital*: Venture capital firms invest in early-stage companies that are developing innovative solar technologies or business models.
4. *Sustainability-linked loans*: These are loans provided to companies based on their sustainability performance, encouraging them to achieve predetermined sustainability targets related to solar energy projects.

The benefits of green finance for solar energy and sustainability are numerous:

1. *Access to capital*: Green finance provides the necessary funding to expand solar energy infrastructure, making it more accessible and affordable.
2. *Scalability*: With increased financial support, the deployment of solar energy can be accelerated, leading to a larger share of renewable energy in the overall energy mix.



3. *Environmental benefits:* Solar energy reduces greenhouse gas emissions, air pollution, and dependence on fossil fuels, contributing to mitigating global warming and climate change.
4. *Energy security:* Solar energy diversifies the energy sources, reducing reliance on imported fossil fuels and enhancing energy security.

Overall, green finance can have a significant positive impact on sustainability by driving investments toward renewable energy sources like solar power. It helps to reduce carbon emissions, combat climate change, and promote a transition to a low-carbon economy. By channeling financial resources into environmentally friendly projects, green finance plays a vital role in addressing global challenges related to climate change and promoting a more sustainable future.

In the context of solar energy, green finance can play a crucial role in supporting the development and deployment of solar projects. It can provide funding for the installation of solar panels, development of solar farms, research and development of solar technologies, and related infrastructure.

### **Transitioning from Diesel Generators to Solar Energy in a Manufacturing Facility – A Case Study**

#### 1. Introduction:

In this case study, we explore the benefits of adopting solar energy over diesel generators in an Indian manufacturing facility. The facility, located in a region with abundant sunlight, was previously reliant on diesel generators to meet its electricity needs. However, due to rising fuel costs, environmental concerns, and a desire for energy independence, the facility management decided to explore the feasibility of transitioning to solar energy.

#### 2. Background:

The manufacturing facility operates round-the-clock, requiring a continuous and reliable power supply. It had been relying on diesel generators to meet its energy demands, resulting in substantial operating costs and emissions. The facility's location in a region with ample sunlight made solar energy a promising alternative.

#### 3. Assessment:

A detailed assessment was conducted to evaluate the feasibility of solar energy implementation. The following factors were considered:

- a) *Energy Consumption Analysis:* The facility's energy consumption patterns were analyzed to determine the required solar capacity and storage capacity for uninterrupted power supply.
- b) *Financial Analysis:* The costs associated with diesel generators, including fuel expenses and maintenance, were compared with the investment required for installing solar panels and battery storage systems.
- c) *Environmental Impact:* The carbon footprint and environmental impact of diesel generators were assessed, considering the emissions produced during operation. Solar energy, being a clean and renewable source, offered a significant reduction in greenhouse gas emissions.

#### 4. Implementation:

Based on the assessment, the facility management decided to proceed with the transition to solar energy. The following implementation steps were undertaken:

- a) *Solar Panel Installation:* Sufficient rooftop space was identified for installing solar panels.





High-efficiency solar panels were selected to maximize energy generation.

- b) *Battery Storage System:* To ensure uninterrupted power supply, a battery storage system was integrated into the solar energy setup. This allowed excess energy generated during the day to be stored and utilized during non-sunlight hours.
- c) *Grid Connectivity:* The facility remained connected to the power grid to serve as a backup during prolonged periods of low sunlight. It also facilitated the possibility of exporting surplus energy back to the grid and take benefit of net metering facility.

## 5. Results and Benefits:

The transition to solar energy yielded several benefits for the manufacturing facility:

- a) *Cost Savings:* The facility significantly reduced its electricity expenses as solar energy became the primary source of power generation, eliminating the need for costly diesel fuel.
- b) *Energy Independence:* With solar panels and battery storage, the facility reduced its reliance on the power grid and diesel generators, achieving a degree of energy independence.
- c) *Environmental Impact:* The facility's carbon footprint was drastically reduced, leading to a positive environmental impact by curbing greenhouse gas emissions.
- d) *Long-Term Savings:* Solar panels have a lifespan of 25-30 years, requiring minimal maintenance. This resulted in long-term savings compared to the recurring costs associated with diesel generators.
- e) *Government Incentives:* The facility also benefited from various government incentives and subsidies for adopting renewable energy sources, further enhancing the financial viability of the project.

## 6. Conclusion:

Transitioning from diesel generators to solar energy proved to be a beneficial move for the manufacturing facility in the Indian scenario. The switch resulted in cost savings, energy independence, environmental benefits, and long-term financial viability. This serves as an example of how solar energy can be a superior alternative to diesel generators in India, where abundant sunlight resources make it a viable and sustainable choice for power generation.

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# **GREEN FINANCE : HOW EMBRACEABLE AND EVERGREEN CAN IT BE!**

## **Abstract:**

*This write-up analyses the reasons behind the necessity of Green Finance and stressing the need for having such financial instruments which demonstrate how responsible we can be towards our environment and the society. The attempt is to explain the opportune timing for its implementation, the mechanisms through which it can be deployed, the challenges it faces, the notable progress achieved, and its wide-ranging impacts.*

## **The beginning:**

Let me first describe **Green Finance**. When the deployment of finance encompasses the environmentally sustainable and socially responsible investment, it is termed as Green Finance. It was in the 1970s, it dawned on the economists and radical pundits that the greater focus on industrialization and production for economic growth does come with a set of environmental issues given the use and re-use of the various resources.

So, there was a search for another approach or model and various stakeholders including government bodies began to talk about applying sustainability and sustainable development to production and finance.

However, nothing concretely materialised until 2015.

The year 2015 saw the arrival of the Sustainable Development Goals and its adoption, leading to a tipping point for the sustainability movement!

This gave a fillip to Green Finance, encompassing **environmentally sustainable** and socially responsible investments and started emerging as a powerful tool in mitigating climate change and fostering **sustainable development**.

## **Green Finance: an imperative:**

In today's world, **climate change** and **resource depletion** are literally felt by us and inaction or delayed action can have a significant impact on the way we and our future generations will live our lives.

As an astute finance professional, it is my firm belief that Green Finance is relevant to today's world in addressing some of these pressing environmental challenges and fostering sustainable development. It represents a paradigm shift in current financial systems by introducing **investment instruments** that **prioritize environmental sustainability** and **social responsibility**.



With the focus of the flow of capital towards green projects and initiatives, Green Finance promotes the transition to a low-carbon economy, **reduces greenhouse gas emissions**, and supports the development of renewable energy sources. Additionally, it drives innovation, creates **new job opportunities**, and enhances economic competitiveness in sectors such as clean technology and sustainable infrastructure.

Its imperativeness can be sensed by the fact that global investments in renewable energy reached **USD 303.5 billion in 2020<sup>1</sup>** as per the Global Trends in Renewable Energy Investment 2021 report by the United Nations Environment Programme (UNEP).

### Implementing Green Finance:

In my view, one should advocate an **early adoption** of Green Finance as and when an opportunity emerges given the current environmental conditions, as it provides a competitive advantage for businesses and economies. More importantly, it helps the opportune ones to identify and seize the emerging opportunities in green sectors, such as renewable energy, energy efficiency, **sustainable agriculture**, and clean transportation.

By embracing Green Finance early on, countries and companies can position themselves as **leaders** in sustainability and reap the economic benefits associated with green growth.

Governments, financial institutions, and businesses must recognize the urgency, **potential of green finance** and proactively integrate it into their policies, strategies, and investment decisions which address climate change and protecting the environment.

### How to Implement Green Finance:

**Green mortgages** incentivize homebuyers to invest in environmentally sustainable properties or enhance a property's environmental performance.

**Green loans** support projects like renewable energy installations, energy efficiency improvements, and the adoption of electric vehicles. **Green banks** mobilize public and private investments for renewable energy projects and other eco-friendly initiatives.

**Green bonds** attract substantial investments, **directing funds** specifically towards green projects such as renewable energy infrastructure and conservation efforts. **Green bonds** provide a powerful tool for raising capital, specifically for environmentally friendly projects. In 2020, the issuance of green bonds reached a record **USD 269.5 billion<sup>2</sup>**, according to Climate Bonds Initiative.

### Challenges Faced:

**The lack of standardized definitions** and frameworks for assessing environmental performance and impact poses a significant obstacle, **making it difficult** for investors to evaluate the **green credentials** of projects and businesses.

Additionally, **reliable data on environmental risks** and opportunities is limited, **hampering** accurate assessments of the financial viability of green investments.

**Greenwashing** is another challenge, where investments are marketed as environmentally friendly without delivering meaningful environmental benefits.

While green finance offers **long-term benefits** in terms of environmental sustainability and resilience,

<sup>1</sup> REN21. 2021. *Renewables 2021 Global Status Report* (Paris: REN21 Secretariat)

<sup>2</sup> "Record \$269.5bn green issuance for 2020: Late surge sees pandemic year pip 2019 total by \$3bn," 2021



the **initial costs** of implementing environmentally friendly projects can be **higher** than conventional alternatives.

Inconsistent or inadequate regulatory frameworks and policies can **hinder the growth** of green finance. Governments play a crucial role in creating an enabling environment through supportive policies, incentives, and regulations that encourage sustainable investments and **ensure accountability**.

### **Progress Made:**

Despite the challenges, commendable progress has been made in the field of green finance. Governments and international organizations have introduced **policies (like Sustainable Finance Framework by the RBI)** and frame works to encourage green investments. Financial institutions increasingly integrate **environmental, social, and governance (ESG)** factors into their investment decisions. The issuance of **green bonds** has witnessed a surge, providing substantial funding for renewable energy and sustainability projects. **Sustainable finance** initiatives gain momentum globally, with growing investor and business commitment and awareness.

### **Impact of Green Finance:**

The impact of green finance are multifaceted and far-reaching. Environmentally, it facilitates the transition to a **low-carbon and sustainable economy**, reducing greenhouse gas emissions and promoting renewable energy generation.

Socially, green finance contributes to **job creation**, improved access to clean energy, and enhanced resilience to climate change impacts. Economically, it drives **innovation** and creates new investment opportunities in sustainable industries, **fostering economic growth** and enhancing competitiveness.

The global green finance market has experienced significant growth in recent years. According to the Global Sustainable Investment Alliance, sustainable investments reached **USD 35.3 trillion in 2020<sup>3</sup>**, representing a **15% increase from 2018**.

### **Difficulties of raising green finance:**

1. **Limited Track Record:** Green startups often struggle to demonstrate a **track record** of financial performance and profitability, which can make it challenging to attract VC investors who prioritize proven **financial success**.
2. **Uncertain Market Demand:** The transition to sustainable technologies is still evolving, and green startups may face **uncertainties** regarding market demand and customer adoption. This uncertainty can deter investors from **committing significant funds** to unproven technologies or markets.
3. **High Capital Requirements:** Green startups often require **substantial capital** investments for **research and development**, manufacturing facilities, and regulatory approvals. The **high capital requirements** can be a deterrent for investors who may be cautious about committing large amounts of capital to **early-stage ventures**.
4. **Longer Timeframes for Returns:** Green investments typically involve longer timeframes for returns on investment compared to traditional investments. Developing and commercializing sustainable technologies or solutions can be a time-consuming process, which may not align with the short-term investment expectations of some investors.
5. **Regulatory and Policy Risks:** Green startups are exposed to **regulatory** and policy risks,

<sup>3</sup> *Global Sustainable Investment Review, Pg 9*



as government policies related to subsidies, incentives, and regulations on clean technologies can change over time. These policy uncertainties can create **challenges** for VC investors in assessing the long-term viability and profitability of green startups.

### Constraints:

1. **Cost:** One persistent issue in the Indian economy has been the significant cost associated with borrowing. This, combined with the relatively short repayment periods for loans, diminishes the **attractiveness** of investing in green projects for potential investors.
2. **Green Bonds:** Another persistent issue is the disclosure requirement for issuing green bonds in India. The SEBI provides limited guidance on disclosure requirements in the offer document. Considering the **long-term viability** of these projects and their substantial funding needs from multiple stakeholders, a **comprehensive** and detailed report, rather than a one-dimensional summary, is essential.
3. **Lack of Standardized Metrics and Reporting:** The absence of **standardized metrics** and reporting frameworks for evaluating the environmental and social impacts of green investments can pose **constraints**. It becomes challenging for individuals to compare and assess the sustainability performance of different green startups.
4. **Market Volatility and Economic Uncertainty:** Green finance, like any other sector, is susceptible to market volatility and economic uncertainty. External factors, such as **global economic conditions** or policy changes, can impact the availability of green finance from investors. The transition to **sustainable technologies** is still evolving, and green startups may face **uncertainties** regarding market demand and customer adoption.

### Some Facts and Figures:

1. **Global Investment in Renewable Energy:** According to the United Nations Environment Programme (UNEP), global investment in renewable energy reached a record high of **\$273 billion in 2018**.<sup>4</sup>
2. **Green Bonds:** Green bonds are financial instruments specifically designed to fund environmentally friendly projects. The global green bond market has experienced rapid growth, with issuance reaching **\$269.5 billion in 2020**, according to Climate Bonds Initiative.<sup>5</sup>
3. **Sustainable Investing:** Sustainable investing, also known as socially responsible investing, focuses on investing in companies that demonstrate strong environmental, social, and governance (ESG) practices. The Global Sustainable Investment Alliance reported that sustainable investing assets reached **\$35.3 trillion globally in 2020**, a **15%** increase compared to 2018.<sup>6</sup>

<sup>4</sup> *Global Trends in Renewable Energy Investment 2019*

<sup>5</sup> *Record \$269.5bn green issuance for 2020: Late surge sees pandemic year pip 2019 total by \$3bn*

<sup>6</sup> *Global Sustainable Investment Review, Pg 9*



4. **Green Banks:** Green banks are financial institutions that focus on financing clean energy and sustainable infrastructure projects. As of 2021, there are over **27 green banks** worldwide, with a combined investment of **\$50 billion**.<sup>7</sup>
5. **Carbon Pricing Initiatives:** Carbon pricing aims to put a monetary value on carbon emissions to incentivize businesses to reduce their carbon footprint. As of 2021, there are over **60 carbon pricing** initiatives implemented or scheduled for implementation worldwide, covering approximately **22% of global greenhouse gas emissions**.<sup>8</sup>
6. **Green Startups and Innovation:** The growth of green finance has led to increased support for green startups and innovation. According to Bloomberg NEF, venture capital and private equity investments in clean energy and related sectors reached a record high of **\$17 billion in 2020**.<sup>9</sup>

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7 “Growing Green Bank Movement Playing Key Role in Financing Clean Energy, Climate Solutions and Resilience,” 2021

8 Carbon Pricing Dashboard | Up-to-date overview of carbon pricing initiatives

9 BloombergNEF. 2021, March 15. Climate-Tech VC Investing Tops \$17bn in 2020 | BloombergNEF



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## **DRIVING INDIA'S EFFICIENT POWER ENERGY CHANGE TACKLING SUSTAINABLE POWER AND MANAGEABLE PRACTICES FOR NET-ZERO DISCHARGES**

### **Abstract**

*India is driving a shift towards maintainable and clean energy sources to handle natural difficulties and achieve net-zero discharges. The study extensively examines India's ongoing energy circumstance, progressions in reasonable power age advances, government drives and strategies, challenges confronted, and likely arrangements. The significance of setting aggressive focuses for sustainable power is driving progress towards cleaner sources and diminishing dependence on petroleum derivatives; The meaning of giving monetary motivations, such as endowments and tax cuts, is to support the reception of maintainable energy innovations. India's obligation to tend to environmental change and its job in worldwide endeavors to battle ecological difficulties connected with energy creation; Affirmation of difficulties regarding framework improvement, strategy definition, financing, and innovation reception that should be survived.*

*The overall study tried to focus to India's excursion towards practical and clean energy sources, underlining aggressive targets, monetary motivators, and the country's obligation to tend to environmental change.*

### **I. Background -**

The urgent need to address environmental change and diminish ozone-depleting substance discharges has moved nations overall to progress towards a "Greener & More maintainable energy future"; be that as it may, the global-local area, including states and associations all over the planet, has been progressively inspired to address this worldwide test by changing to cleaner and more practical wellsprings of energy <sup>1</sup>. This study centers around India's aggressive excursion towards driving an environmentally-friendly power energy change and accomplishing net-zero discharges <sup>1</sup>.

Through the tackling of environmentally-friendly power sources and the execution of feasible practices, India intends to moderate the natural effects related to conventional energy sources and make ready for an additional reasonable and versatile future. India, one of the world's most crowded and quickly emerging nations, faces critical natural difficulties because of its heavy dependence on consistent energy sources such as petroleum products. The consumption of these non-renewable energy sources, especially coal, has been a significant supporter of ozone-harming substance discharges, intensifying the issue of environmental change <sup>2</sup>.

Perceiving the requirement for a change in stance, India has embraced an extensive procedure to move towards cleaner and sustainable power options. Like this, India is making critical strides toward accomplishing a low-carbon economy and moderating the unfavorable impacts of environmental change.

India is the world's third-biggest producer of ozone-depleting substances, and its energy area significantly supports this contamination. Therefore, India should change to a perfect energy future to meet its environmental





points. The evaluation features the requirement for expanded interest in environmentally-friendly power, further developed energy proficiency, and the retort of feasible practices across all areas of the economy.

The study-study-report likewise recognizes various key strategy proposals that could be useful to India to rapidly up its environmentally-friendly power energy change. These suggestions include <sup>2&3</sup>:

Setting aggressive focuses for sustainable power distribution

Putting resources into innovative work of new clean energy advances

Giving monetary motivators to clean energy projects

Eliminating boundaries to the reception of maintainable practices

Examine the ongoing energy situation in India, featuring the dependence on petroleum products, the difficulties presented by environmental change, and the ecological effect of conventional energy sources.

Notice the rising energy interest and the need to offset it with maintainable arrangements.

Feature India's obligation to tend to environmental change and its worldwide commitments under peaceful accords.

The study report presumes India can be a worldwide forerunner in environmentally-friendly power energy progress. In any case, the nation should make a bad move to carry out the strategy suggestions illustrated in the study report to accomplish this objective. However, the import of this study report is that it gives a direction to India's efficient power energy change. The study report's proposals depend on broad exploration and investigation, and they offer a reasonable and reachable way to a cleaner, more manageable future for India <sup>3</sup>.

Although, the present study report is likewise huge because it comes at a crucial time for India. The nation faces various difficulties, including environmental change, financial development, and energy security. Hence, the study report's proposals offer a way for India to address these difficulties and assembly a more viable future for its residents.

Here is a portion of the vital discoveries of the study report <sup>4</sup>:

India can possibly produce 100 percent of its power from environmentally-friendly power by 2050.

The progress to a spotless energy future could create many new positions in India.

The environmentally-friendly power energy change could assist India in lessening its reliance on imported oil and gas.

The efficient power energy progress could assist India with further developing its air quality and lessen its openness to environmental change. Accentuate the significance of changing to environmentally-friendly power and embracing economic practices for accomplishing net-zero outflows.

Feature the potential advantages of the efficient power energy change, like decreased ozone-harming substance emanations, further developed air quality, energy security, and financial development.

Examine the meaning of India's job in the worldwide endeavors to battle environmental change, considering its huge populace and developing economy.

Notice the possibility of setting new positions, opening doors, and animating development and mechanical progressions in the efficient power energy area <sup>5&6</sup>.

The study report explores the significant feature of India's efficient power energy progress. The change could decidedly affect India's economy, climate, and society and having. In particular, the study's goals are to:

- Evaluate the present status of India's efficient power energy change
- Distinguish the vital difficulties and amazing open doors confronting the change
- Foster a bunch of strategy proposals to speed up the progress
- Give a guide to India to accomplish a spotless energy future. Therefore, the original copy aims



to advocate for and give systems to drive India's environmentally-friendly power energy change, tackling environmentally-friendly power and manageable practices to accomplish net-zero discharges.

## II. Current Energy and Ecological Difficulties in India <sup>6</sup> -

In India, a few current energy and ecological moves should be tended to. These difficulties include:

1. **Rising energy interest:** India's populace development, urbanization, and industrialization have prompted a critical expansion in energy interest. Satisfying this need represents a test as it requires increasing energy creation and dissemination while guaranteeing maintainability and limiting ecological effects.
2. **Fossil fuel reliance:** India intensely depends on petroleum derivatives, especially coal, for energy needs. This reliance not just adds to air contamination and related medical problems but also to worldwide ozone-depleting substance outflows and environmental change. Decreasing petroleum derivative reliance is urgent for accomplishing economic and clean energy frameworks.
3. **Climate change influences:** India is helpless against the effects of environmental change, including expanded recurrence and power of outrageous climate occasions, rising ocean levels, and changes in precipitation designs. These effects greatly impact agribusiness, water assets, and general environmental balance.
4. **Environmental debasement:** *Rapid industrialization and metropolitan* advancement have brought about ecological corruption in different structures, like air and water contamination, deforestation, loss of biodiversity, and ill-advised squandering of the board. Tending to these ecological difficulties is fundamental for safeguarding biological systems and guaranteeing a maintainable future. India should focus on environmentally-friendly power sources to defeat these obstructions, further develop energy proficiency, advance economic practices, and carry out green innovations. Strategy mediations, Research and development ventures, and globally coordinated efforts can all assume a basic part in driving India's progress to a more economical and versatile energy and natural scene.

## IV. Techniques and Approaches Driving India's Efficient Power Energy Change <sup>7</sup> : -To drive India's efficient power energy progress, the composition might zero in on methodologies and strategies connected with solar-based energy. These could include:

**Advancing solar light-based power age:** The composition might advocate for the boundless reception of solar-oriented energy as a vital part of India's energy blend. This could include boosting solar-based power projects, giving sponsorships or tax cuts to solar-powered establishments, and empowering interest in solar-powered frameworks.

**Increasing solar-oriented limit:** The composition might propose systems to quickly expand India's solar-based limit. This could include setting aggressive focuses for the solar-powered energy age and carrying out approaches to work with the arrangement of utility-scale solar-based projects, housetop solar-oriented establishments, and solar-powered parks.

**Empowering innovative work:** The composition could underscore the significance of putting resources into innovative work to drive development in solar-based advancements. This could include supporting examination organizations, subsidizing solar-oriented research ventures, and cultivating joint efforts between the scholarly world, industry, and government offices to improve solar-based energy proficiency and cost adequacy.

**Working with admittance to support:** The original copy might feature the need to make funding choices more available and reasonable for Solar powered energy projects. This could include making monetary components like low-interest advances, green securities, and investment reserves explicitly customized for the solar-oriented area.

**Reinforcing strategy and administrative structures:** The original copy could advocate for improving a strong approach and administrative systems that help the development of solar-powered energy. This could



incorporate smoothing out endorsement processes, guaranteeing framework availability for solar-oriented projects, executing net metering strategies, and laying out positive duty structures for solar-based power makers.

**Advancing solar-oriented energy mindfulness and limit fabricating:** The original copy underscores the significance of bringing issues to light about solar-powered energy benefits and upgrading specialized abilities through limit building programs. It intends to direct India's environmentally friendly power energy progress and open the maximum capacity of solar-based power as a perfect and maintainable energy source.

**V. Effect and Progress of India's Environmentally-friendly Power Energy Change<sup>8</sup>** India's efficient power energy change has had a huge effect and has gained tremendous headway as of late. Here are a few vital parts of the effect and progress of India's efficient power energy change:

**Sustainable power limit:** India has seen an exceptional expansion in environmentally-friendly power limits, especially in solar-based and wind power. The nation has become one of the world's biggest sustainable power makers, with a critical development in introduced limit. This extension has expanded India's energy blend and decreased its reliance on petroleum products.

**Solar-based power transformation:** India has encountered a solar-oriented power upheaval, with significant development in solar-oriented establishments. The nation has set aggressive targets, for example, the 100 GW solar-powered limit objective by 2022. The falling expenses of solar-oriented innovation, steady approaches, and motivations have worked with the far and wide reception of solar-based power across different areas.

**Wind energy extension:** India is likewise gaining ground in wind energy advancement. It has a significant breeze power limit, and endeavors are being made to build the proficiency and efficiency of wind turbines. The public authority has executed strategies to draw in ventures and advance breeze energy projects.

**Work creation and financial advantages:** India's efficient power energy progress has brought about critical work creation and monetary advantages. The environmentally-friendly power area has produced business potential open doors, especially in solar-based and wind power projects. The area's development has drawn in homegrown and unfamiliar speculations, adding to the monetary turn of events.

**Outflows decrease and natural effect:** India's shift to proficient and maintainable energy sources has decreased ozone-harming substance emanations and moderated ecological effects. It has further developed air quality and diminished the biological impression of petroleum product usage.

**Provincial zap and energy access:** The energy transition improved affordability, accessibility, and socio-economic development in India.

**Worldwide administration and coordinated efforts:** India leads all around the world in environmentally friendly power and effectively partakes in global joint efforts for the supportable turn of events. Challenges remain; however, progress is promising.

**VI. Difficulties and Open Doors<sup>9</sup>** - India's energy transition faces foundation, strategy, subsidizing, and innovation difficulties. Notwithstanding, it extends employment opportunity creation, economic development, energy security, and feasible improvement potential. It positions India as a worldwide forerunner in sustainable innovation, advancing rural jolt and strengthening local areas.

**VII. Contextual analyses and Examples of overcoming adversity<sup>10</sup>** - Effective contextual analyses in environmentally friendly power execution have been seen in Gujarat, Tamil Nadu, and Uttar Pradesh. Gujarat's Charanka Solar powered Park pulled in ventures and added to its environmentally friendly power energy change. Tamil Nadu succeeded in wind energy advancement, and Uttar Pradesh carried out off-network solar light-based answers for rustic energy access. These models accentuate the significance of strong arrangements, smoothed-out endorsements, robust framework, and proactive government drives. By imitating these techniques, India can speed up its reasonable energy change and drive financial development while further developing energy access and changing networks<sup>11</sup>.

**VIII. Future Viewpoint and Suggestions:** India's environmentally-friendly power energy progress



holds colossal potential for the practical turn of events. To drive progress, it is critical to keep supporting environmentally-friendly power strategies, put resources into innovative work, reinforce lattice framework, and cultivate public-private organizations to guarantee a perfect and strong energy future.

**IX. Conclusion:** India's environmentally-friendly power energy progress presents a basic pathway toward a maintainable and low-carbon future. With the rising spotlight on environmentally-friendly power sources, India has taken critical steps in tackling solar-oriented, wind, and other clean energy advancements. Notwithstanding, challenges stay regarding foundation, funding, and strategy structures. By tending to these difficulties, benefiting from open doors, and executing viable methodologies, India can speed up its efficient power energy progress, moderate environmental change, further develop energy access and encourage economic development while guaranteeing a cleaner and more reasonable climate for people.

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## **ESG, COLLABORATION, AND BUSINESS RESPONSIBILITIES – THE CEO’S DILEMMA AND CMA’S ROLE**

In the Modern era, ESG is emerging as an approach through which a company works towards achieving its Environmental Goals, Social Goals and Corporate Goals.

In Present days, Profit Maximization and increase in sales are not the only objectives of any company. It has to take care of the environment also in which it is operating and at the same time it has to pay attention towards the well-being of its various stakeholders.

In today’s world investor prefers to invest in those companies which are paying more attention towards the environment and well-being of society by performing business activity with compliance of ethical norms and standards.

The main areas which are being considered in the ESG goals can be summarized below:

**Environmental Goals:** It involves attention towards conservation and utilization of natural resources, Proper Waste Management, and adequate system of disposal of Industrial Waste, following specific measures to avoid Water, Air and Noise Pollution, Bio-Diversity, Use of Alternative sources of Energy, Treatment of animals, etc.

The use of Electric vehicles is being promoted by the government to prevent air pollution and Promotion of the use of Solar Plants are just a few examples of this.

**Social Goals:** These involve measures taken by the company towards the Health and Safety of the employees, and their human rights, developing the skills of its workforce (in other words Human Capital Development) through regular training at the training centers of the companies (which has been established for this purpose only), promoting Gender Diversity at the workplace and improving Customer Satisfaction. It involves paying attention to the various channels of its supply chain. Whether its suppliers are procuring the materials (which are being used by the company as Raw Materials) through legitimate sources or not.

**Governance:** It involves Corporate Governance of the company and covers areas like establishing strong Internal Control Measures, Audit and Risk committees, Salary Structure, Adequate qualification of the board members heading different departments, compliance with business ethics and norms, etc.

**Collaboration and Business Responsibility:**

Business Units are currently playing a great role in achieving ESG goals. With the introduction of advanced technologies and alternate sources of energy in their business process, they can reduce Air





and Water Pollution and help in Low Carbon emissions. Further, planting trees helps the environment and society. Companies are doing so by incorporating the same in their CSR (Corporate Social Responsibility). Organizations are engaged in the beautification work of parks, installing equipment for physical exercise purposes of the residents of that area so that they can lead healthy lives. They are also engaged in cleaning work of rivers and ponds of their location so that pure water can be made available to residents of that location to drink. Initiatives are being taken to make aware people to take healthy food always.

### **The CEO's Dilemma:**

CEO (Chief Executive Officer) is a top-ranking job in any company and involves the formulation of process and policies which makes the organization more profitable, sustainable, and working towards meeting its goal.

The CEO of the company has to align the business operations of his company in a manner that can take care of ESG goals also. For this, he should spend his time deciding the best Strategic Choice out of the options available to him at any given point in time.

While arriving at any decision, a CEO of the organization has to face the following challenges:

- **Which strategy should the organization follow- Product Differentiation or Cost Leadership** which can result in better utilization of the available resources? A company may provide a better product to its customers by following a product differentiation strategy but in order to go for the same, it may have to exploit the available natural resources in much more quantity which may result in scarcity of these resources after a few years which may have negative impact on the environment.
- **Whether he should focus on Strategic Positioning or Operational Effectiveness** of the company. When the organization opts for Strategic Positioning, it can differentiate itself from competitors by creating better value for the customers which in turn results in a higher profitable position for the company. By doing this, it may have a competitive advantage also. But here the same question arises, whether the company is using natural resources at optimal levels and providing healthy working conditions for its employees.
- **Whether emphasis should be given to Market Penetration or Market Development.** By going for market development, a company can contribute towards economic growth in other areas also which are not yet developed as expected. It will result in the development of infrastructure and create more job opportunities for the people of that area but by doing so it has to take appropriate steps towards low air and water pollution, an appropriate system of waste disposal in that area so that there will not be any threat to the natural environment which exists at this point of time.
- **Stakeholder Analysis- to which stakeholder he should pay more attention.** For any company, there are several stakeholders like shareholders, government, regulators, employees, vendors, investors, and society at large. There may be questions like what weightage should be given to each stakeholder at any point of time to run the organization smoothly. Companies, which prioritize the ESG goals in their business operations, enjoy better market reputation and brand value in the market as compared to others. Investors also prefer to invest in such companies which are doing well in Environment, Society, and Corporate Governance. It results in higher customer loyalty, low or nil employee turnover, increased confidence of investors, and increased profit due to the low cost of capital.
- **One dilemma is maintaining the balance among critical factors like Reputation,**



**Performance, and Corporate Governance** of the organization because these are essential for any organization to be successful in the long run, and at the same time these are dependent on each other. These three factors jointly affect the performance of the company and achieving its ESG goals.

### **Role of CMAs:**

CMAs can play the role of Catalyst and help companies in achieving their Environmental, Social, and Governance goals. They can help the organization in taking Strategic Decisions which can result in improved financial performance, Reputation, and Business Growth of the organization.

They are expected to perform the following activities to help the Board of Directors of their company for achieving the ESG Goals:

- **They can conduct the SWOT Analysis of their companies.** By matching the organizational strengths with the available external opportunities, they can make the organization more profitable which will, in turn, increase the financial strength and reputation of the organization in which they are working.
- **CMAs can conduct the Value Chain Analysis** of each of the Primary and Secondary Activities of Supply Chain Activities of the organization in order to make each activity more meaningful and productive and reduce the unnecessary activities which are not have any significant role in increasing profitability. In this way, the wastage of the resources can be reduced to the minimum which will help the organization in achieving the ESG goals. In other words, we can say that those business operations can be minimized that affects the bio-diversity adversely. At the same time, it increases the productivity of all channels which are part of the supply chain activity.
- Having good knowledge of Various Methods and Techniques of Costing Work, **they can advise the management on Cost Leadership and Product Differentiation.** It will result in process improvement and cost minimization and rationalization of manpower so that the productivity of the employees can be increased. It will also result in lowering the cost of production and increase profitability. They can also suggest the management in utilizing alternative sources of energy like Solar systems and Wind Mill which will help in reducing the cost of production and best utilization of the available natural resources.
- They can also help the management in **analyzing the competitors.** They can watch the major steps being taken by the competitors in terms of process improvement, customer satisfaction, and technological advancement in their business process which is helping them in achieving the ESG goals. On the basis of this, they can advise the management of their company to follow the same steps which have been taken by the competitors.
- CMAs can also advise the management in the areas of **Mergers and Acquisitions** of those companies which are taking appropriate actions for the betterment of the environment.
- CMAs can better advise the management regarding the **utilization of the resources on the parameters of 3Es which are Economy, Efficiency, and Effectiveness.** They can also advise the management on Risk Identification, Risk Management, and Risk Control if the appropriate steps toward achieving the Environmental Goals, Social Goals, and Governance have not been taken.
- CMAs can help the management in preparing the ESG reporting framework to disclose the information on sustainability and ethical performance of the business operations of their company. ESG analysis is not only about what the company is doing today but it is also a tool



to know the future trends.

- CMAs are having good Analytical Skills and on the basis of this, they can advise the management regarding the benefits of the Economy of Scale and Economy of Scope in the production process with the optimal utilization of natural resources.

From the above points, it can be said that identification and implementation of the factors affecting the ESG goals is very critical and it is more of a balancing work. It requires thorough knowledge of Finance, Accounting, Risk Management, and Strategic Management areas which are, in turn, enhancing the role of CMAs. CMAs have to be well-equipped in these areas so that they can advise the Board of Directors of the companies whenever required. At the same time, they can play the role of executor of the activities which have been decided by the management in order to achieve the ESG goals.

Therefore, it can be said that the role and areas of working of CMAs are enhancing and getting enriched day by day with the introduction of new concepts which is good for our profession and the betterment of the society in which we are living.

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## **ESG IN COAL INDUSTRY**

### **Introduction:**

India has traditionally been an environmental conscious country which values conservation and recycling. The per capita consumption of electricity has been very low compared to its Western counterparts. But as Indian companies progress into a multinational entities, becoming compliant on ESG regulations can make them an attractive investment proposal world over. ESG report helps in ascertaining how a company conducts its business in a socially responsible, sustainable and environmentally conscious manner.

Coal India Ltd (CIL) is the single largest coal producer in the world and accounts for close to 78% of the coal production in India. Partha S Bhattacharya, the former CMD of CIL once famously remarked that coal in India is Coal India. This article attempts to provide a perspective on the Coal Industry's ESG initiatives, CIL in particular.

### **The Statutory “Nudge”**

It was the stress on CSR first, then came the Sustainable Development and now the ESG reporting requirements. SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015 (LODR) through a notification dated 5 May 2021, has notified that the top 1,000 listed companies, in terms of market capitalization, must prepare a Business Responsibility Report (BRSR) describing the initiatives taken by the company in terms of Environmental, Social and Governance (ESG) perspective mandatorily from FY 2022-23 and voluntarily for FY 2021-22.

### **ESG in Coal Industry**

Environment consciousness has always been a part of Coal Industry. The operations of the coal industry are from the hinterlands of the country and the company has to constantly engage with the marginalised and diverse sections of the society in a sensitive and responsible manner. CIL takes its environmental reporting seriously. The Annual Reports of CIL and its subsidiaries have greenery of the afforestation efforts splashed in its pages reiterating its commitment to its environmental goals. The development of 27 eco-parks by CIL is an indicator of this effort. We often see that CIL has far exceeded its targets for compensatory afforestation. CIL has also made productive use of the mine water discharges by diverting them for industrial, agricultural and even domestic uses.

### **Sustainable Development Policy of CIL**

CIL has a dedicated “Sustainable Development Policy” that highlights the ESG commitments with a specific focus on protecting and safeguarding the environment and conserving biodiversity. The 17 United Nations Sustainable Development Goals (SDGs) have also been incorporated suitably into their Risk Management System. Through sustainability interventions, CIL has provided local solutions, aided building resilient societies and taken steps to improve biodiversity and ecosystem. By introducing technological innovations extensively, CIL has been building sustainability in its operations.



## CIL ESG Commitments

As per the BRSR of CIL, the ESG Commitments of CIL are listed below:

1. Low Carbon Coal production – through construction of First Mile Connectivity (FMC) projects and adopting clean coal technologies.
2. Promoting Bio-diversity – including tree plantation, development of eco-parks etc.
3. Investing in Clean Technology – including setting up 3GW renewable energy.
4. Overburden Utilization – by extracting sand, promoting innovative farming and afforestation.
5. Efficient Mine Water Utilization.

Through ESG, CIL has been focusing on building platforms for reporting emissions data internally and externally which would be used for tracking and reducing own emissions and also for reducing emissions in supply chain. The focus is also on integrating climate actions into business strategy.

## Relevance of ESG reporting in Coal Industry

Apart from early investments by GoI and limited debt exposure from World Bank during consolidation phase, CIL has never really resorted to external borrowings to fund its growth. It has always been conservative in its approach and relied on its internal accruals to fund capital expenditure and expansion plans. This lack of leverage would make the coal industry and especially CIL resistant to corporate funding criteria imposed by ESG regulations on evaluation of borrowers and credit analysis. However, being a responsible corporate citizen and a listed company, CIL has complied with and prepared its BRSR for its investors, banks and other stakeholders.

## Different standards for different industries

A cursory look at the norms and KPIs make it evident that there is no one size fits all approach to the evaluation of ESG across industries. We need to have different yardsticks for different industries. Having said that, it is imperative that all these are aligned to the country's commitment to Intended Nationally Determined Contributions (INDC) and with the Prime Minister's promise at COP 26 in Glasgow to achieve Net-Zero GHG-emission by 2070 for India.

## Tall ambitions

Considering the quantity of electricity consumption from fossil fuel and renewable energy sources, the targets for net-zero are calculated. CIL, in its first voluntary BRSR for FY 2021-22, has clearly put forth its intentions to become a net-zero company by FY 2027. To achieve this daunting task, it has set itself a target of pursuing solar projects of 3GW capacity and minimizing the carbon footprint in environment friendly transportation of coal through FMC projects.

## ESG score of CIL

In one of the Corporate ESG Risk Ratings published by Sustainalytics.com, CIL has a score of 45.5 which translates to Severe Risk. However, when compared to its peer Chinese coal producing companies, it is placed far better with a better Industrial Rank in the Oil & Gas Producers list. When viewed in the context that CIL is geologically endowed with inferior grade coal and challenging to extract drift coal reserves, this performance is even more commendable.

## The Challenges

De-carbonization measures include Energy Efficient Programs, Use of Renewable energy, Waste Management (including waste water management), Carbon Credits, Green Logistics, Carbon Capture Programs – Its utilization and storage, Waste heat recovery, Staff Awareness programs among others. De-carbonization of mining operations is a highly challenging task. Right from the days of its formation, CIL has constantly looked to invest in technology to minimize manual production





methods and scientifically develop coal mines. In spite of the efforts, the de-carbonization of its operations in an economically sustainable manner while catering to the growing energy requirements of the country is an uphill task to achieve.

### **The Scope III Disclosures conundrum**

The Scope III Disclosures of the BRSR covers indirect emissions that occur in the value chain of the reporting company. This is a very challenging area for a company which interacts with a diverse lot of stakeholders. On one hand there are the MSMEs with whom CIL did business in excess of ₹5000 Crores in FY 2022-23 and on the other hand there are the contractors engaged in Coal transportation and Overburden removal activities who play a very crucial role in coal production and evacuation processes.

To rethink and transform business models across such a diverse stakeholders, innovate and engage with customers and other ecosystem partners to drive sustainability KPIs across the value chain may not be an easy task and it would not be out of place to assume that at the end, CIL will be assigned with the additional burden of compensating for their stakeholder's failures also.

### **Technological challenges to Solar Power:**

As pointed out earlier, the CIL's push for reducing carbon emissions largely hinges on setting up renewable energy projects and solar power projects in particular. The much spoken about solar energy technology in India is still in its initial years and the country has some questions to answer before it can go big on the solar dream. What is the performance of solar energy resource operating at peak load? Are there energy losses? Is there any long duration energy storage infrastructure in place? Are there enough Made in India capacity and technological know-how on the Solar PV manufacturing front? It is probably to answer these questions that CIL has created two subsidiaries – CIL Navikarniya Urja Limited and CIL Solar PV Limited.

### **Role of CMAs**

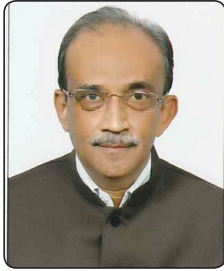
From the above, it is abundantly clear that CIL has over the years demonstrated its commitment to be environmentally friendly irrespective of the regulatory requirements. The major decisions made, such as the FMC projects have been sound economic decisions providing better cash flows compared to conventional coal evacuation methods. CMAs have a big role to play here. CMAs can constructively engage with technical departments in the coal industry and work out financial models of technological interventions that can minimize environmental impact of coal production/evacuation operations that are win-win from both investment and environmental point of view.

### **Conclusion**

While CIL and the coal industry continues its focus on low carbon energy solutions, improving and enhancing energy efficiency and lifespan of assets thereby reducing emissions and cost, the energy transition is not going to be a smooth road ahead due to the technological challenges and their successful on the ground implementation. However, CIL has not shied away from its environmental goals. There has been a conscious effort on part of the company to ensure that the efforts of their environmental conservation and sustainable development activities remain a very important part of their operations and is not just reduced to Green-washing exercise.

While CIL may succeed in setting up 3 GW solar power projects in a few years, there may be a scenario that the targets would have shifted by then. Moreover with the ESG still in a nascent stage in India, the GoI and SEBI needs to take an industrial specific approach and set targets that are aligned with the national goals.

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## ENERGY TRANSFORMATION IN INDIA FOR SUSTAINABILITY

### Abstract:

*Global warming and climate change is the buzz word talked in every summit, conferences, seminars, meetings as well as all professional talk. The adverse impact of global warming is visible in last decade and it is accelerating at very high rate. The time have come to convert all talk and knowledge in to an action to reduce emission of greenhouse gases. In this article, the present issue of environmental sustainability is discussed along with various practical stages of energy transformation with focus on action taken by Government of India and people of India. **I am sure, the article will motivate each individual to act and support environmental sustainability.***

### Preface:

Scientist have identified seven greenhouse gases with very high degree of global warming potentials. They are Carbon dioxide, Methane, HFC, PFC, N<sub>2</sub>O, SF<sub>6</sub>, NF<sub>3</sub>. Due to rapid industrialisation and to meet human greed, concentration of these gases increases in atmosphere at very high rate. These gases absorb the reflected sun heat in earth atmosphere and do not allow it to escape back. This lead to increase in temperature of the earth. This increase in temperature is called global warming which lead to melting of Glaciers, heavy rainfall and flood on one location of the world where as severe draught in other location of the world, Wild Forest fire at one location and severe cyclone at other location. Agriculture season have shown huge variation due to change in precipitation pattern. Top priority actions are required to avoid irreversible change of climate.

### Governance to reduce Greenhouse Gas emission:

In order to mitigate impact of greenhouse gas on climate change, it was agreed in one of Conference of Parties in Kyoto in 1997 to reduce an emission of Greenhouse gases, which is called Kyoto Protocol. It came in force in 2005. India have developed National action plan for Climate change in 2008 consisting of 8 nos of missions, which include mitigating measures, adaptive measures as well as financial instruments to implements the action decided.

To review and control the emission of GHG, Conference of parties meet every year as well as every 5 years, they review the progress of action taken by various countries. 21st COP met in 2015 at Parris set an objective to limit increase in global temp by less than 2 deg C as compared to preindustrial era as further increase in temp can be irreversible. They voluntarily agreed that they will pursue effort to limit Global temp increase below 1.5 Deg C as compared to pre-industrial era. India is the third

**“We are running the most dangerous experiment in history right now, which is to see how much carbon dioxide the atmosphere can handle before there is an environmental catastrophe.” - Elon Musk**



largest Greenhouse gas emitter but is the only country who met the commitment made in COP 21 well in advance and made further commitment in COP 26 at Glasgow in 2021 as follows.

1. India will reach non fossil energy capacity of 500 GW by 2030
2. India will meet 50% of energy requirement from renewable energy by 2030
3. India will reduce the total projected carbon emission by additional 1 billion tonnes from now onwards till 2030
4. By 2030, India will reduce carbon intensity of its economy by less than 45%
5. India will achieve target of net zero by 2070.

### **Greenhouse gases emission reduction – Strategy of India:**

Most of the greenhouse gases are produced due to industrial activities and to reduce the impact, many of the industries are voluntarily committing for reducing GHG and showcase them as a green company. Out of these gases, Carbon dioxide is the greenhouse gas which is emitted by every human and every human activity apart from industrial activities. Carbon Dioxide contribute the most for Global warming.

Governance for Greenhouse gas reduction as well as mitigation and adaption of Climate change for environmental sustainability, prime Minister Modi have given call of mission LiFE in COP 26. i.e. life style for an environment and reduce individual impact. Niti Aayog have called for the ideas for mission LiFE in first quarter of 2023 and awarded the top 5 ideas and recognized top 75 ideas.

India's strategy towards climate change is multipronged as given below.

1. **Mitigation** by providing Clean & efficient energy systems, Enhancing Energy Efficiency in Industries, Promoting waste to wealth conversion, Sustainable transportation network and Planned afforestation.
2. **Adaptation** by supporting Agriculture, Coastal regions & islands, Disaster Management plan and action, Protecting Biodiversity, State plans on Climate change, Knowledge management & Capacity building
3. **Providing financial resources** for clean energy, e.g. National Funds, Cess on coal, National Adaptation fund, Productivity linked incentives, Other funds, tax holiday & incentives for low carbon growth, Cut subsidies & increased taxes on fossil fuels, Tax free infrastructure bonds.

Recently, India updated its Energy Conservation Act 2001 and included Environmental Sustainability aspect in addition to Energy Conservation.

### **Industries and Individual Action plan for Energy Transformation through sustainable sources:**

Energy reduction as well as energy transition to low carbon / zero carbon energy is need of the hour. The energy transition also to be sustainable for common man, therefore, I am proposing five step approach for reduction of energy and carbon foot print by each individual as well as business houses.

#### **1. Energy Conservation:**

Any reduction of GHG /Carbon must start with energy conservation. i.e. use energy only when it is required. It is always easy to stop use of energy and reduce CO2 emission. Some of the examples are, turn on light, fan, AC etc only when it is required. We can use IoT or automation too to achieve this goal. e.g. motion sensor for conf room, light sensor for public lights, timer based operation of AC, lights etc. are practical examples being practiced by many.



## **2. Energy Efficiency improvement:**

Second step in reducing energy is by improving efficiency of equipment. i.e. perform similar work at low energy usage. Use of LED lights and national Ujala yojna is glorious example demonstrated by India. BEE have also given star rating for efficient equipment as well as implemented PAT Scheme for major energy consuming industries to improve energy efficiency. Due to technological advancement, new technologies are more efficient and it will be worthwhile to review availability of high efficiency equipment, not only to reduce energy but for economic operation.

## **3. Use of low Carbon alternate fuel:**

Third step to reduce impact of energy use on climate is to change over to alternate fuel having lower carbon foot print. Here also Pradhan mantri Ujjwala yojna demonstrated by India to replaced wooden Chula to LPG Chula is glorious example of replacing high pollution energy to low carbon foot print energy. India has gone ahead with 20 % bio ethanol blending in petrol and going for 7% bio diesel blending for diesel are the example to use low carbon alternate energy. There are several incentives given by Government of India to increase demand of Electric vehicle as well as development of infrastructure in many cities to use of metro, BRTS and electric bus etc are also the examples of use of low carbon alternate energy as well as use of energy efficient vehicle.

## **4. Use of Renewable Energy:**

Solar, Wind, Hydro, Geo Thermal as well as Bio energy are considered renewable as it is generated from natural and sustainable sources. Every industry is increasing their share of renewable energy by providing either on site renewable energy generation plant or off site renewable energy generation plants. International solar mission launched by India have given fruits in reducing cost of Solar power and make it affordable. Therefore, every house hold and small scale industries are expected to meet their electricity requirement. To promote further there is subsidy on house hold solar power and excess power can be exported to grid by net metering. All farmers are also motivated to put up solar power panel to run their pumps as well as export power to grid to generate revenue.

Second easy availability of Renewable energy is Bio energy, produced from agricultural waste, Bio mass, MSW, Cow dung etc. Today, there are many municipal corporations producing compressed bio gas, dairy producing CBG as well as many refineries are producing bio diesel from vegetable oil. Blending of Bio Ethanol in Petrol and Bio Diesel in Diesel is also accepted and pursued norm by Government of India.

## **5. Zero Carbon Energy – The ultimate goal to achieve net zero:**

Thus major thrust by India is to reduce energy consumption as well as reduce carbon foot print of energy consumed. But India is not ending its effort at lower carbon foot print. To achieve net zero carbon by 2070, India have launched national mission on Hydrogen.

Hydrogen is the fuel with zero carbon dioxide emission while usage. Hydrogen is not new for the industries but generation of hydrogen by steam methane reforming generate Carbon dioxide which is vented to atmosphere. Therefore, present hydrogen produced at industries is considered grey Hydrogen. If such carbon dioxide is captured and sequestered to underground while production of hydrogen, it is considered blue hydrogen.

If hydrogen is produced by electrolysis of water using electricity produced from renewable source like solar, wind, hydro, bio etc, the hydrogen is considered green hydrogen with almost nil carbon



foot print. At present, the cost of such green hydrogen is 3 to 4 times than that of conventional grey hydrogen or fossil fuel. In order to bring hydrogen fuel to the reach of common man and to make it economical, India has launched national mission on Hydrogen with plan to become Hydrogen hub. At present, green hydrogen is not sustainable due to economics but after getting advantage of economies of scale, government incentives through PLI and other schemes as well as many focused research to reduce cost, it is expected that India will be able to produce sustainable and economical green Hydrogen by 2030 to meet her mission net zero carbon.

**Conclusion:**

The need of the hour for sustainability is to reduce Greenhouse gas emission through energy transition, to keep global warming below 2 deg C. Today many areas of Greenhouse gas reduction are from sustainable source which must be adopted quickly by each individual and industries. Some of the area are technically sustainable but economically unsustainable. We need to accelerate our effort on R & D to make them economically sustainable instead of stopping our effort under pretext that it is not from sustainable source as it is essential for survival.

**“ Instead of mindless and destructive consumption, we need mindful and deliberate utilisation”.**  
**Narendra Modi at COP 26.**

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## **ROLE IN ESG IMPLEMENTATION: A PANACEA FOR CLIMATE CHANGE CMAs**

### **Introduction:**

Climate change warnings came from the experts in 1950s. Spencer, historian and retired director for the centre for History of Physics at American Institute of Physics in College Park, Maryland warned that 21st century would be a major cause of global warming, a phenomena of climate change. Since the carbon-dioxide emission is excessively high, disrupting the entire ecosystem the reduction of its discharge is highly demanded for a sustainable atmosphere. The alarming impact of climate change created a consensus among the think tanks and Paris Agreement is the culmination of various international efforts for decades together to combat the climate change. The agreement aimed to reduce the global greenhouse gas emissions to curb the increase in global temperature to two degrees celsius above the pre-industrial levels. On December 12th, 2015, Paris Agreement emerged as a historical turning point for global climate action as the leaders from 195 countries came forward to sign the deal and vowed for a positive turnaround strategy. Low lying countries need to implore faster measures to tide over the crisis of the climate change. Apart from the covid pandemic threat, the ever-lying insidious enemy: climate change brought forward extreme effects on the countries during 2018 namely, Japan, Philippines, Germany, Madagascar, India, Sri Lank, Kenya, Rwanda, Canada and Fiji. To take actions, several countries have initiated steps to reduce green-house gas emissions. The release of Co2 should be dominated to live in a healthy environment and in that context carbon tax policy is instrumental in controlling the upscaled carbon emissions. The goal is to achieve the environmental protection and in this connection the carbon tax is framed by compelling the business houses and industries to pay the tax for every unit of carbon discharge. Carbon tax, a Pigouvian tax was first introduced by Finland in 1990 and many other countries followed off late. As of 2019, carbon taxes implementation is scheduled in almost 25 countries and almost 46 countries put forward their thoughts in introducing some kind of pricing on carbon either through carbon tax or emissions trading schemes. Excepting countries namely United Kingdom, Switzerland and Ukraine, most of the European countries levied carbon tax. The carbon tax policy implementation has multiple merits but also not devoid of demerits.

### **Benefits of implementation of Carbon tax:**

- Carbon tax can act as a robust tool for fighting the climate change.
- Carbon taxes can internalise the negative externality of carbon emissions compelling the consumers/producers to pay the full social cost of consumption.
- Carbon tax policy implementation can enable to switch-over to renewable energy which has lower pollution costs.



- The revenue which can be generated from the carbon tax policy can be channelised towards alternative investments. It can also be invested for environmentally friendly projects or green projects.
- Carbon tax provides an opportunity to decarbonize global economic activities by influencing the behaviour of investors, business and consumers.
- Excessive importation of fuels can be arrested with carbon tax policy and domestic consumption would gain momentum.
- Carbon taxes provide an incentive for firms to use and develop more environmentally friendly production processes. If carbon emissions are taxed, then it may change the balance and make solar power relatively more competitive than burning fossil fuels like carbon. This will encourage investment in renewable energy and lead to further technological developments.
- Carbon taxes provide an incentive for firms to use and develop more environmentally friendly production processes. If carbon emissions are taxed, then it may change the balance and make solar power relatively more competitive than burning fossil fuels like carbon. This will encourage investment in renewable energy and lead to further technological developments.

**Discussion and Analysis:**

The global climate risk index 2020 by environmental and development organization German watch analyses the extent of severity of sufferings of the countries across the world due to climatic modulations, namely floods, earthquake, heatwaves. This climate risk index works as a red flag indicator for the countries at risk.

The table below shows the list of countries and their climate risk index rate in ascending order.

Sl. No	Country	Climate Risk Index	Economic Loss (Million \$)	Fall in per capita GDP rate (%)
1.	Japan	5.5	35839	0.64
2.	Philippines	11.17	4540	0.4%
3.	Germany	13.83	5038	0.12
4.	Madagascar	15.83	568	1.32
5.	India	18.17	37807	0.36
6.	Sri Lanka	19.00	3625	1.24
7.	Kenya	19.67	708	0.4
8.	Ruanda	21.17	93.2	0.34
9.	Canada	21.83	2282	0.12
10.	Fiji	22.5	120	1.14

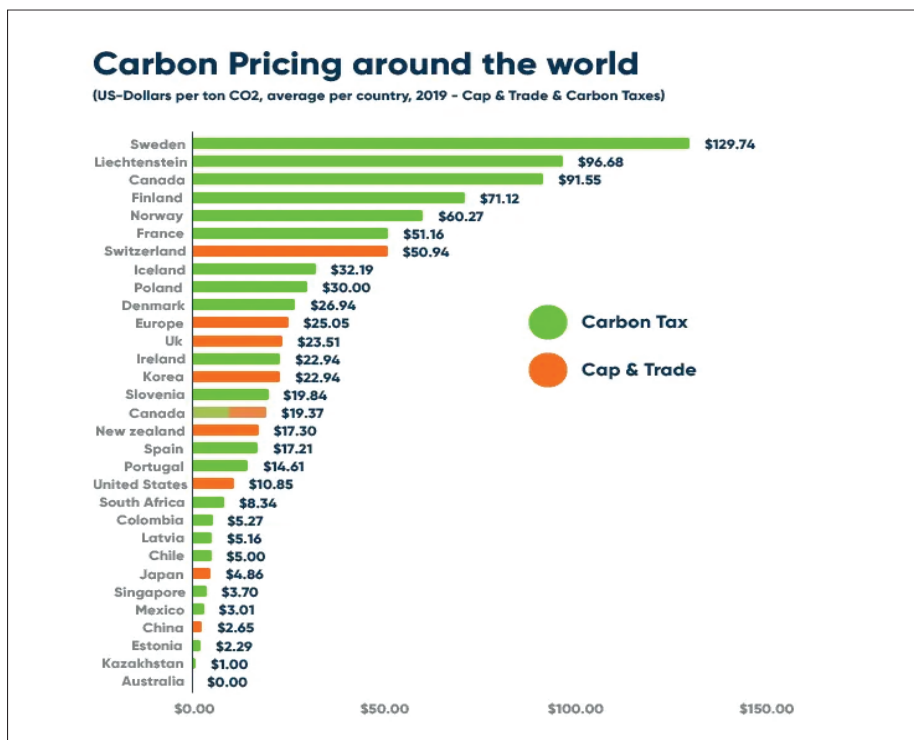
Source: [www.iberdrola.com](http://www.iberdrola.com)

Economists have attempted to curb the emissions by raising the cost of burning coal, gases and oil but due to the political trap efforts on carbon tax policy were shelved. Such experiences were faced by countries namely France and Australia. Voters explicitly stood against the move and as a partial measure the carbon pricing being introduced as an alternative supporting role to control the intensity of the global warming. Carbon tax policy is a direct method of paying a fee to the Government for burning the fossil fuels such as coal, oil, natural gas and gasoline. With the burning of these carbon filled fuels green-house gas emissions namely Co<sub>2</sub>, methane is produced which accelerates the atmospheric temperature and also enhances the global warmth. The main objective of



the implementation of the carbon tax is to mirror the actual cost that the burning carbon creates. The implementation of carbon tax gets dominated due to the political hindrances faced by the countries and carbon pricing emerged as an indirect way of introducing the awareness among the emitters of the Co2. There are at present more than 40 countries who have initiated the carbon price in the range of \$ 1 to \$130 for each single ton of Co2 emitted. The carbon price has two components, namely carbon tax and cap & trade.

The figure below shows the list of countries with carbon pricing programs.



The number of countries adopted direct carbon tax policy are only 21 out of a total of 190 countries around the world and only a few countries have introduced the concept of cap & trade technically known as Emission trading system (ETS). The trade part is a market for the companies to buy and sell allowances which enable the corporations to emit only a certain number of green-house gases. This trading opportunity incentivises the companies to save the money by reducing the emissions in a cost-effective manner. Governments decides the penalties payable for the violation of the rules, The gas Co2 and other allied pollutants are the major targets of such caps. Even the pollutants contributing towards the generation of smog also can be tapped. European ETS is most popular one which also reported some signs of weaknesses.

**Table showing percentage of emissions of carbon per province**

Sl. No	Country	Current price per Metric ton of Co2	Share of emissions covered per province
1.	Canada	\$ 15-30	47%-90%
2.	Britain	\$ 25	23%
3.	United States (9 North-eastern states)	\$ 5	18%
4.	Australia	\$ 10	Minimal



Source: nytimes.com

The other way of arresting the carbon emission or bringing down the severity of the climate change is the enunciation of the Environmental, Social and Governance (ESG). As the implementation of this scheme would neither be criticised by the common mass, nor would jeopardize the intensity of political footprints.

### **Role of ESG in climate change:**

The modified corporate social responsibility (CSR) of today is the ESG. The multi fold effects of climate change urges the investment in ESG which can neutralise the mal effects of climate change and bring harmony to the environment. *The CSR was not a legal mandate and became applicable to the corporations since 2013.* The CSR investment did not result in satisfactory societal and environmental improvement as the companies did not place their funds in the right alternatives which are aiming for the development of the society and community. Over a period of time its felt that this traditional financial cum societal investment in the name of CSR needs to be broadened by introducing the improved ESG policies from the industry. ESG report will also enhance the transparency as the report would explicitly disclose the investment data on environmental practices for the stakeholders and the shareholders to review. Efforts to reduce the change needs major investment and disruptive plans to reinforce. ESG consideration must be a part of the long-term successful business plans as it brings in an opportunity to grow in a sustainable recycled environment. Business output can be increased only when the society and environment on which the business stands is set free from the perils of the human actions and industrial wastes.

### **Role of CMAs in ESG implementation and fathoming its impact:**

The cost and management accountants are born with the talents of trimming down the inefficiencies in operation and escalating the effectivity in the production process. They are doyens in their domain of cost control, cost reduction and cost monitoring. Today's organizational investment in ESG goals is to be monitored to reveal its actual cost and benefits (in terms of savings to be made by arresting the financial damage, damage and disasters in human lives) for the welfare of the community. CMAs are capable of devising the standards for guiding the companies towards the articulation of the investment plan in ESG and can also measure with accuracy the benefits passed on to the community at large. *If the organization can produce in the heart of the environment, then it is the prima facie need of the entities to factor in the cost of investment in ESG in terms of per unit cost of production of the products and services while structuring the cost sheet and accordingly the mark-up and sale price can be determined so that the "policy of certain percentage of profit to be invested for ESG" would not defeat the distribution or retention of profits. This idea must be encouraged stringently by the Cost Accountants to ease out the process of ESG investment.* The audit needs to be conducted towards the investment in ESG and the upkeeping of the reports of such audit must be a mandate of the organization so that the sanctity of the performance of the organizations also gets doubly justified at the time of raising the finance.

### **Conclusion:**

The organizations need to stand in solidarity and express their gratitude to the environment for having uninterrupted flow of business activities and therefore in turn it's a much-needed agenda for the corporations to prioritize their investment on environment as a respect of reciprocity.



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## **STRIVING FOR SUSTAINABLE GROWTH THROUGH GLOBAL BASELINE FOR SUSTAINABILITY DISCLOSURES**

**Abstract :**

*The IFRS S1 and IFRS S2 issued by the International Sustainability Standards Board on 26<sup>th</sup> June, 2023 will go into effect for annual reporting periods beginning on or after 1<sup>st</sup> January, 2024. With the use of these IFRS-compatible sustainability disclosure standards, corporate reporting will incorporate both financial reporting and sustainability disclosures. This article will provide insight into the disclosure requirements under both these notified sustainability standards.*

**1. Introduction**

Because we have the opportunity and the responsibility to leave the next generation with a better planet than the one we inherited, the entire globe is currently working towards sustainable development. In light of extensive global integration, the need for a global baseline for sustainability disclosures seems inevitable. Considering this requirement the International Sustainability Standards Board issued IFRS S1 and IFRS S2 on 26<sup>th</sup> June 2023 as inaugural global sustainability disclosure standards; which will act as a global framework.

**2. Need for a global baseline for sustainability disclosures**

Globally 5,083,173 extra deaths annually (averaged from 2000 to 2019) can be attributed to non-optimal temperatures that is accounted for 9.43% of all the deaths, out of which 8.52% were cold-related and the remaining 0.91% were heat-related. The study also highlighted that deaths due to hot temperatures increased in all regions of worlds during years from 2000 to 2019. It further indicate that global warming (climate change) will make this mortality figure worse in the future.<sup>1</sup>

Even in India as well, the annual death toll on account of climate change (or extreme climate) during these years was nearly 740,000.<sup>1</sup>

Since climate change is a reality on a global scale and its effects may be upsetting or even beyond our wildest dreams, only sustainable development will be allowed moving forward. As a result, not only have businesses everywhere adopted sustainable practices and informed stakeholders about the effects of their operations on people and the environment, but sustainability considerations have also become a commonplace part of investment decision-making. As a result, the need for a reporting structure for sustainability-related issues becomes unavoidable, and member countries at the COP-26 summit underscored and acknowledged this requirement.



### 3. Setting up ISSB and guiding principles for establishing framework<sup>2</sup>

To address the need identified during the COP-26 summit in Glasgow, the Trustees of the IFRS Foundation announced on November 3, 2021, the formation of a new standard-setting body, the International Sustainability Standards Board (ISSB).

The creation of standards for a global baseline of sustainability disclosures is the first of the ISSB's four main objectives.

The Climate Disclosure Standards Board, the Task Force for Climate-related Financial Disclosures, the Value Reporting Foundation's Integrated Reporting Framework, the industry-based SASB Standards, and the World Economic Forum's Stakeholder Capitalism Metrics are a few examples of market-led investor-focused reporting initiatives that the ISSB builds on.

Since the ISSB is dedicated to providing standards that are affordable, decision-useful, and informed by the market, standards are created with efficiency in mind, assisting businesses in reporting to investors across marketplaces internationally what is required. The standards are created to deliver the appropriate data in the proper format to enable investor decision-making and to make it easier for worldwide comparison in order to draw in money. By following the ISSB's Standards, even an organisation can avoid double reporting. Companies are able to comply with jurisdictional standards while gaining from the effectiveness and comparability of the global baseline when jurisdictional requirements build on it.

Investors, businesses, decision-makers, market regulators, and others from throughout the world, including the Financial Stability Board, the G20, and G7 Leaders, have all expressed significant support for the ISSB's activities.<sup>3</sup>

### 4. The inaugural global sustainability disclosure standards<sup>4</sup>

The ISSB released the first set of two standards, IFRS S1 and IFRS S2, on June 26, 2023, to usher in a new age of sustainability-related disclosures in capital markets all over the world. In order to support investors' well-informed investment decisions, these criteria will help to increase trust and confidence in firm disclosures about sustainability.

The inclusive (more than 1,400 responses to the ISSB's proposals received and considered) and transparent process used to develop IFRS Accounting Standards has been used to develop standards by ISSB.<sup>3</sup>

Both of these standards are applicable to annual reporting periods that will commence on or after January 1, 2024. These standards can be applied even prior to this specified date, provided both the standards shall be in application together.

It is important to note that paragraph 8 of IFRS S1 states that an entity may apply the IFRS Sustainability Disclosure Standards regardless of whether the entity's general purpose financial statements (referred to as "financial statements") are prepared using IFRS Accounting Standards or other generally accepted accounting principles or practices (GAAP).

### 5. Features of these inaugural global sustainability disclosure standards<sup>3</sup>

#### 5.1 Structured and Reliable Information for Decision Making

Because the ISSB Standards are solely focused on the capital markets, they only call for information that is significant, appropriate, and helpful to investors in making decisions. Additionally, by starting with climate, businesses can gradually introduce their sustainable disclosures.



It is important to note that the ISSB Standards were created to help firms communicate how they identify and manage the sustainability-related risks and opportunities they face over the short, medium, and long term. They were created to give investors trustworthy information.

## 5.2 Consolidation of existing initiatives

The TCFD guidelines, SASB Standards, CDSB Framework, Integrated Reporting Framework, and World Economic Forum measures are expanded upon and combined in IFRS S1 and S2 to simplify sustainability disclosures. Consolidation will lessen the “alphabet soup” of sustainability disclosures and enable businesses to capitalise on their prior investments in sustainability disclosures.

## 5.3 Heading toward the elimination of duplication in reporting

The baseline approach offers a means of achieving financial market comparability on a global scale and permits governments to subsequently adopt additional standards if necessary to satisfy larger stakeholder or public policy concerns. For businesses with different jurisdictional reporting obligations, this strategy helps to minimise redundant reporting.

Furthermore, by working together with the Global Reporting Initiative, the ISSB is able to develop its requirements so that they are compatible with GRI standards, easing the disclosure burden for businesses that use both the ISSB and GRI Standards for reporting.

## 5.4 Linked to financials

The ISSB Standards’ information requirements are made to be included in the same reporting package as financial statements. The ISSB Standards were created to be compatible with all accounting regulations, although they are based on the same ideas as IFRS Accounting Standards, which are already mandated for usage in over 140 jurisdictions.

## 6. IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information<sup>5</sup>

Para 1 read with para 3 of IFRS S1 requires entities to disclose all the possible information that enables the investors (as primary users of general purpose financial reports) to assess the effect of significant (that could reasonably be expected to affect the entity’s cash flow) sustainability-related risks and opportunities while making decisions relating to providing financial resources to the entity.

Para 29 specifically requires an entity to disclose those sustainability-related risk and opportunities that could reasonably be expected to affect the prospects, business model, value chain, strategy, and decision-making, in addition to the financial position including cash flows, financial performance, financial planning over the short, medium and long term; apart from the resilience of entity’s strategy and its business model to such sustainability-related risks

Further, para 25 in particular requires entities to provide disclosures about;

**6.1 Governance** - The processes, procedures in addition to controls that it uses to monitor, oversee and managing the sustainability-related risks and opportunities;

**6.2 Strategy** -The entity’s strategy for managing sustainability-related risks and opportunities.

**6.3 Risk Management** - The processes in place to identify and assess (even prioritisation for



response and monitoring thereafter) the sustainability-related risks and opportunities; in addition to how these processes are integrated (or form part of) to the entity's overall risk management; and

**6.4 Metrics and Targets** - The entity's performance in relation to sustainability-related risks and opportunities, including progress towards any targets the entity has set or is required to meet by law or regulation. It is important to note that if an entity discloses a metric taken from a source other than IFRS sustainability disclosure standards, the entity shall identify the source and the metric taken.

## 7. IFRS S2 Climate-related Disclosures<sup>6</sup>

The Taskforce on Climate-related Financial Disclosures recommendations and metrics specific to industry classifications derived from the industry-based SASB Standards are both incorporated into IFRS S2, which establishes reporting standards in relation to the identification, measurement, and disclosure of a company's significant climate-related risks and opportunities.

Para 3 read with para 4 of IFRS S2 prescribes that scope is restricted to only those climate-related risks to which the entity is exposed (which are climate-related physical risks and climate-related transition risks) and climate-related opportunities that are available to the entity. Climate-related risks and opportunities that could not reasonably be expected to affect an entity's prospects (ultimately the cash flows and survival) be expected to affect an entity's prospects are outside the scope of this standard.

## 8. Other developments that will complement the ISSB standards & expectations

The International Audit and Assurance Standards Board is actively working to improve upon existing Standards, including ISAE 3000, ISAE 3410, and other non-authoritative guidance that is currently available, for assurance on sustainability disclosures as part of its project on Extended External Reporting.

The minimization (avoidance) of green-washing and deceiving investors and other stakeholder groups is made possible by these disclosure and assurance standards.

## 9. Way Forwards - A partnership for capacity building

In addition to creating the standards, the ISSB also has to collaborate with businesses and governments to encourage the use of these Standards. It was anticipated that the ISSB would support the effective implementation of IFRS S1 and IFRS S2 by launching capacity-building initiatives and activities, such as developing additional guidance and training materials as well as establishing a Transition Implementation Group.<sup>4</sup> As a result, at COP27, the ISSB announced plans for a capacity building partnership programme, helping to establish the necessary resources.<sup>3</sup>

## 10. Conclusion

With the help of these Standards, businesses and investors can adhere to a single and global baseline for sustainability disclosures for the capital markets, with any additional jurisdictional obligations being added on top of this global baseline.

Together, these pioneering standards and the ISSB's capacity-building project will contribute to boosting global comparability to the sustainability disclosure environment and fostering trust and confidence.



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## **THE GREEN LANDSCAPE OF INDIA**

### **Abstract**

*This article seeks to analyse the current landscape of India's green economy driven largely by the Great Indian Green Dream of achieving net-zero emissions by 2070. The report seeks to highlight progress made until now, and the active steps being initiated and implemented by the government, regulatory agencies and responsible corporates to make this big dream a reality and in the process ensure a green and clean earth.*

### **Green Economy**

*What would you like to leave behind for your kids and coming generations that they would truly cherish and be grateful for?*

Land, property, gold, investments? Looking at the current state of the environment, it would certainly have to be basic needs like fresh air, clean and steady supply of water, and a safe planet to live.

*Now the next question is how do you go about doing this? This article seeks to answer this basic question through analysing the current landscape of the Indian green economy.*

Every day we hear and read about soaring temperatures, untimely monsoons and extreme climatic conditions. India is one of the countries most impacted by extreme weather events and natural catastrophes. Over the past decade, there has been a lot of discussion and deliberation about climate change, sustainability, green projects etc. Unfortunately, climate change issues are no longer a distant reality to leave it to the experts to make policy changes. The answer lies in refining the ways we go about living our lives.

### **The Great Indian Green Dream**

As a country, we have made noticeable progress in terms of initiating action towards sustainable development. Green growth has been named as one of the seven priorities in **Budget 2023 'Saptarishi to Amrit Kaal'**.<sup>1</sup> During the Glasgow COP26 Summit, Prime Minister Narendra Modi had pledged to cut emissions in India to net-zero by 2070.<sup>2</sup> Net-zero is when a country does not add to the overall amount of greenhouse gases in the atmosphere. His pledge includes a promise to obtain 50% of India's energy requirements from renewable resources and reduction of carbon emissions by one billion tonnes by 2030. PM Modi had also emphasised upon the need to incorporate lifestyle changes to achieve these goals.

India is making steady strides towards achieving the sustainability goals. According to InvestIndia, India stands fourth globally in terms of total renewable power capacity addition (Ren21 Renewables 2022 Global Status Report).<sup>3</sup> As of May 2023, the installed capacity of non-fossil fuel based energy is about 43% of the total capacity. The Central Electricity Authority's projections indicate that green



sources could account for 57.4% of installed power capacity by 2026-27 and 68.4% by 2031-32.<sup>4</sup> The installed capacity does not perfectly translate into generated power due to the difference in efficiency of different sources. However, experts suggest that though the targets may seem ambitious, they are achievable if implemented in a phased manner.

India has geared up its Electric Vehicles market through incentives and strategic initiatives aimed at faster adoption of EVs. From electric two-wheelers to zero-emission trucks, zero-emission vehicles are gaining traction as a viable solution for clean transportation. The government is implementing various measures such as PLI schemes, cheaper road fees, installation of charging stations, scrapping and refit incentives to enable achieving the objective of 30% EV adoption by 2030. The government released its technical roadmap for deployment of zero-emission trucking (ZET) in India that details actions required, budget and timelines over the next five years to support transition to ZETs. Incentives such as green channel provisions at ports, improved charging infrastructure, toll exemptions, reduced insurance costs and the battery-recycling policy can accelerate the adoption of ZETs.<sup>5</sup> Special e-mobility zones are proposed to be developed in major cities where access would be restricted to EVs or comparable alternatives.<sup>6</sup>

Responsible private corporates are setting themselves green targets, investing in green technologies, aligning green goals with business strategies, establishing internal carbon pricing and making sustainable changes in their value chains to reduce their carbon footprints. Reliance Industries has set a goal of being net zero by 2035 while Tata Motors have announced that it aims to attain net zero emissions by 2045 across its passenger and commercial vehicle businesses. Around 30 Indian businesses have pledged to achieve net-zero emissions by 2050.<sup>7</sup>

### **Green Finance**

During the COP27 Summit in Egypt, India had highlighted the need for financing the projects directed towards reversing climate change in emerging countries. Following this, the government had also announced steps to mobilize private sector capital for green projects. Creating a green economy by transitioning to a low-carbon energy-efficient approach would require significant investment. India would require a whopping USD 10 trillion to meet its objective of net zero emissions by 2070.<sup>8</sup> Terms like ESG, climate action, green finance, and climate finance have crept into the finance and investment lexicology over the past decade and is gaining traction at a faster pace since the net zero pledge. Apart from government and industries, banks and NBFCs, venture capitalists and start-ups have come forth to display their commitment towards environmentally sustainable initiatives and green finance.

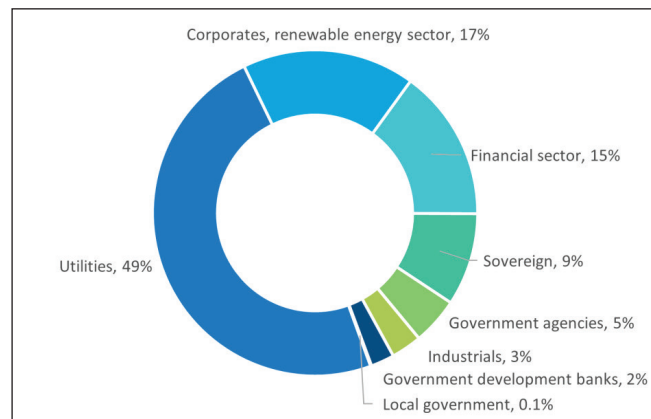
Green finance is the term for any structured finance (be it investment, loans or other debt instruments) that is designed with the objective of funding an environmentally responsible product or service. The objective could be to maximise use of renewable resources or minimise the adverse effects on environment. Banks and financial institutions have increasingly started issuing green loans and green bonds with favourable terms for businesses that invest in green projects. VCs and private equity investors are favouring and backing green start-ups that are offering innovative products and solutions focusing on the environment and climate change.

The European Investment Bank (EIB) issued the first green bonds in 2007 towards building a responsible banking industry. Indian Government has announced various new policies to support and promote green infrastructure. The Sovereign Green Bond Framework was published in October 2022 that identifies how the proceeds from green bonds would be allocated to projects such as energy efficiency, clean transportation, water and waste management practices and green buildings.<sup>9</sup> The

government had also authorised 100% FDI for renewable power generation and distribution. The World Bank and Asian Development Bank have increased their green funding to boost renewable energy projects in India.

Green bonds and green finance that support green projects are likely to witness higher credit ratings thereby increasing the demand for such instruments. Indian government's sovereign green bonds issuance in 2023 in two tranches has set forth a momentum to encourage domestic investors to participate more effectively in the GSSS space (Green, social sustainability and sustainability-linked space). Greenko Group, the largest green bond issuer in India has been funding hydro, solar and wind power projects in several Indian states.<sup>10</sup> The group, headquartered in India is a leader in the Indian energy market providing utility-scale, clean and affordable energy. The group has issued corporate bonds to the tune of USD 750 million.<sup>11</sup> As of February 2023, the Indian green bond issuance reached USD 21 billion, of which private sector accounts for 84%.<sup>12</sup>

**Fig 1: Green Bonds Issued In India by type of issuer**



(Source: World Bank with data from Bloomberg)<sup>12</sup>

### Role of Regulatory Authorities

The SEBI has introduced a slew of measures to promote sustainable projects funding and tightened monitoring through increased disclosure requirements. SEBI has made it mandatory for listed companies to publish their ESG performance and introduced a new category of mutual funds called the ESG category. As investors are increasingly including ESG parameters in their investment decisions, SEBI has felt the need to streamline relevant disclosures. SEBI introduced the *Core Business Responsibility and Sustainability Reporting (BRSR)*, which mandates 49 parameters for ESG reporting. It has also mandated AMC's to include the name of the ESG strategy in the funds and disclose the name of the ESG-rating provider in the monthly disclosures.

According to the BRSR criteria, 100 firms made voluntary disclosures in FY 22 and with effect from FY 2023 top 1000 firms are required to make such disclosures. The *Business Responsibility and Sustainability reporting (BRSR)* serves as a means to record, report and publish sustainable practices of organisation to stakeholders. This facilitates setting standards, benchmarking against the best practises and comparing ESG data across industries and sectors. Additionally new technology for tracking emissions and better reporting requirements will improve transparency. It is obvious that corporates of all sizes are eager to prove their green credentials and use this as another pillar of competitive advantage. Large corporates have announced ambitious plans to replace their conventional energy sources with renewable ones as they see the potential for long-term returns and



to negate the irreversible damage caused to the environment. Small and medium enterprises are also following suit and incorporating responsible practices.

Earlier AMCs could launch only one ESG scheme. Recently, SEBI has allowed AMCs to launch multiple ESG schemes under five categories. The five new categories would be exclusions, integration, best-in-class and positive screening, impact investing and sustainable objectives. The *Exclusions scheme* proposes to exclude certain securities based on certain ESG parameters while the *Integration scheme* would explicitly consider ESG parameters along with the other traditional factors. The *Best-in-class and positive screening scheme* would invest in companies that perform better than peers in ESG-related factors. The *Impact-investing scheme* would support projects with non-financial impact while ensuring that the impact is being measured and monitored. The *Sustainable objectives scheme* would aim to invest in industries and sectors that would benefit from long-term ESG related trends.

## Conclusion

The stage has been set, and it is time for some action. Public-private partnerships, research and academia, advocacy of new policies, shadowing the best practices of other countries are all essential steps in fostering a green revolution and building a green economy. It is up to each one of us to take the initiative to be part of the show and ensure its success, in the best interests of all of us.

On the occasion of World Environment Day 5<sup>th</sup> June, 2022 PM Modi launched the global initiative “Lifestyle for the Environment – LiFE Movement”. Mission LiFE proposes to borrow from the past, operate in the present and focuses on the future.<sup>13</sup> As individuals, we can step up action in line with PM Modi’s words to reduce, recycle, reuse and adopt the circular economy as a way of life to ensure we leave a green and clean legacy for the coming generations.

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## **GREEN FINANCE – GLOBAL FRAMEWORK, BANKING INDUSTRY AND RBI**

### ***Abstract***

*In India, for now, green financing is concentrated on renewable energy generation and electric vehicles only. There is a large potential in these areas which is still unexplored. A detailed guidance note from RBI just like on green deposits, is also required on green finance issuance and that will significantly pace up the sustainability revolution in India. The broad framework, sourcing, assets covered, types of green finance, core components, motivations, risks, and prohibitions are enumerated in detail here.*

Every business requires finance to start and to run efficiently thereafter. Finance is the blood of the business, economy and the society. Hence, governments are more keen to take help from Banks for protecting the environment. This gave the birth to the concept of Green finance.

Green finance has two aspects, one is sourcing of the funds from the public or world institutions and second is using that money to infuse into the business by way of loan or bonds.

### **Sourcing of Green Funds**

Banks often issue green bonds to source funds. These are ESG labeled financial instruments which are often called Green Bonds or Sustainability Bonds. There are green bond indices also round the world for e.g.. S&P Green Bond Index, MSCI Barclays Bloomberg Green Bond Index etc. These bonds have a precondition that the amounts can be used for financing green projects only. Further, banks take green deposits also from the public. Generally, the interest rates are lesser for these instruments as compared to other instruments. International Institutions like World Bank, IMF etc. also extend funds to governments and the bank for green finance.

When it comes to financing the green projects or assets, there are a lot of considerations and way of handling these. Let's look at various aspects of Green Finance.

The whole gamut of infrastructure that a bank needs for facilitating green finance is elaborated in detail here.

### **Green Finance – The Coverage**

Green Finance means financing options which are designed for acquiring green assets by the customer. Banks generally maintain a detailed eligible assets list where the broad classification of products is as follows:





### 1. **Clean Transport**

This includes loan for buying zero emission personal or commercial vehicles including scooters, cars, tractors etc. Further, the clean transport charging infrastructure development is also included. These loans can be taken both by the individuals as well as the businesses.

### 2. **Clean Energy**

Clean energy loan include loans for setting up of following types of renewable energy resources:

- Wind turbines or Tidal Energy plants
- Solar panels
- Biogas power plants
- Hydroelectric power plants
- Hydrogen plants
- Biomass plants
- Manufacturing of the equipment for above mentioned power generation activities

Further, it also includes loans for sustainable energy storage systems including –

- Sustainable Next Generation Batteries e.g. sodium ion batteries
- Compressed air or liquid air storage facilities
- Gravitational Storage etc.

### 3. **Clean Buildings**

Green Finance is also provided for buildings, fixtures and fittings which results in higher energy efficiency:

- Passive and active cooling or heating systems which use geothermal, solar, wind or other techniques like ice powered air conditioners etc.
- Automatic or smart lighting, cooling, heating systems installation which save energy
- Wall and Building Insulations
- Onsite renewable energy installations

### 4. **Green Agriculture**

Although agriculture is always a green initiative but green financing aims to make it even more green. Green Loans for agriculture include:

- Water management which includes water treatment plants, recyclable irrigation, flood and drought defences, storm water management etc.
- Crop Management which includes infrastructure and machinery for reducing agricultural runoff , pollinators habitat creation, recycling nutrients in farm etc.
- Food waste management including its collection, digestion through pants or anaerobic plants.
- Agricultural waste management including techniques for re-use, composting, manure, crop residue processing etc.



## Different types of Green Finance

Green finance is generally issued by banks under the following structures namely-

### 1. Green Asset Finance

These loans are utilized for identifiable, durable, moveable and saleable assets with such uses which are covered under the eligibility framework. The examples include hire purchase of electric vehicles and other eligible assets.

### 2. Green Loans

These loans are taken for assets which are hard to identify and which includes consumables. Further, the assets which are not durable, identifiable, moveable and saleable are acquired using green Loans. All the assets and the uses should inevitably satisfy the sustainability eligibility criteria. Loan can be with a fixed or variable notional but the revolving credit facility cannot be issued under this.

### 3. Green Mortgages and Investment Funding

Funding is allowed for such property purchases which are under EPC A/B criteria. Certification to this effect is generally obtained at the outset.

### 4. Retrofit projects

These are fittings which are partially covered under asset finance and partially under green loan, hence these are extended generally under a separate category. Retrofits are the insulation installed in the buildings which enables a differing impact than usual on the building heating or cooling so as to enable saving of energy and other resources in maintaining the required temperature for work or living.

## Core Components of Green Finance

There are following key aspects of green finance which have unique propositions as compared to the traditional finance:

### 1. Use of Proceeds

This is the most fundamental condition which separates a green finance from others. While applying for the loan, borrower needs to clearly assess and measure the environmental benefits of the project. Further, utilization of all the proceeds should be documented in the proposal document including the R&D expenditures and support expenditure etc. The proceeds should be utilized for acquiring assets or doing projects as per the eligibility list only.

### 2. Project Evaluation and Selection

Project Evaluation is done after having special emphasis on-

- The sustainability objectives of the project
- Process of establishing that a project falls in one of the items in the eligible projects list
- Potential environmental risks with proposed projects.
- Green standards, certification or reporting framework that borrower is seeking to adhere.

### 3. Management of Proceeds

The proceeds are released in tranches on the basis of invoices and other documents produced to satisfy that the proceeds are used for agreed purposes only. Further, proceeds are directly transferred to the seller in case of purchasing green assets or related raw material.



Further, the internal governance of the borrower is also assessed w.r.t. tracking the allocation of proceeds.

#### 4. Reporting

Reporting is a good way of keeping regular checks on the usage. The reporting is done in compliance with various sustainability standards. The use of proceeds is renewed annually until full drawn. Thereafter checks are also kept on sale of assets or change in usage.

The information on the stages of the projects and the other crucial information is generally kept confidential.

#### 5. Expert Review

Expert review is also used at initial stages or later stages for getting additional comfort. Following are various methods-

- Certification
- Rating
- Consultant Review
- Verification

#### Business Motivation behind the Green Finance

1. Increases the sustainability of project thereby lesser chances of losses by a forced closure by the government or lesser adoption of its products by the public at large.
2. Use of proceeds of lower cost green bonds.
3. Banks' own commitment and targets which are cascaded from regulators or the government.
4. Targeted lesser lead times for processing of a green finance application.
5. Minimal or zero arrangement fees are generally applied for green finance by banks.
6. The capital allocation and the risk weight is less, resulting in more capital at bank's disposal for financing more projects.

#### Risks in Green Finance

The green finance is also prone to a number of risks which include:

1. Green washing, where the company creates a false impression or provide misleading information that the project is doing more to protect the environment than it really is. It also includes unsubstantiated claims to deceive consumers into believing that a company's products are environmentally friendly.
2. Instability of the business, when the business is involved in testing, and dealing in innovative products, since the outcome might not be successful or might not be taken up by public with enthusiasm.
3. Lack of Collateral is generally prevalent making these kind of loans more prone to risk.

#### General Execution of Green Finance

The issuance of loan under green finance is not straightforward like normal loans but it will have certain unique propositions:

1. Proposal acceptance and decline processes and various steps involved.



2. A complete process needs to be setup namely for:
  1. Deciding upon eligible assets list.
  2. Deciding upon minimum and maximum lending limits for different class and quality of assets and certifications.
  3. Laying down of draw down criteria.
  4. CRM formats and relevant information points.
  5. Unique sales framework.
3. The documentation requirements need to be updated w.r.t. the buying of specific assets like invoice or the capacities enrichment like various certifications or the continued use of such funds as per the agreement.
4. The agreement should also include a clause of physical verification anytime to verify that the financing option is used for buying green assets only and those assets are not sold, put into a different use, materially altered or handled without bank's consent. In such cases, the green finance is liable to be converted into a traditional loan product.
5. Various requirements related to credit appraisal, evidencing and sign offs.
6. Setup of dedicated ESG advisory team consisting of experts in various domains.
7. Clause on restrictions on marketing the loan as green loan without banks permission.
8. The exception processes and the approval Matrix.

### **Generally Prohibited Finances**

Green finance bars some specific kind of lending namely:

1. Development projects in general and especially the ones which do not meet EPC A/B criteria.
2. Nuclear Projects.
3. Landfill Projects.
4. Larger hydro power plants.
5. Direct waster incineration.
6. Existing or new extraction where core energy source is fossil fuel.
7. Weapons, palm oil industries.
8. Renewable energy from biomass using feed stock originating from protected areas.

### **RBI and the lending in India**

There are a number of white papers presented across the globe on this and countries have committed to various targets on green finance.

India has also committed to net zero emission by 2070. For that, India need a budget of over US\$10 billion for green financing. For this, on June 1 2023, RBI has also launched its green deposits framework wherein both the institutional and retail investors can mark their fixed deposits as green deposits and it's proceeds will be earmarked by the banks for allocation to green projects i.e. the projects that yield environmental benefits.

Regarding the interest rates, they are more or less the same as compared to the traditional deposits.

For getting a green Asset, the larger business are already reporting as per SEBI guidelines on



sustainability reporting. However, it's the small firms which need to adopt the framework or get the certifications to be eligible for those funds.

### **India's Green Taxonomy**

Green finance is a subject matter of India's official green taxonomy which is yet to be announced. Till that time, RBI has included the following areas as eligible for utilizing the green deposits:

1. Renewable Energy.
2. Clear Transportation.
3. Energy Efficiency.
4. Sustainable Water and Waste Management.
5. Climate Change Adaptation.
6. Pollution Prevention and Control.
7. Green Buildings.
8. Sustainable Management of Living Natural Resources and Land Use.
9. Terrestrial and Aquatic Biodiversity Conservation.

### **Conclusion**

World Bank has recently approved \$1.5 billion in financing India's low carbon energy journey. Green bonds are also in issue, for long now. Further, there has been a constant increase in green deposits though lesser in pace. Widespread awareness programme is needed across the country for better reach.

In India, for now, the green financing is concentrated on the renewable energy generation and electric vehicles only. There is a large potential in these areas which is still unexplored. A detailed guidance note from RBI just like on green deposits, is also required on green finance issuance and that will significantly pace up the sustainability revolution in India.

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## **NEED OF GLOBAL COLLABORATION FOR INCLUSIVE GROWTH IN POST COVID WORLD: A STUDY OF G - 20 COUNTRIES**

**Abstract**

*The COVID-19 epidemic has had a huge economic effect and caused extensive damage.*

*Following the 2019 evaluation of the G-20's advancements towards robust, sustainable, equitable, and comprehensive growth, the COVID-19 pandemic has disseminated globally, resulting in fatalities and a profound economic downturn in 2020. It is probable that the recovery will be uneven and incomplete, with certain sectors and nations experiencing a more rapid rebound than others. Although there are indications that the situation may be improving, there is still a significant level of uncertainty due to the ongoing spread of infections. An abrupt constriction of financial circumstances, such as caused by unfavorable developments related to the disease, or political and societal unrest, may also impede the progress.*

**Introduction**

In the current global landscape, attaining comprehensive economic growth is a crucial objective for governments, policymakers, and development experts due to the fast-paced and interconnected nature of society. The phrase “inclusive growth” is used to indicate an economic expansion that benefits everyone and is not just a few elites. This type of growth ensures that all individuals and communities can benefit from the development process. However, attaining inclusive growth is a complex undertaking that necessitates the cooperation and synchronization of multiple stakeholders on a global scale.

Through this paper researcher tries to investigate the situation of G20 countries after the devastation caused by COVID-19 and recent shift in geopolitical scenario.

**Literature review**

In recent years, the notion of inclusive growth has received considerable attention from economists, politicians, and social science researchers. The concept refers to economic growth that helps all



parts of society, including those who have previously been excluded from economic growth benefits, such as marginalized groups, low-income households, and small enterprises. Different scholars and organizations have defined inclusive growth in a variety of ways. The World Bank, for example, defines inclusive growth as “growth that leads to equal opportunities for all and benefits all sections of society” (**World Bank, 2013**).

Numerous researchers argue that achieving inclusive growth is not only a matter of ethics, but also a necessary condition for ensuring sustainable economic development. According to **Anand and Sen (2000)**, a growth process that excludes significant portions of the population is expected to be socially and politically unsustainable. In accordance with **Stiglitz’s (2015)** argument, it can be stated that an economy that solely benefits a select few, rather than the majority, is inherently unstable. Inclusive growth is perceived as a means of guaranteeing that economic growth is enduring and advantageous to all segments of the population.

Inclusive growth policies and initiatives are also disputed. Many scholars believe that human capital investments like education and healthcare promote inclusive growth. **Banerjee and Duflo (2008)** say “investments in health and education are the key to breaking the poverty trap. COVID-19 has devastated millions of people’s health, livelihoods, and well-being worldwide. This review covers the effects of COVID-19 on healthcare, economics, education and trade.

#### **Healthcare:**

The COVID-19 pandemic has placed an unparalleled burden on global healthcare systems, resulting in scarcities of essential medical resources and inundating hospital capacities (**Li et al., 2020**). The pandemic has caused disruptions in regular medical care, resulting in postponed or cancelled surgeries and screenings. These changes may lead to adverse long-term health consequences (**Chen et al., 2020**).

#### **Economy:**

The COVID-19 pandemic has significantly impacted the world economy, causing decreases in Gross Domestic Product (GDP), interruptions in supply chains, and spikes in unemployment rates in a number of nations. (**Baldwin and Weder di Mauro, 2020**). Small enterprises and individuals with low income have experienced a disproportionate impact, resulting in financial difficulties and the possibility of insolvency (**McKibbin and Fernando, 2020**).

#### **Education:**

The global pandemic has caused significant disruptions to education systems across the world, resulting in the closure of schools and impacting approximately 1.6 billion students, according to UNESCO’s report in 2020. The transition to remote learning has brought to light the already existing disparities in technology and educational resources accessibility, leading to a decrease in academic performance and mental well-being among numerous students (**Ducharme, 2020**).

#### **Supply chain disruptions:**

Lockdowns and travel restrictions have made cross-border shipping difficult because of the COVID-19 pandemic (**Fernandes, 2020**). The unavailability of crucial inputs and goods due to factory and warehouse closures has exacerbated the situation (**Bown and Zhang, 2020**).

#### **Reduced demand:**

As consumers and businesses cut back on spending due to the pandemic, demand for goods and services has decreased (**Furceri et al., 2020**). Tourism and travel are substantial contributions to



international commerce; hence their fall has also hurt trade (WTO, 2020).

**Global trade decline:**

Global trade has fallen due to the COVID-19 pandemic, with the WTO anticipating a 32% drop in 2020 (WTO, 2020). Trade has declined in both developed and developing nations, with SMEs being severely impacted (UNCTAD, 2020).

**Objective**

The objective of this research is to perform a thorough examination of the post-pandemic environment and evaluate the repercussions of the pandemic on the worldwide financial system. The COVID-19 pandemic has resulted in substantial disruptions to social, economic, and political structures in many countries worldwide.

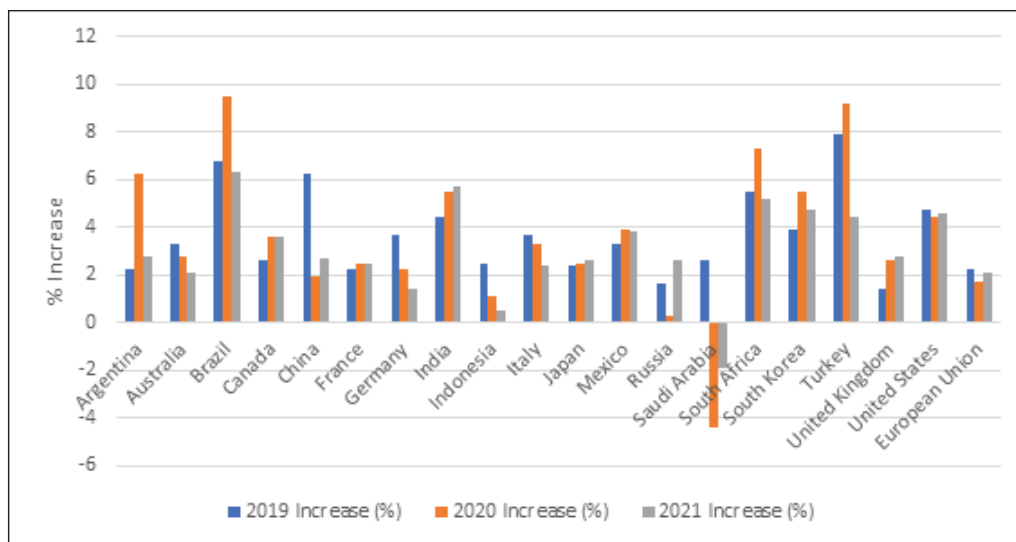
The present study aims to investigate the multifaceted impacts of the pandemic, encompassing alterations in consumer behavior, income inequality, and the PMI.

**Research methodology**

The present study employs secondary data analysis as a means to gain comprehensive insights into the “post-COVID scenario of G20 countries.” The secondary data was obtained through the collection of information from the official website of the government and the website of the World Bank.

**Impact of covid -19 on G 20 countries**

Figure 1: External debt stocks, long-term (DOD, current US\$)



Source: Authors creation based of data provided by world bank

Looking at the data, we can see that some countries such as Argentina, Brazil, India, Mexico, South Africa, and Turkey have experienced a significant increase in external debt stock in 2020, with some of them continuing to rise in 2021. The rise in external debt stock in these countries could be attributed to various reasons, including:

- 1. COVID-19 pandemic:** The COVID-19 pandemic had a severe impact on the global economy, leading to an economic slowdown, job losses, and reduced economic activities. Governments had to provide economic stimulus packages to support their economies, which often led to



increased borrowing from international creditors.

- 2. Decline in commodity prices:** Some countries like Brazil and South Africa are heavily reliant on commodity exports, and the decline in commodity prices in 2020 due to lock down round the globe could have resulted in a fall in their export revenues, forcing them to borrow more to cover their budget deficits.

### Purchasing Manager Index

PMI is a widely used economic indicator that gauges the level of activity among purchasing managers in both the manufacturing and services sectors. When the Purchasing Managers’ Index (PMI) surpasses 50, it is indicative of an expansion, whereas a PMI below 50 indicates a contraction. The following data presents the composite Purchasing Managers’ Index (PMI) for the G20 nations:

Table 1: PMI

Country	2019 PMI	2020 PMI	2021 PMI
“Argentina”	47.8	44.4	47.4
“Australia”	50.2	49.2	58.8
“Brazil”	52.6	50.8	53.2
“Canada”	51.2	49.4	57.8
“China”	51.8	52.8	53.3
“France”	51.3	49.6	53.4
“Germany”	51.6	47.0	55.8
“India”	51.7	47.8	55.4
“Indonesia”	49.9	47.6	50.4
“Italy”	48.6	47.0	55.7
“Japan”	49.5	46.7	50.2
“Mexico”	49.6	42.9	49.3
“Russia”	50.2	46.0	52.8
“Saudi Arabia”	56.4	50.4	57.0
“South Africa”	47.6	44.2	49.5
“South Korea”	49.9	51.2	53.2
“Turkey”	46.8	47.5	48.3
“United Kingdom”	48.9	41.9	57.3
“United States”	51.3	49.0	59.1
“European Union”	50.4	47.4	55.1

Source: world bank

We can see from the PMI data for 2019, 2020, and 2021 that several nations saw a decrease in their PMI score in 2020 compared to the year before. The COVID-19 pandemic, which disrupted global supply networks and decreased demand for products and services, is probably to blame for this.

Particularly, nations like the US, UK, and Australia experienced significant drops in their PMI scores in 2020, with the UK suffering the biggest drops from 48.9 in 2019 to 41.9 in 2020. Even though to a lesser extent, other nations like South Korea, Germany, and India all had reductions in their economies.

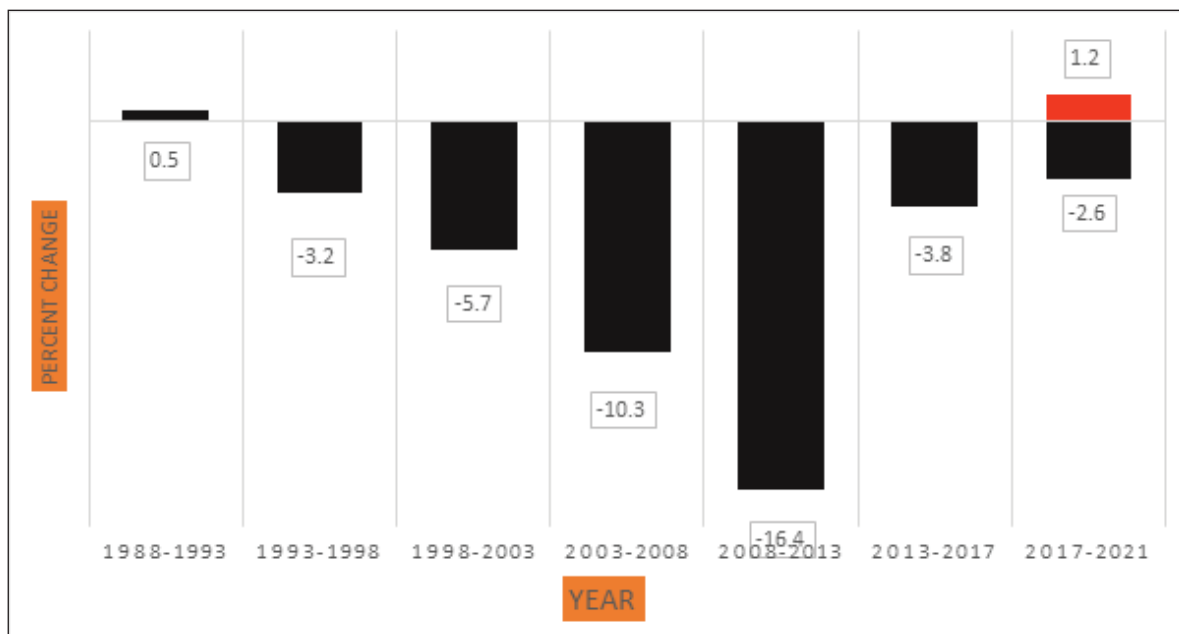
However, many nations experienced a rebound in their PMI scores in 2021, with some even surpassing

their levels from the previous year. As an illustration, Australia's PMI score went from 49.2 in 2020 to 58.8 in 2021, signaling a significant improvement in the manufacturing sector. The PMI scores of other nations, including the US, Canada, and Saudi Arabia, also significantly improved in 2021.

The COVID-19 pandemic has had a significant negative impact on the world economy, notably on the industrial sector, according to the PMI statistics for 2020. The numbers for 2021, on the other hand, show that several nations are making a comeback and that manufacturing activity is on the rise.

### Income inequality

Figure 2: Change in between-country inequality



Source: Author's creation based on, PovcalNet, Global Economic Prospects.

There were signs of declining wealth disparity in several parts of the world prior to the COVID-19 epidemic. For instance, figures from the World Bank show that globally, the Gini coefficient—a commonly cited indicator of income inequality—decreased from 0.404 in 2013 to 0.387 in 2018.

However, there has been uneven distribution of the effects of the COVID-19 pandemic's impact on the world's economies. A growth in income disparity has been observed in some places as a result of some industries and people being struck more severely than others.

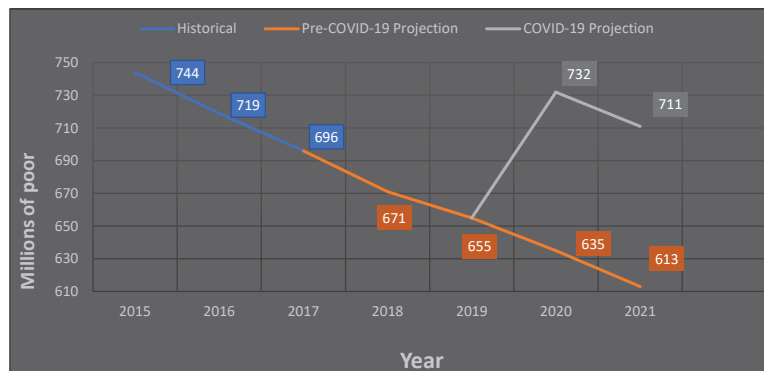
The COVID-19 pandemic was anticipated by the World Bank to result in a 2.6% reduction in global economic disparity in October 2020 because high-income earners were more likely to have lost their employment or seen their wages decline during the epidemic. In contrast to the World Bank's estimate, the actual data reveals that income inequality increased by 1.2% in 2020.

### Extreme poverty, 2015-2021

The World Bank defines extreme poverty as living on less than \$1.90 per day, using 2011 Purchasing Power Parity (PPP) exchange rates.



**Figure 3: Extreme poverty, 2015-2021**



Source : Author’s creation based on, PovcalNet, Global Economic Prospects.

It is crucial to highlight that the COVID-19 pandemic has significantly affected poverty rates and that the pandemic has probably led to a rise in those rates, particularly in the poorest nations. There is a sudden rise in extreme poverty from 2019 from the estimated projection shown in the figure 3.

### Need for global coloration for inclusive growth

The COVID-19 has had an immense effect on the worldwide economy, with vulnerable populations and countries being disproportionately affected by the ensuing economic crisis. Hence, it is imperative to establish worldwide cooperation and collaboration to foster comprehensive development and tackle the obstacles presented by the pandemic.

The urgency of the need is further demonstrated by the available data on external debt stocks, long-term trends in the Purchasing Manager Index, income inequality, and extreme poverty. It has been observed that elevated levels of external debt can impede economic growth and development. In addition, nations grappling with debt distress are expected to necessitate substantial international aid to facilitate their recovery. The decline of the Purchasing Manager Index in several countries suggests a deceleration in economic activity, which may disproportionately affect vulnerable populations.

Moreover, there has been a surge in income inequality across various regions of the globe, potentially intensifying the impact of the pandemic on the most susceptible communities. The deceleration of extreme poverty rate reduction has been observed, and there exists a potential danger that the progress achieved in the past few years could be undone by the pandemic.

In order to foster a more inclusive and equitable recovery from the COVID-19 pandemic, it is imperative that there be increased levels of international collaboration and coordination. Potential interventions to address the economic challenges faced by vulnerable populations may include debt relief for low-income countries, augmented financial and technical aid, and amplified backing for SMEs and the private sector to stimulate job creation and foster economic expansion.

The implementation of policies that promote greater equity and inclusivity, such as progressive taxation, social protection programs, and investment in education and skills training, is crucial in addressing income inequality. Finally, efforts should be made to strengthen international institutions and cooperation to promote a coordinated and effective response to the pandemic and its economic aftermath.

### Recommendations

In the post-pandemic era, it is imperative for nations to collaborate in order to facilitate economic recuperation and construct more robust and sustainable financial systems. Effective resolution of the current situation necessitates collaboration across various domains, such as vaccine distribution, debt relief, and economic stimulus measures.



The current geopolitical landscape has emphasized the necessity of worldwide cooperation in tackling mutual obstacles. As globalization continues to progress, it is imperative for nations to collaborate in order to effectively tackle worldwide issues such as environmental degradation, disease outbreaks, and economic disparities.

The collaboration must prioritize inclusive growth as a crucial aspect, given its potential to foster economic growth that is advantageous to all segments of society, especially those who have been historically marginalized or excluded. The attainment of this objective can be facilitated by the implementation of policies that foster education and the enhancement of skills, broaden the reach of financial services, and provide backing to small and medium-sized enterprises.

The current COVID-19 pandemic and the recent changes in geopolitical circumstances underscore the necessity of worldwide cooperation in advancing comprehensive development and constructing more robust and sustainable economies. Collaborative efforts among nations are imperative in tackling common obstacles and fostering inclusive economic development for the betterment of all constituents.

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## ESG REPORTING LANDSCAPE IN INDIA: CONTRASTING APPROACHES AND INSTITUTIONAL FRAMEWORKS

### Abstract

*In the modern era, commercial firms worldwide are shifting away from the short-term myopic objective of profit maximization toward long-term sustainability goals, i.e. environmental, social, and corporate governance (ESG), which evolved in response to substantial investor demand for non-financial to improve standardized disclosure. This study focuses on the comprehensive review of ESG regulatory frameworks for India to unmask the progress and importance of ESG implementation. Results revealed that India reflected improvements in ESG scores. Moreover, sustainability reporting and integrated reporting practices must be considered to uplift the ESG practice.*

### 1. Introduction

The Environmental, Social, and Governance (ESG) framework evaluates firms and investments in environmental sustainability, social responsibility, and corporate governance. Investors and stakeholders value sustainable and responsible business practices globally, making the notion popular. ESG principles have grown in India because of greater knowledge of environmental challenges, legislative changes, and investor expectations. Commercial businesses worldwide are changing from short-term profit maximization to long-term sustainability goals incorporating ESG goals. This is due to rising knowledge that ESG issues pose a significant risk to organizations and may affect their financial success. With a greater understanding of the ESG business case and a shift in corporate attention to these non-financial measurements, it has become a major concern for academics and professionals. The Indian economy is growing quickly, yet environmental and social challenges may hinder economic progress and stability. To raise finance, Indian companies have moved outside. ESG performance and transparency are important to global consumers and investors. Indian enterprises must strengthen ESG risk management to attract global investors.

The Business for Social Responsibility Report (2014) reports approximately three million NGOs in India; most doubt businesses' negative externalities and want authorities to require



responsible ESG practices and ESG/sustainability performance disclosure. In response to these pressures and global business environment changes, India’s regulatory agencies mandated filing business responsibility reports, which focus on ESG performance, for the top 100 listed BSE and NSE companies beginning December 31, 2012. Other firms will ultimately follow these regulations. These new rules and efforts may encourage Indian companies to excel in ESG. These advancements make this issue important in India.

**2. ESG Paradigm: Regulatory Frameworks and Shifting Trends in India**

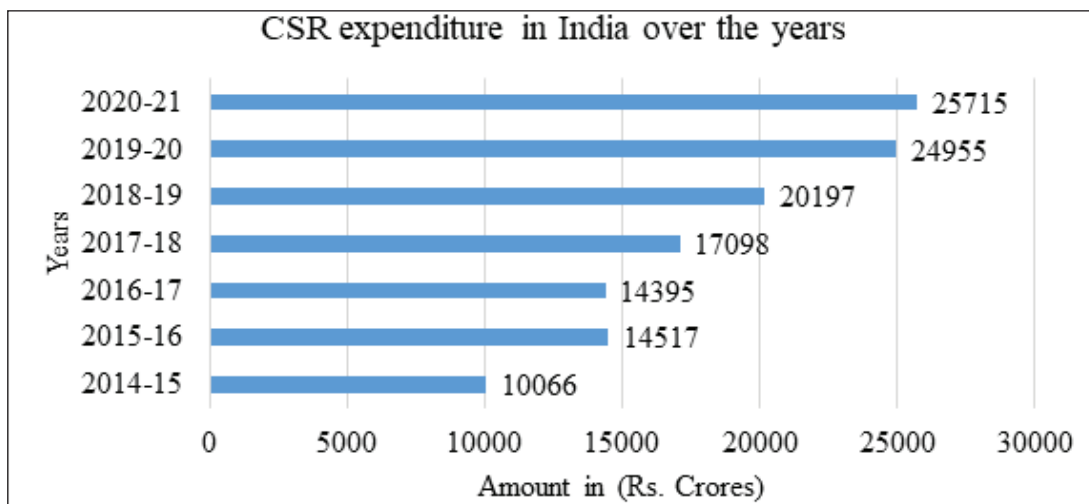
➤ **Rising Environmental Concerns: Urgent Calls for Action in India**

Over the period, India has suffered from numerous environmental issues as a result of the green revolution and increasing urban sprawl in the 1960s and 1970s, including declining soil eminence, exploitation of natural resources, and a reduction in forest cover. The Ministry of Environment and Forests was founded in 1980 to address these issues. The Air (Prevention and Regulate of Pollution) Act 1981 was enacted to prevent and regulate emissions in India, and the Environment Protection Act (1986) focused on policy implementation resulting from the Human Environment Conference of the UN (1972).

➤ **Framework for Governance and ESG Issues**

The Ministry of Corporate Affairs published the CSR voluntary recommendations (2009), which gave recommendations and components necessary for the design of the policy of CSR for business. Stakeholder-driven 2011 national corporate duties to the economy, society, and environment proposals. Companies Act (2013), revised to require the board to permit the corporate CSR with an investment of Rs. 5 billion (67.36 million USD) to explain its failure to contribute at least 2% of its average earnings to such activities. The SEBI published the disclosure requirements and listing for listed companies in 2015. This incorporated disclosure standards and rules (adhering to company governance regulations and providing timely financial information to the investors), with enough information provided to major investors and stock markets while also adhering to company governance regulations. For integrated corporate governance (CG), the SEBI is obligatory the top 500 listed businesses to practice. As a result of these reporting requirements, India now leads the world in CSR reporting.

**Fig. 1 CSR expenditure in India (2014-2021) (Source: CSR Reports).**



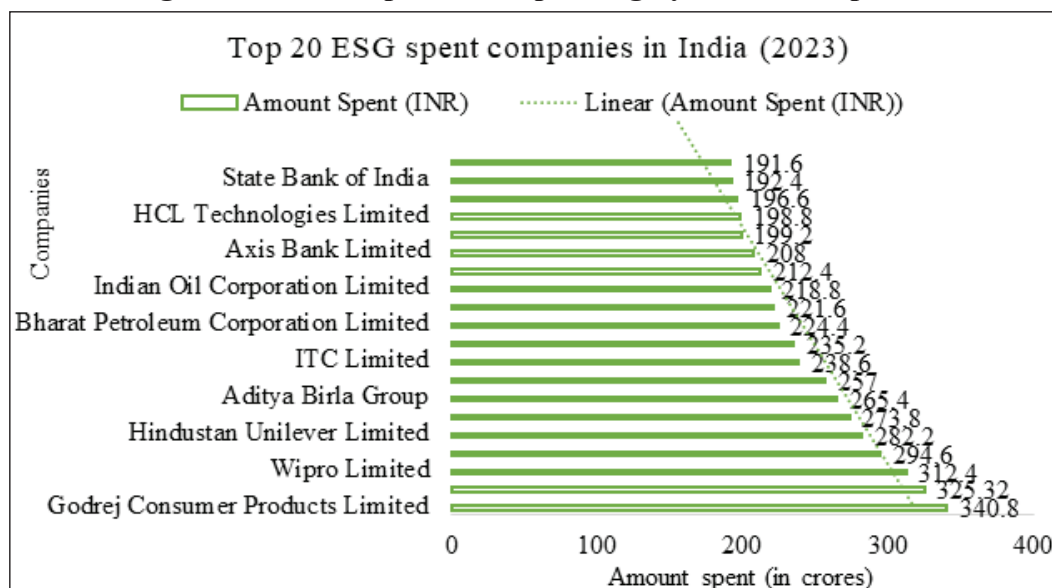


Other ESG activities in India have mostly been seen in the private sector. Avendus Capital established the first ESG fund in India, with no investments in the oil, gas, or thermal coal sectors. It worked with Institutional Investor Advisory Services (IIAS) to develop a ranking structure incorporating ESG concepts. Furthermore, in 2018, ECube (a billion-dollar fund) launched (Quantum Advisors and the three Tata Group executives as an alliance) to invest 30-50 million dollars for an 8-9% investment in small-mid market enterprises. Regarding the rate of sustainability reporting in the Asia Pacific, India performed admirably, finishing third in the region. However, the rate was 99% in 2017 and is expected to fall to 98% by 2020. India experienced considerable growth in integrated reporting, increasing to 28% in 2020, up from 5% in 2017 (KPMG, 2020). The COVID-19 pandemic heightened the importance of improving long-term viability. The PM10 WHO air quality guideline values were satisfied by 19% of the areas, showing that there is still substantial opportunity for improvement in Indian air quality (Singhania and Saini, 2023). In 2021, the green hydrogen mission was included in the union budget of India for decarbonizing heavy industries to establish 450 GW (renewable energy) as a first step toward completing India’s commitment to the SDGs made at the 2015 UN sustainable development summit.

**Table 1 Key Milestones in India’s ESG Journey.**

Environmental	Social & Governance	ESG
1960 - Green evolution	<b>2009-</b> Corporate Social Responsibility Voluntary Guidelines	<b>2017 -</b> Integrated Reporting rule by SEBI
1980- Ministry of Environment & Forest	<b>2011-</b> National Voluntary Guidelines on Socio-Economic and Environmental	<b>2019 -</b> Amendment to Integrated Reporting
1981- Air (prevention and control of pollution) Act	<b>2013-</b> Amended Companies Act	<b>2021-</b> Clean Hydrogen Mission
1986- Environment Protection Act	<b>2015-</b> Listing and Disclosure Requirement by SEBI	<b>2021-</b> RBI join climate change fight

**Fig. 2 Sectors of top 20 ESG spending by Indian companies.**





**Fig. 3 Top 20 sectors companies (in %) contributing through different sectors.**

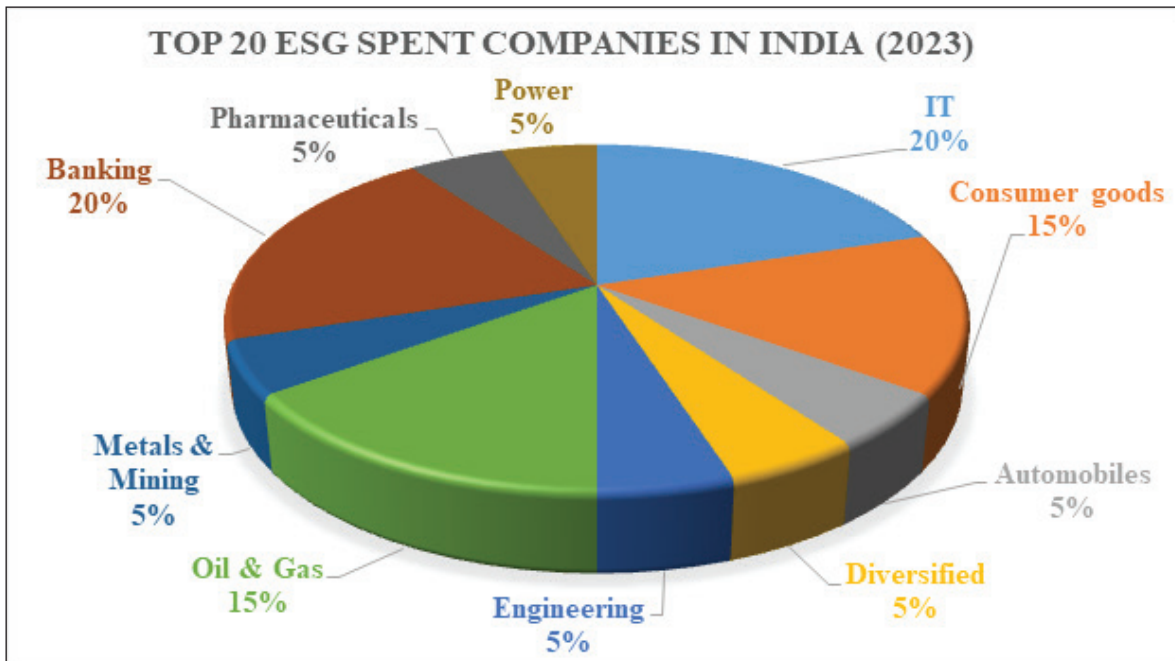


Table 1 is based on data from the Ministry of Corporate Affairs, which mandates that all publicly traded companies in India invest at least 2% of their net earnings in CSR operations. The amount spent on CSR initiatives reflects a company’s dedication to ESG (environmental, social, and governance) standards. Fig. 2 depicts Godrej consumer product Ltd. & Wipro Ltd. as the highest contributor companies in the ESG and Fig. 3 depicts companies from IT sectors as among the top twenty ESG contributors in India.

**3. India-specific ESG disclosure standards from the SEBI.**

The new SEBI consultation reports for India advocate the formation of the “BRSR core,” which follows in the footsteps of the World economic forum (WEF) and has strong parallels to its core metrics.

The environmental, social, and governance key performance indicators (“KPIs”) are tailored to India. E (change in greenhouse gas (GHG) footprint, which includes Scope 1 and 2 emissions and emissions intensity; water footprint, which includes volume, intensity, and discharge; research and development (R&D) expenses in reducing environmental footprint; circularity and waste management); S (employee well-being and safety; gender diversity; inclusive development); and G (fairness in engaging with stakeholders). Revenue and volume impact intensity ratios, as demonstrated in the E core above. SEBI advises global investors and ESG rating providers (ERPs) to utilize economic value adjusted (EVA) for purchasing power parity (PPP) to compare these ratios across jurisdictions. SEBI suggests first using the country-level PPP as a proxy and then calculating and integrating sectoral EVAs.

Indian calculations try indigenizing and adopting SEBI-simplified ERPs (Economic Survey, 2023). The corporate responsibility and sustainability reporting (BRSR) framework is still in its early phases; thus, it should be adjusted to match the KPIs in the BRSR core in the consultation paper. Starting in fiscal year 2023-24, the top 250 enterprises will be required to provide a fair guarantee on the BRSR core, followed by the top 500 listed companies in 2024–25 and the



top 1,000 listed companies in 2025–26. The SEBI recommends that ESG-linked funds invest “at least 65% of their AuM in companies reporting on comprehensive BRSR and assuring BRSR core disclosures” to prevent greenwashing. BRSR-reporting enterprises should get the remaining program funding.

In contrast, the consultation paper is uncertain about what “reasonable assurance” includes. As “assurance,” reasonable or otherwise, cannot be used instead of auditing, and ESG-related repercussions cannot be audited until they are provided as balance-sheet line items (Serafeim et al. 2019). This understanding is critical for rebuilding trust in using ESG data and information.

➤ **Opacity in supply chain disclosure:**

Contractors contract to subcontractors in globally dispersed manufacturing networks, making traceability challenging. In Bangladesh’s Rana and Tazneen garment factories, hundreds of textile employees perished due to a lack of audits and supply chain social infractions.

In “E,” specifically climate change, a corporation may quantify its GHG emissions footprint at three levels:

Scope 1 - Emissions produced in its own facilities, via owned vehicles, and thus under direct control.

Scope 2 - Emissions from purchased electricity; and

Scope 3 - All other upstream and downstream emissions, which include those generated in the supply chain, business travel by employees, a company’s vehicles, a company’s Scope 3 emissions, for example, may account for a significant portion of a company’s carbon footprint, but tracking and measuring such emissions is a difficult task given the multiple layers of the supply chain, which may be spread across multiple countries.

Blockchain, AI, sensors, and other technologies are opening new avenues for measuring and monitoring companies’ environmental footprints throughout the supply chain, but measurement can be non-standard, incomplete, opaque, and misleading. Many supply-chain partners are small informal enterprises, making ESG monitoring and reporting challenging. Recognizing tracking issues, SEBI proposes a phased approach to ESG disclosures for the supply chains of India’s top 250 listed businesses (by market capitalization) on a “comply or explain” basis, with assurance not needed initially. It is tough, and regulators, companies, and other supply-chain participants must work together to adapt. The SEBI proposal is the first tentative step.

Supply-chain resilience is an important problem conspicuously absent from conversations worldwide and in India. There is no statistic or KPI related to this in the WEF Stakeholder Capitalism Framework or the SEBI’s BRSR core. However, information on resilience-related KPIs is critical for determining a company’s potential to successfully recover, adapt, and expand in the face of an unexpected shock or stress, such as a pandemic or a natural catastrophe (Jovanovic et al., 2020).

➤ **The ESG Rating Quagmire**

ESG rating (ESG-R) businesses’ ESG data may strongly affect companies’ non-financial performance. A company’s ESG-R score shows its long-term ESG risk exposure. High ESG ratings improve public image, attract investors, and minimize capital costs (Nazir et al., 2021). ESG-R was created in the 1980s to advise moral investing. To accomplish this goal,



ESG rating providers (ERPs) must develop different rating techniques for different types of businesses and different points along the value chain within a given industry (Venegas et al., 2011). There has been a proliferation of rating organizations in recent years. Each ratter has its method for collecting and analyzing the ESG information submitted by businesses and other entities. Table 2 compares the various reporting structures used by popular ERPs.

**Table -2 ESG Frameworks Used by Various ESG Rating Providers**

ERP Agency	ESG Framework used by the ERP
Morgan Stanley Capital International	Sustainability Accounting Standard Board
Sustainalytics	Global Reporting initiative
Institutional Shareholder Services Environment and Social Quality	Carbon Disclosure Project
Rep Risk	Task Force on Climate-Related Financial Disclosure
Vigeo Eiris	UN Sustainable Development Goals
Financial Times Stock Exchange Russel	UN Principle of Responsible Investment

Further, the SEBI provided 15 India-specific factors that consider the changes on the relevant laws and policies in the nation to fully recognize what should ideally be regarded in the Indian context by the ERPs to carry out ESG grading. The proposal clearly states that ESG grading must follow Indian laws, regulations, and norms. This may encourage international ERPs to analyze India's development concerns more holistically. Global ERPs would have to work harder to deploy it, which may deter them. However, this data is necessary to compare an Indian ERP to a similar worldwide ERP.

Even while the SEBI proposes a “core” ESG rating, it also allows for a corollary that states such ratings “must necessarily be based on assured or verified data; however, ERPs may provide an additional commentary/outlook/observation on data that may not be verified/assured.” For instance, controversies that cannot be independently verified should not be included towards the overall ESG score. However, ERPs have the option of providing their comments on the matter. When faced with disputes, whether verified or not, it has been found that foreign ERPs often downgrade the score. Both ratings were downgraded after Volkswagen's emissions cheating scandal (Hotten, 2015) and Boohoo's supply chain labour mistreatment scandal (FT, 2020). MSCI (FT 2023) and Sustainalytics (Reuters 2023) downgraded numerous Adani Group companies after learning of the alleged governance breakdown (McGachey 2023).

It is desirable that the accredited ERPs in India fully utilize this privilege, even if they do not change their rating of a company at the first go based on unverified data, because the corollary will provide them with additional armour by allowing them to append reasonable comment on a company if they feel so. ERPs ideally would be more proactive in using their freedom to remark constructively rather than being silent during a crisis at the corporate or group level that might have far-reaching consequences for a country's economic and social well-being. However, in specifying the ERPs' certification standards, the SEBI's proposal is highly restrictive in two areas. To start, it suggests that only credit-rating agencies (CRAs) and research analysts with proper registration with SEBI may become ERPs. As a second point, SEBI suggests the requirements for the accreditation of ERPs with a net value of around '10 crore. SEBI's proposal adds knowledge, sustainability, infrastructure, quality of employees, and technological know-how to net worth as criteria for certification.



When compared to credit rating, the idea of ESG-R is more involved and ubiquitous. Unlike the former, which evaluates a company's creditworthiness—that is, its capacity to pay debt obligations—a credit rating focuses primarily on evaluating its creditworthiness or ability to meet debt commitments. Therefore, ERPs are expected to have a broader scope and include all established actors in the ESG field. SEBI excludes small and medium-sized private participants from the certification process by setting a minimum net worth at that level. To widen the pool of potential participants, at least at the outset, it may be prudent to re-evaluate the current net-worth criterion.

Some of these participants, now excluded by the net-worth requirements, may even have a greater grasp of the major concerns and the pulse and backdrop of the industry in a certain location, for example. Because issuers, rather than investors, pay credit rating agencies, the credit rating business is more susceptible to agency problems, conflicts of interest, and rating shopping than the enterprise risk management sector (White, 2010).

SEBI advises subscription costs to preserve ERP autonomy. The SEBI adds, “While investors can be the primary source of revenue in the ‘subscriber-pay’ model, a subscriber may also include an issuer.” Indian ESG ratings: In India, where ESG disclosure is still emerging, investors only use ratings from the most renowned international ERPs to assess portfolio enterprises' ESG compliance. Because ESG-R is still in its infancy in India, it is not yet regulated. Acute earned the first ESG grade by any Indian firm only in 2021. In the guise of a product offering called ESG Risk AI, the firm created a risk assessment system to analyze a company's ESG performance and issue a grade. SEBI suggests in its consultation paper that there should be a provision for core ESG rating in addition to what ERPs now provide in their rating services. This “core” is expected to be based on the “reasonably” guaranteed BRSR core disclosure. By proposing the “core” ESG rating, SEBI also deviates from a suggestion made in 2021 by the International Organisation of Securities Commissions in a study on worldwide regulation of ESG data and rating providers. The SEBI suggestion supports restricting the scope of ESG rating, which is useful for comparison. If implemented, it will

## 5. Conclusion

The Indian government is promoting ESG activities with ambitious climate objectives, which have taken ground in India as improving corporate governance. As a disadvantage, it may also have drawbacks to ESG measures as expensive implementation. But the nation boosted a vast and expanding economy, a youthful and educated workforce, and a strong commitment to environmental sustainability. As ESG efforts gain traction in India, companies and investors have an unprecedented chance to influence long-term change and build a more prosperous future for the nation. The complexity of the ESG landscape and the inherent opacity in the ESG-R area SEBI's proposals could move India's ESG disclosure and ratings in a positive direction. The first baby steps of SEBI are baseline construct, metrics, and KPIs in terms of “BRSR core” with advancement in India-specific parameters that are proposed to include the disclosure and ratings.

SEBI proposal KPIs for supply-chain resilience pointed to the reasonable assurance that demand from the stakeholders would increase for them to be harmonized as stakes in the ESG field get continuously bigger, highlighted KPIs for supply-chain resilience given the opacity in both disclosures by companies and the disparity in techniques for ratings. However, SEBI has purposefully refrained from commenting on ESG rating methodology. It seems sensible that a security authority like SEBI would specialize in recommending regulatory frameworks or offering illustrative suggestions. Although the ESG-R market is still in its infancy, there is already some “survey fatigue” among investee firms due to their unwillingness to give data. The



SEBI's suggestion to standardize via a "core" is a positive step in the right path for consolidation and standardization.

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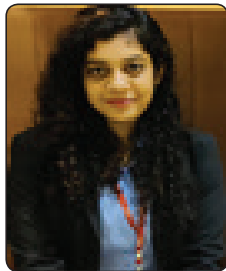




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## CHALLENGES AND OPPORTUNITIES OF GREEN FINANCE IN INDIA – AN OVERVIEW

### Abstract:

*Green finance is considered by the sensible use of resources, a low carbon emission rate and social insertion. The development of green finance has been ongoing. First of all, it is the investor's awareness of social issues which then gave rise to a more in-depth environmental mixing and a conviction of the actors of the need to include sustainability in the market. This branch from the field of international finance is widely used these days, given its influence on the greening of projects for the benefit of populations in the four corners of the world. This article gives an overview of green bonds and sustainable finance in India.*

**Keywords:** Green Finance, Green Bond, Sustainable Finance, Climate Change

### Introduction:

The term green finance is a loan or investment that helps environmentally-positive activities, such as the purchase of ecologically-friendly goods & services or the construction of green infrastructure. As the hazards connected to ecologically damaging products and services rise, green finance is becoming a typical phenomenon.

### Uses of Green Financing:

- Green Financing provides Economic and environmental advantages to all



- It broadens access to environmentally-friendly goods and services for individuals
- It helps an industry/enterprise, equalizing the transition to a low-carbon society, resulting in more socially inclusive growth
- This results in attainment of ‘great green multiplier’ effect in which both the economy and the environment gain, making it a win-win situation for everyone

#### **Need for the Study:**

- To meet energy demands and achieve sustainable development goals
- To minimize the impact of infrastructural activities on climate.
- To limit greenhouse gas emissions.

#### **Objectives of the Study:**

- To identify the important issues and challenges in green financing in India
- To analyze the role of regulators and financial institutions in green finance
- To study whether green finance has the potential to make a significant difference in the environment, society and climate change mitigation.

#### **Research Methodology**

##### **Mode of Data Collection:**

Secondary Data – RBI bulletins and NSE bulletins.

##### **Importance of Green Finance**

With the annual increase in global temperature, green finance has become the need of the hour for a world dominated by climate change. As these conditions prevail, there is growing international interest in the green finance market. One of the common green finance instruments is the Green Debt Instruments.

Green Debt instruments can be broadly divided into two categories: Green Loans and Green Bonds. While Green Loans are only authorized by the banking sector, Green Bonds, also referred to as Climate Bonds, are generally available to the broader investor market. A Green Bond is a bond in which the lender is the lender and the borrower is the issuer. The money lenders receive a fixed interest rate in return for their investment. Green Bonds have been the most popular of all green finance instruments. The Climate Bonds Initiative, an international non-profit organization, reported a 51% year-on-year (YoY) increase in global issuance of Green Bonds and Loans to reach a total of \$257 billion in 2019.

India is one of the fastest-growing green bond markets in Asia – in the first six months of 2019, green bond transactions in the country amounted to USD 10.3 billion, according to the latest Economic Survey. What is a green bond? A green bond (also known as a green bond fund) is a financial instrument used to fund projects related to the environment or climate change. As of 2020, green bonds have been issued by the United States, China, and France, respectively.

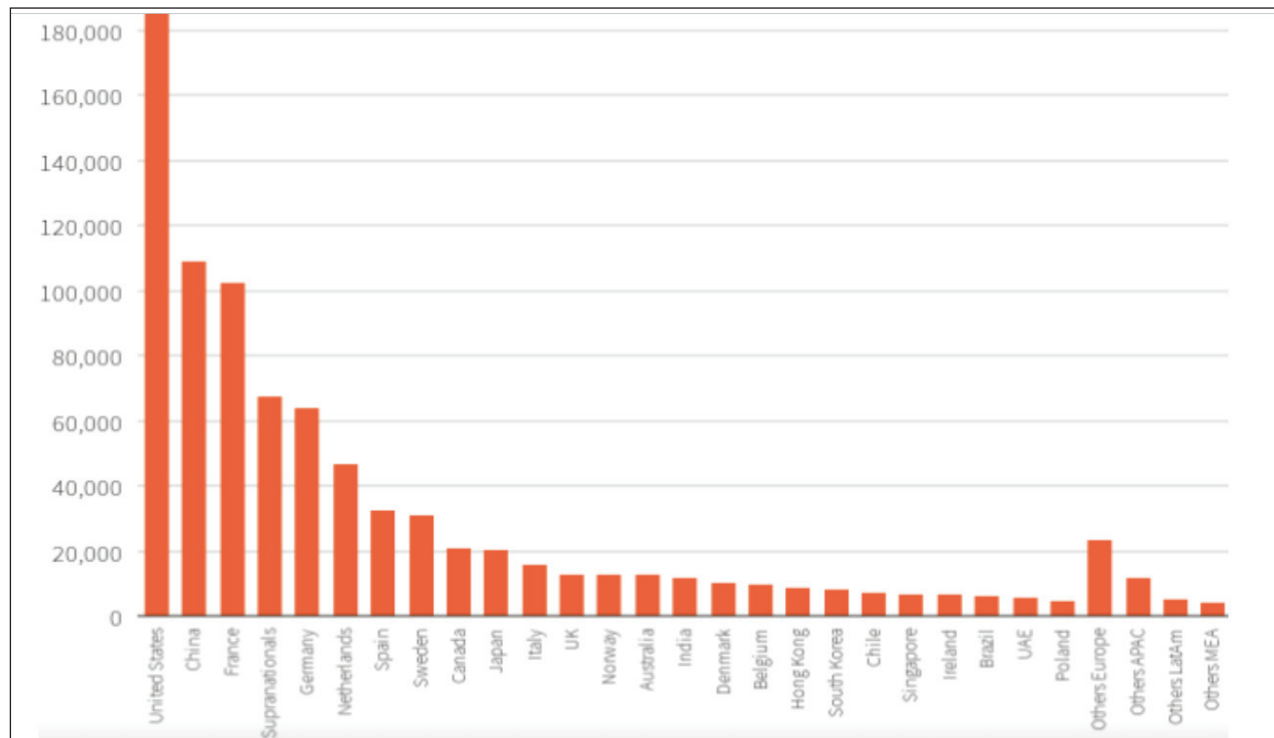
As mentioned above, green bonds are similar to conventional bonds in that the proceeds have been earmarked for a particular type of green project or asset, i.e., climate-friendly. There are three main types of green bonds: Organization-guaranteed green bonds Asset-backed bonds Hybrid bonds. The type of green bond depends on the repayment source for the lender and the recourse in case of default. (For example, an organization issues bonds to finance the construction of a solar farm.)

## Type of bonds

The structure for the three bond types is as follows:

- The creditworthiness of a bond is determined by the issuing organization (i.e. government, public institution, or corporate) and not by the financed asset (i.e., the solar farm). The farm is included in the issuer’s books and the lender is repaid by all cash flow generated by the issuer, not just that generated by the farm. Some bonds are convertible, meaning the lender is given the option to convert the bonds into equity at some point in the future.
- An asset-backed bond is a bond whose creditworthiness is only tied to expected revenue generated by the solar farm, not other cash flows generated by the issuer. A solar farm is a solar farm asset that is transferred to a separate entity (e.g., a SPE or SPV). The SPE holds only this asset, and the repayment to the lender will be made from the revenue generated by this farm only.
- **Hybrid bond** A hybrid bond can be structured in one of two ways: 1. The farm is on the issuer’s books. If a payment is missed, the lender owns the farm. If the farm’s value is too low to cover the payment, the lender can also claim on the issuer’s other assets. 2. The farm is in a special purpose entity (SPE). If the farm defaults, the assets in the SPE go to the lender. Just like the first way, the lender can claim on the other assets of the issuer.

The graph below indicates the global share of each country in the green bond market, during the COVID-19 pandemic:



[ Source: World Economic Forum - Agenda 2020]



A report released by the World Bank in April 2023, states that green bonds have raised \$2.5 trillion globally towards green projects.

### **Green Finance(Bonds) in India:**

The Inception:

In 2008, the Government of India launched an action plan against climate change. The purpose of this plan was to identify alternative sources of energy and promote sustainable development in different sectors of the economy.

To support this plan, the government proposed to set up various institutions and several funds to finance the program - The National Clean Energy Fund (NCEF), being one among them.

NCEF was founded in 2010 to finance projects aimed at using clean and sustainable sources of energy.

One of the major contributors to the Green finance sector in India is the Indian Renewable Energy Development Agency (IREDA) - which was founded back in 1987. IREDA provides loans and other financial aid to projects and entities that are dedicated towards renewable energy and environmental protection.

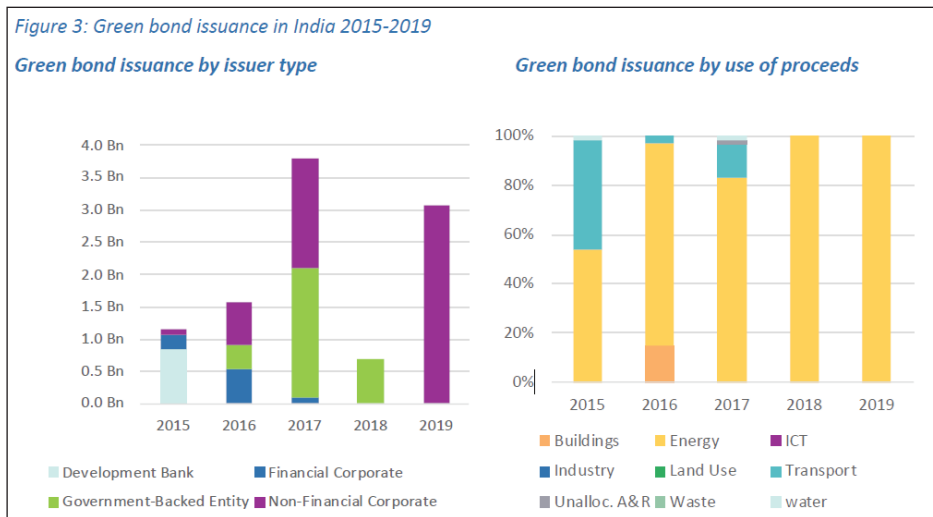
### **Progression in Green bonds**

The Economic Survey released recently by the Chief Economic Advisor states that by 2030 over millions of people worldwide will be at risk of displacement by drought alone. Though the Indian economy is responsible for 4% of cumulative global emissions, it remains one of the most vulnerable regions to climate change.

### **Role of SEBI in the mode of issue**

There are a number of tools that can be used by government, foundations, banks and private investors to finance green projects. These can be broken down into grants, risk mitigation products, equity and debt. For example, project-specific grants, such as decentralized solar mini-grid for rural electrification, are typically offered by global foundations and non-governmental organizations (NGOs). Risk-mitigation instruments can include credit enhancement guarantees or insurance products. In a guarantee, a government organization, development financial institution (DFI) or financial services company can provide lenders with assurance to cover partial/full payment in the event of a borrower's default. Green insurance products offer environmental risk liability coverage as well as indemnification against climate/environmental losses. Under equity, DFIs can provide start-up seed capital to kickstart a project. Venture capitalists or private equity funds can also invest in these projects/assets as an ownership stake or through an initial public offering (IPO).

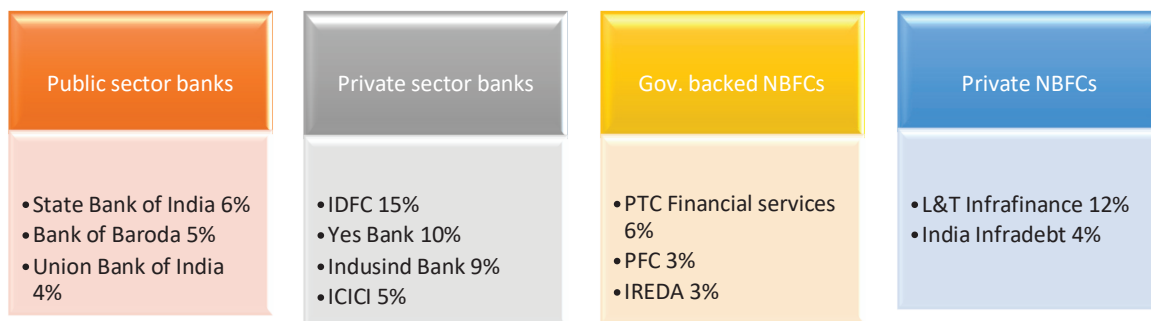
# REFER ANNEXURE



**The New Role of Local and Multilateral Banks – The Road Ahead**

Infrastructure financing in India has historically relied on bank loans from the private and public sectors. The most significant form of green finance so far has been the growth of the use of renewable energy sources. Debt financing of renewable energy projects is mainly done through term loans from financial institutions in the local currency.

Figure 1: Largest financial institutions that funded the initial renewable energy deployment in 2017



Source: Bloomberg

**Challenges for Green Finance in India:**

- A New Role for Local and Multilateral Banks Small-scale DRE projects have been hindered by a number of factors, including:
  - Financial institutions do not view energy efficiency as a stand-alone project. As a result, they are not willing to provide loans with no lien on the parent entity’s assets.
- This hinders the implementing organization’s ability to raise funding for new projects. Most banks use their lending limits for their main business.
- Lenders of short- and long-term debt have strict terms and conditions to mitigate risk.
- There is a limited the ability to provide long-term loans to small projects. Utility-scale, for example, can benefit from long-term loans because the asset class has a long history of success.





- Lack of policy coordination on green financing; inconsistent policies; and lack of profit incentives to investors.

### Conclusion:

The future of green financing in India is bright – with many opportunities for growth and innovation. The growing popularity of green financing has led investors and other stakeholders to evaluate resource usage and companies' compliance with environmental regulations. Green finance indirectly influences various decisions made by stakeholders in a business environment. India has set ambitious targets to reduce carbon emissions, especially by implementing renewable energy and improving resource efficiency. Green bonds in India have enabled organizations to fill the financing gaps in the conventional domestic capital markets because of the inherent risks of the projects and industries, such as the fact that renewable energy is still in the early stages of development. India is expected to be one of the biggest issuers in the coming years. As the green bond market matures and standards / certifications are developed, the global as well as domestic investors would feel more confident and encouraged. Financial institutions are willing to invest into climate change mitigation projects. India has made significant efforts to mobilize its private capital via green bonds and is one of the best places to invest in renewables. According to a report by the National Institute of Technology (NITI) Aayog, India's green hydrogen market is estimated to have a cumulative value of US\$ 8 bn by 2030 and is expected to reach US\$ 340 bn by 2050. In summary, the potential for green finance is high and optimistic in India.

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**Table showing list of key green bond issuance in India**

Issuer	Amount	Issued Date	Tenure	Type of Bond	Sector Exposure
Yes Bank	INR 10bn	Feb-15	10 years	NA	Energy
EXIM Bank	USD500m	Mar-15	5 years	NA	Transport, Energy
CLP Wind Farms	INR6bn	Sep-15	3, 4 and 5 years	Asset-backed	Energy
IDBI Bank	USD350m	Nov-15	5 years	NA	Energy, Transport and Water Management
Hero Future Energies	INR 3bn	Feb-16	3 and 6 years	Asset-backed	Energy
PNB Housing Finance	INR 5bn	Apr-16	NA	NA	Buildings
Axis Bank	USD500m	Jun-16	5 years	Senior, Unsecured	Energy, Buildings and Transport
ReNew Power	INR 5bn	Aug-16	NA	Asset-backed	Energy
NTPC	INR 20bn	Aug-16	5 years	Unsecured	Energy
Greenko	USD500m	Aug-16	7 years		Energy
ReNew Power	USD475m	Feb-17	5 years	Asset-backed	Energy
IREDA	INR 7bn	Mar-17	10 years	Government-guaranteed bond	Energy
Rural Electrification Corporation	USD450m	Jul-17	10 years	Senior Unsecured	Energy, Water and Waste Management
Azure Power	USD500m	Aug-17	5 years	NA	Energy
IREDA	INR19.5bn	Sep-17	5 years	Government-backed	Energy
Power Finance Corporation	USD400m	Dec-17	10 years	NA	Energy
Indian Railway Finance Corporation	USD500m	Dec-17	10 years	Senior Unsecured	Transportation
ReNew Power	USD375m	Mar-19	5 years	NA	Energy
Adani Green Energy	USD500m	Jun-19	5 years	Senior Secured	Energy
Greenko	USD950m	Jul-19	5 and 7 years	Organisation-backed	Energy
Greenko	USD300m	Aug-19	3.5 years	Organisation-backed	Energy
ReNew Power	USD300m	Sep-19	3 years	NA	Energy
Azure Power	USD350m	Sep-19	5 years	NA	Energy
State Bank of India	USD650m	Sep-19	5 years	Government-guaranteed bond	Energy
Adani Green Energy	USD362m	Oct-19	20 years	NA	Energy
ReNew Power	USD450m	Jan-20	Avg 5.5 years	NA	Energy
State Bank of India	USD100m	Mar-20	2 years	Government-guaranteed bond	Energy

Source: Climate Bonds Initiative; Organization press releases; News articles



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## CMA IN THE JOURNEY OF - ENERGY TRANSFORMATION THROUGH SUSTAINABLE SOURCES

### Abstract:

*The global energy landscape is undergoing a profound transformation as the nation recognises the urgent need to shift from fossil fuels to sustainable sources. Achieving this energy transition requires effective implementation that ensure the successful integration and management of renewable energy sources. This article explores the immense favourable effect of energy transformation through sustainable sources. The role of a CMA in this journey of energy transformation is crucial in ensuring the financial sustainability, highlighting the cost benefit analysis by proper valuation of benefits for individuals, communities, and the planet as a whole and effective utilisation of resources in this transition.*

### Brief discussion on Energy:

Scientists define energy as the ability to do work. Modern civilisation is possible because people have learnt how to interchange energy from one form to another and use in convenient way. Energy cannot be created nor be destroyed, can only be converted from one form to another – this is the law of conservation of energy.

Energy is used in various forms in our modern lives, catering to different needs and applications. Here are some common usages in modern life where energy is required:

1. Lighting, 2. Heating, 3. Cooling, 4. Running Industrial machines, 5. Running domestic appliances, 6. Running / operating entertainment appliances and media, 7. Transportation including lift & escalators, 8. Communication and Information, 9. Healthcare and Medical devices, 10. Infrastructure and public services, etc. Overall, energy is integral to modern life, shaping our living standards, productivity, comfort, and overall well-being. Out of various types of energy Electrical Energy is the most reliable, convenient and vital resource that enables to operate many automation aspects of our daily routines, industries, and infrastructure as stated above.

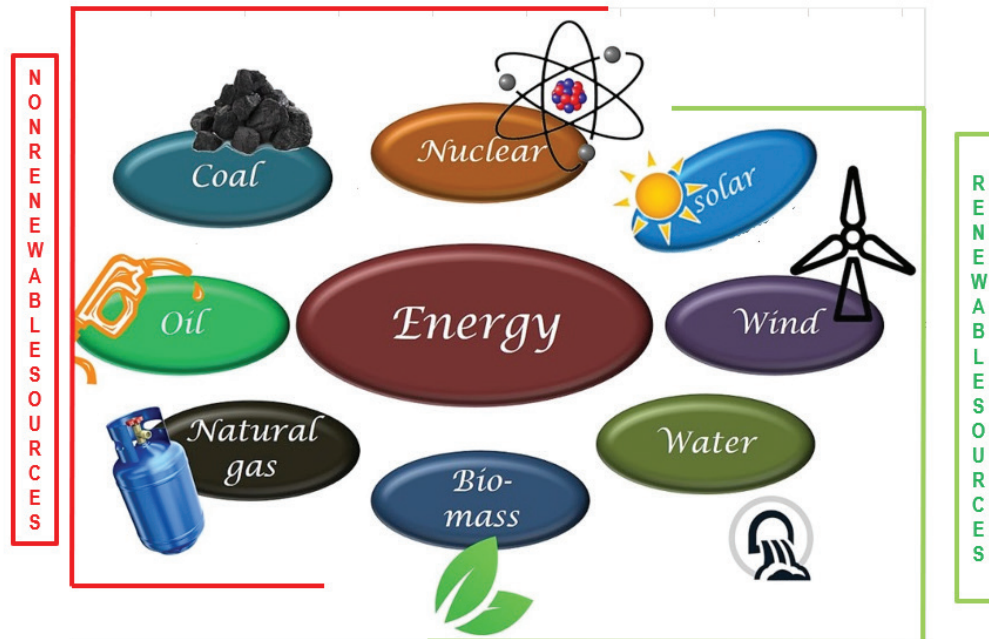
Electrical energy is generated by conversion of chemical energy (fossil fuel) in the form of Coal, Natural Gas & Oil, and the energy stored in nucleus of an atom as Nuclear energy also called as non-renewable sources. While conversion of electrical energy from Solar energy, Wind energy, Hydro energy, Geothermal energy, Tidal energy are called renewable sources of energy.

*{Source of electricity from Solar energy, Wind energy, Nuclear energy, Bio and Hydro energy are spruce practice now a days.*

*Geothermal energy refers to the heat stored beneath the Earth's surface, which can be harnessed to generate electricity.*

*Tidal energy is a form of renewable energy that harnesses the power of ocean tides to generate electricity.*

*Generation of Electricity from Geothermal energy and Tidal Energy is not yet prudent due to high cost and unimproved technology.*



Source: <https://commons.wikimedia.org>

To mitigate the exponential increase in demand of electricity in industries (Industrial revolution-II to till date), transportation and comforts in modern civilisation, human being use fossil fuel extensively to generate electricity (only and easy conversion technology available).

#### **Adverse effect of use of fossil fuels:**

The combustion of fossil fuels releases carbon dioxide (CO<sub>2</sub>) & methane (CH<sub>4</sub>) {greenhouse gases}, including sulphur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>), particulate material (PM), and volatile organic compounds (VOCs) into the air. A carbon footprint is the total amount of greenhouse gases (CO<sub>2</sub>, CH<sub>4</sub>) that are generated by our actions. The extraction, processing, and transportation of fossil fuels, spills or leaks from oil and gas extraction operations has resulted in water pollution incidents. Fossil fuel extraction, such as coal mining or oil drilling, can cause land degradation, deforestation, and habitat destruction. The air pollutants released from burning fossil fuels, such as fine particulate matter and toxic chemicals, can have adverse health effects. The collective effect of these activities has led to the loss of biodiversity and disrupt ecosystems.

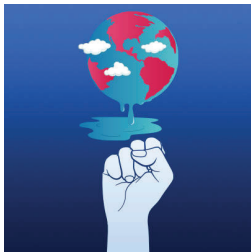
#### **Sustainable Energy:**

Sustainable energy is the provision of energy such that it meets the needs of the present without compromising the ability of future generations to meet their needs. This means that sustainable energy is power which is able to be replenished within a human lifetime and so cause no long-term damage to the environment. Renewable sources of energy are a part of sustainable energy.

There are some wide ranges of benefits for individuals, communities, and the planet as a whole by transitioning to sustainable energy:



CLIMATE CHANGE  
MITIGATION



1. Mitigating climate change: One of the most significant benefits of sustainable energy is its role in reducing greenhouse gas emissions.
2. Combating Climate Change: Sustainable energy maintains the natural environment since it is out of environment-friendly sources.
3. Allows Societies and Cultures to Thrive: Sustainable energy allows societies and cultures to thrive because sustainable energy does not disrupt a community's way of life.
4. Improved air quality: Shifting to sustainable energy sources significantly reduces these emissions, leading to cleaner air.
5. Improves Public Health: By reducing the cause of fatal diseases like - neurological damage, cancer, heart attacks, breathing problems.





6. Increase Energy access: Sustainable energy technologies can bring power to remote areas and regions lacking traditional electricity infrastructure.



7. Economic Growth and Creates Jobs: Since most facilities and sustainable energy infrastructure must be built locally or in the same county, this switch over helps create jobs and improve the economy.



8. Decreases Carbon Foot Print: Sustainable energy, such as wind and solar energy, creates zero carbon emissions hence decreases Carbon Foot Print.



9. Long term Cost effective and Price stability: Though initial installation cost is high by transforming to sustainable source of energy, but the long-term investment pays off in just a few years and price will be stabilised. In fact, sustainable energy costs decrease every year due to innovation of technologies in this field.



10. Energy Security & Independence: Sources of renewable energy is the most reliable, freely available and it will never deplete and can remove all the adversities of use of fossil fuel.

### **Role of a CMA in Energy Transformation through Sustainable Sources:**

The role of a CMA in the governance of energy transformation through sustainable sources is multifaceted, involving strategic decision-making, planning, and performance measurement by analysing, tracking, and managing costs associated with the adoption of sustainable energy sources and technologies. Management accountants contribute their financial expertise to support and guide organisations and policymakers in achieving their sustainability goals.

A CMA assesses the costs associated with the installation, maintenance, and operation of non-renewable/ renewable energy systems. By conducting cost-benefit analyses and financial modelling, a CMA helps in determining the feasibility of sustainable energy projects over a conventional non-renewable energy system. The role of a management accountant is crucial in creating confidence among investors to invest in a sustainable energy system by evaluating cost benefit analysis, risk assessment, performance measurement, sustainability reporting for a renewable energy system.

A CMA by carefully evaluating the major factors and considering the specific context, can make comprehensive comparison of power generation choices. Below, a comparison table that highlights various parameters (major factors) for power generation from various sources has been made:

Parameter	Coal-fired	Gas	Solar	Wind	Geothermal	Hydro
Fuel Availability	Limited	Limited	Unlimited	Unlimited	High	Unlimited
Greenhouse Gas Emissions	High	Moderately High	Nil	Nil	Very Low	Nil
Air Pollution	High	Moderately High	Negligible	Negligible	Negligible	Negligible
Water Usage	High	Moderate	Low	Negligible	Low	
Land Requirements	Moderately High	Moderate	High	Moderate	Moderate	High
Energy Efficiency	Moderately High	Moderately High	Variable/ Low	Low	Moderate	Variable/ Low
Reliability	High	High	Variable	Variable	High	High
Scalability	High	High	Moderate	Moderate	Moderately High	Moderate
Capital Cost (per MW)	Moderate	Moderate	High	High	High	High
Technological Maturity	Established	Established	Mature	Mature	Evolving	Mature
Job Creation	Low	Low	High	High	High	Moderate
Environmental Impact	Significant	Moderate	Nil	Nil	Nil	Nil
Integration with Grid	Seamless	Seamless	Requires Infrastructure	Seamless	Requires Infrastructure	Seamless
Energy Independence	Depends on Imports	Depends on Imports	Higher Independence	Higher Independence	Higher Independence	Higher Independence
Fuel Cost (per MWh)	High	High	Nil	Nil	Low	Nil
O&M Cost (annual)	High	High	Low	Moderate	Moderate	Low
Variable Cost (per MWh)	High	High	Nil	Nil	Low	Nil
Labor Cost (per MW)	Moderate	Moderate	Low	Low	Moderate	Low

Here, please note that the table provides a general overview. Absolute numbers are depending on various factors like technology, capacity, region, aging etc.

The valuation of potential benefits (intangible) of the effect of climate change mitigation, improvement

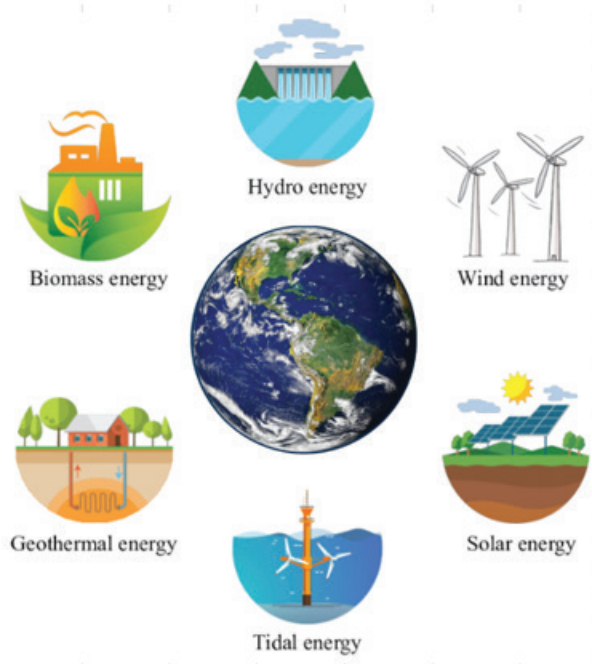


in air quality and health, increase in energy access, economic growth and job creation, long term impact of cost and energy security, is a complex, challenging and most coveted task as on date. Role of a CMA in valuation of effect of each change due to transforming to sustainable energy source is stupendous. A CMA can use several approaches to estimate the value of climate change mitigation efforts. Here are a few common methods:

- 1) Energy-Economic Models or Integrated assessment models - it can quantify the economic benefits of reduced emissions and provide insights into the value of climate change mitigation resulting from renewable energy use.
- 2) Social Cost of Carbon - transitioning to renewable energy and reducing CO<sub>2</sub> / CH<sub>4</sub> emissions can lead to lower future damages, which can be monetised and compared to the costs of implementing renewable energy technologies.
- 3) Sustainability reporting - a CMA can contribute to sustainability reporting by quantifying and reporting the project's environmental benefits, social contributions, and adherence to sustainability standards.
- 4) Performance measurement and reporting - a CMA plays a crucial role in monitoring the performance of the sustainable energy system and providing timely and accurate financial reporting.
- 5) Health Impact Assessment – it is a method that quantifies the health effects of changes in air quality resulting from the transition to sustainable energy sources. By comparing the costs before and after the transition, the benefits of improved air quality can be estimated.
- 6) Increased Energy Access - it considers factors such as increased productivity, income generation, and improved living standards resulting from enhanced energy access.
- 7) Economic Growth and Job Creation - it estimates the direct and indirect employment, income generation, and value-added contributions resulting from investments in renewable energy. It assesses the multiplier effects of job creation, increased consumer spending, and local economic development resulting from the deployment of sustainable energy sources.
- 8) Long-Term Impact on Cost and Energy Security - NPV analysis evaluates the long-term financial impact of transitioning to sustainable energy sources. By incorporating risk factors into the valuation, the long-term benefits and risks of sustainable energy transformation can be better understood.

### **Conclusion:**

Overall, energy transformation through sustainable sources is not only an environmental imperative but also a pathway to a more prosperous, resilient, and equitable future. By valuing and promoting the multiple benefits of sustainable energy, societies can drive positive change and transition towards a more sustainable energy system that serves the needs of present and future generations.



**Powering the Future, Sustainably!**

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## **ELUCIDATING THE NUANCES OF GREEN FINANCE- GLOBAL NUDGE, INDIA’S ADVANCEMENT AND PROSPECTIVE AUGMENTATION**

### **Abstract**

*Across the globe, lawmakers, investors, corporations, and people are taking steps to address the climate crisis, focusing on carbon neutrality strategies. Green financing helps the ecology and the economy with more people and businesses taking advantage of environmentally sound options, and the shift to a low-carbon civilization which is smoother and more equitable. The growth in green bond issuance is overtly visible across continents. Expanding the sector’s access to capital requires concerted effort, meticulous preparation, and the creation of Adaptation financing strategies at various administrative levels.*

### **Green Finance Demystified**

While contemplating the macro-perspective of Green Finance and its consequential impact on the lives of people, in sync with the Sustainable Development Goals, the anecdotal reference of Mark Carney, Former Governor of the Bank of England and a strong proponent of net-zero climate solutions, is a ready reckoner. He set the sustainability tone saying, “If multinational companies focus on their emissions all the way across their value chain... reductions can be pulled through economies and across the world”. For generations, climate change will continue to be the most pressing socioeconomic and geopolitical issue of this century. Across the globe, lawmakers, investors, corporations, and people are taking steps to address the climate crisis, focusing on carbon neutrality strategies. In order to transition to a low-carbon or sustainable economy, massive amounts of fresh funding would be required, most significantly in the form of green finance to back initiatives that reduce greenhouse gas footprints and help businesses cope with climate disruption—because of this, learning about green finances and why it matters is crucial. Green finance aims to enhance the volume of public, discrete, and non-profit financial investments (such as financial services, micro-credit, financial protection, and funding) toward environmentally friendly goals. Crucial elements include better ecological and societal risk management, embracing opportunities with positive environmental outcomes, and more transparency (Kumar, 2023).

Green financing helps the ecology and the economy. Consequently, more people and businesses will be able to take advantage of environmentally sound options, and the shift to a low-carbon civilization will be smoother and more equitable. This creates a ‘great green multiplier’ impact, wherein both the business and the natural world benefit. Over the years, several avenues have been thought over and earmarked as Green Finance channels, namely Green Mortgages, Green Loans, Green Bonds,





Green Banks, Green Credit Cards, etc. Green Finance, as a part of the Environmental (E) initiative of ESG business objective, is an impact investment with a multifaceted goal matrix encompassing corrective measures, exclusionary and inclusionary evaluation with focused investment objectives (UNEP, 2018).

### Global Perspectives

Progress toward achieving the Sustainable Development Goals (SDGs) and the Paris Agreement is being stymied by a series of events, especially COVID-19, the Russia-Ukraine conflict, and the worldwide disaster emergency. While advanced economies used unprecedented intervention packages to rebuild, emerging nations could not react due to lacking fiscal and macroeconomic reserves. Developing nations must make difficult choices between immediate aid and the funding needed for a permanent turnaround. In the wake of the COVID-19 pandemic, the developing nations face a USD 3.9 trillion shortfall by 2020 in their efforts to achieve the SDGs. However, this gap may be closed with less than 1% of worldwide financial resources. The global banking system's billions of dollars are not linked with the SDGs, and they might make things worse for underdeveloped nations' macro financial weaknesses. The value of the world's financial holdings rose 11% between 2019 and 2020, from \$420 trillion to \$470 trillion, largely thanks to monetary policy, especially quantitative relief stimulus by leading nations. After the pandemic began, the annual expansion rate of assets in High-Income Countries kept rising. Despite accounting for 85% of the worldwide population and nearly 60% of global GDP in 2020, emerging nations possess less than 25% of global monetary resources. Since 2018, industrialized nations' "environmentally friendly investments have seen remarkable expansion. Fairtrade, impact investing, and CSR initiatives are just a few examples of how environmentalism in financial services and business has gone from being a side issue to a top priority. In only two years, from 2018's USD 31 trillion to 2020's USD 35.5 trillion, total sustainable investment increased by 15%. In 2020, large investors, wealth managers, and private investors will have over USD 100 trillion in holdings under control. Sustainable investments will account for 36% of this ("Global Outlook on Financing for Sustainable Development 2023: No Sustainability without Equity," 2023).

### Empirical Evidences

Green Finance and Green Investments have been discussed in length by researchers in terms of multiple utility functions, and various established models have demonstrated the expected rate of return (ERR). To emphasise on the effort of stakeholders to derive a possible ERR, it is assumed that rate of return from a green investment is the combination of economic return (E) plus green return (G) that derives from green value addition, which can also be termed as total return (T) of green investment.

$T_{t+1} = (P_{t+1} - P_t + D_{t+1}) / P_t + G_{t+1}$ , where P is the price of the investment object and D is the dividend. Green return ( $G_{t+1}$ ) is considered as non-probability variable assuming green value is pre-emptively recognized (Noh, 2018). In this context, ERR of the total return of green investment  $E(T_{t+1}) = E[(P_{t+1} - P_t + D_{t+1}) / P_t] + G_{t+1}$ . While assuming various methodologies to ascertain the overall impact of green finance from a global perspective, it is imminent that Green Bond has emerged as the most sought-after green investment tool.

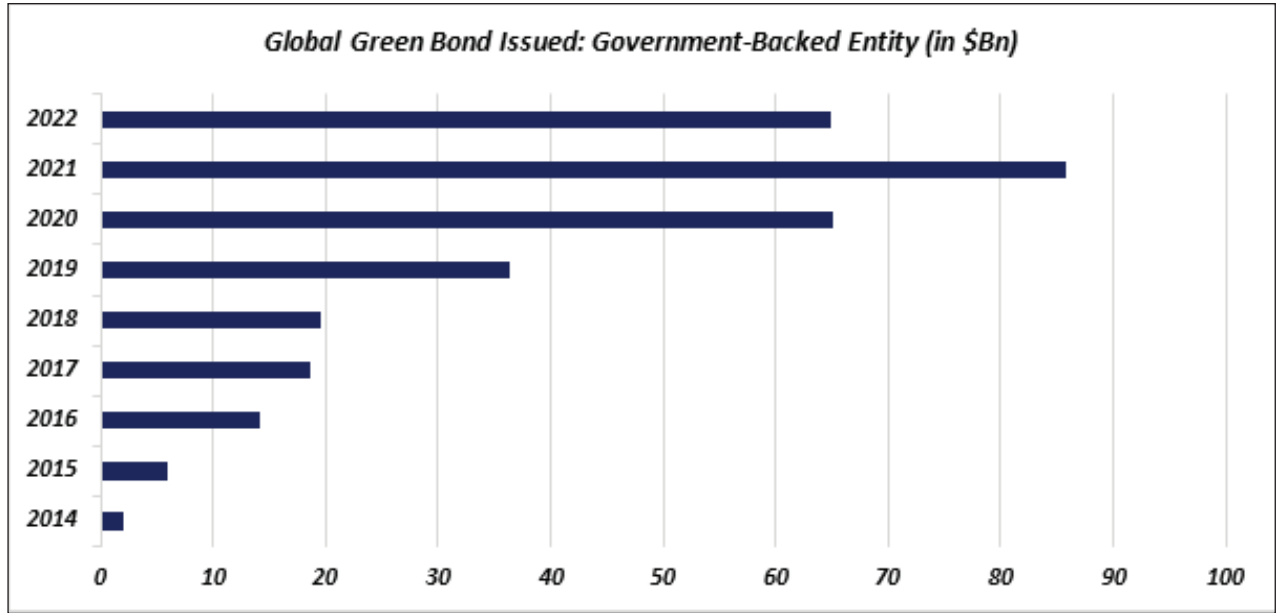


Figure 1: Global Green Bond Issued: Government-Backed Entity (in \$Billion)

Government-backed sovereign Green Bonds have been at the forefront for the past decade contributing immensely towards the asset holdings emanating from green issues. Figure 1 depicts the sustainable growth in global green bonds issued by government-backed entities (barring the COVID-19 disruption in 2021-22). While comparing countries of various economic capacities, the growth in green bond issuance is overtly visible across continents. Developed economies are leading the initiative; however, Emerging Market and Developing Countries (EMDC) are also gaining momentum. Figure 2 also indicates that Asia Pacific countries, the late starters, have already attained the pace of the European nations.

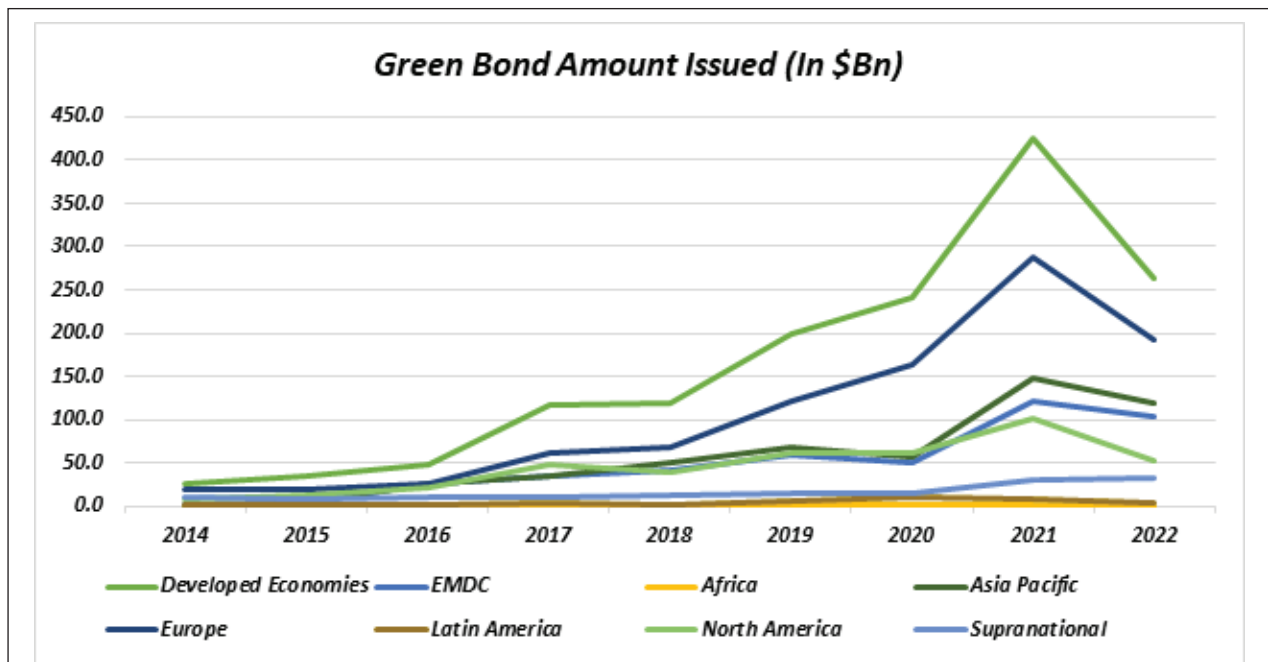


Figure 2: Green Bond Issued (in \$Billion)

India has also showcased significant growth in issuing green instruments to match its peers. Figure 3 highlights the growth from India's perspective, where a seven-fold increase in the green bond issuance amount has been observed in six years (2015-2021). 2022 further witnessed the introduction of similar sovereign bonds by the Indian Government.

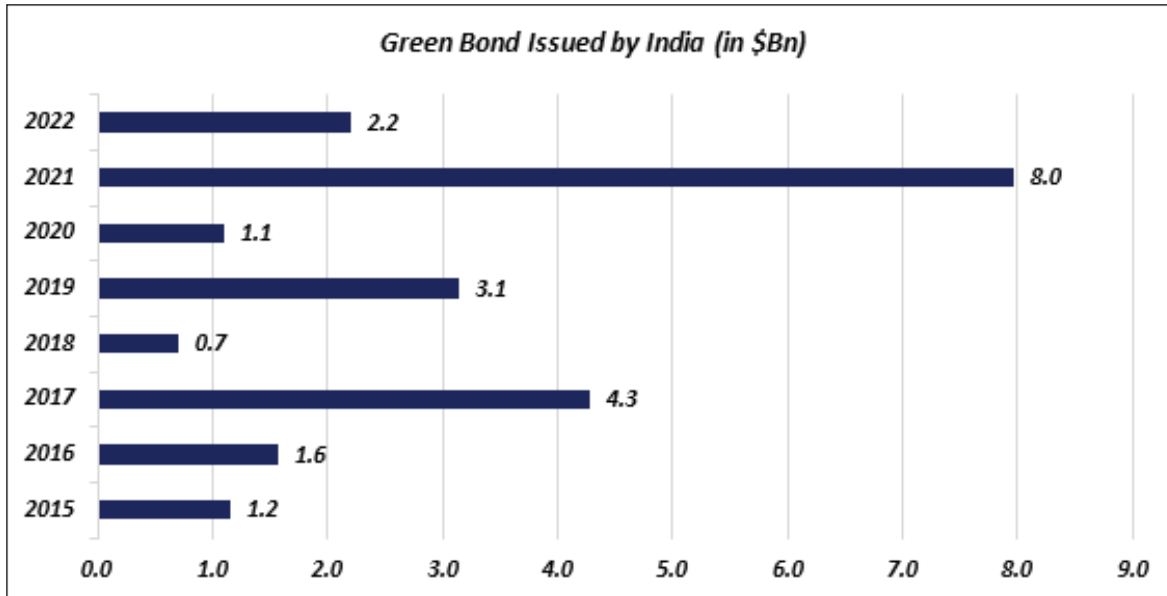


Figure 3: Green Bond Issued by India (in \$Billion)

### India's Commitment

The carbon footprint of India's financial system significantly affects worldwide emission levels and, by extension, climate change since India is one of the world's most populated nations with approximately 1.4 billion residents. When juxtaposed with the global average of 7 and the United States 17.4 CO<sub>2</sub>-equivalent tonnes per capita in 2021, India's GHG releases were relatively low at 2.8 CO<sub>2</sub>-equivalent tons. This made it the world's third-highest emitter, after China and the United States. The Indian government has been working to enhance energy effectiveness, expand forest coverage, and create more eco-friendly living spaces since launching its National Action Plan on Climate Change in 2008. The climate policy works in tandem with others, such as those pertaining to energy availability and water safety. As part of its Paris Agreement environmental objectives, India aims to have 50% of its installed capacity come from sources other than fossil fuels by 2030. This represents a 45% reduction in emission intensity relative to 2005. Around \$170 billion in yearly investments are required to meet these and other obligations ("Global Outlook on Financing for Sustainable Development 2023," 2022).

India stressed the need to increase aid to developing nations during the 27th UN COP, held in Egypt, so that they may better combat and cope with the impacts of climate change. Indian government declared its intention to launch sovereign green bonds on February 1, 2022, to raise funds for environmentally friendly building projects. The money will be invested in government programs that help lower the nation's carbon footprint. On January 25, 2023, India released the first instalment of its \$980 million sovereign green bond. India's central government notified the sale of another \$968.1 million worth of sovereign green bonds on February 9, 2023. India's steadfast conformity to boosting its sustainable energy output and decreasing its carbon footprint is shown by the sovereign



green bonds, which fund investments in alternative generation and electric transportation. Since 2015, the tool has been utilized by financial organizations and government bodies. As of February 2023, the total amount of Indian green bonds issued was \$21 billion. Eighty-four percent of the sum came from the private sector. The Uttar Pradesh municipality of Ghaziabad Nagar Nigam has issued India's first green bond (\$ 20 million in 2021) (Hussain & Dill, 2023). In 2023, the Indore Municipal Corporation issued a similar green financing instrument for \$ 87 million. Compared to other developing markets in Asia, excluding China, Indian issuers released the highest amount of green bonds. India's shift toward sustainable, adaptable, and equitable growth will be aided by the government's entry into the institutionalized green financing market, leading to more funding for environmentally favourable infrastructure and initiatives.

### **Moving Forward- Gaining Ground**

Given the concentration of financial holdings in these jurisdictions, it is incumbent upon authorities to fortify guidelines, procedures, and other advantages to boost risk mitigation, forestall “SDG-washing,” and guarantee that local regulations prevent adverse repercussions on the financial sector deepening from occurring in other countries. Here are some suggestions, supported by examples of good practice, for getting administrations and financial institutions in countries to work together. Donors may assist in decreasing actual and potential financial risk in emerging nations by collaborating with investment firms, DFIs, and other large investors (Serhan Cevik & João Tovar Jalles, 2020). In order to improve the openness of sovereign credit ratings and to incentivize the incorporation of long-term SDG assessment standards, developed nations might cooperate with credit rating organizations. By using SDG development as an important measure, developed nations may aid in revising existing sovereign ratings and financial frameworks. Governments making concrete progress toward the SDGs should be rewarded with a better sovereign credit score to attract business. The industrialized nations may aid in making ecological requirements more compatible with one another by collaborating within the global system. Achieving significant effect for individuals and the planet throughout the value chain may be aided by encouraging consensual and mandated conformity and reporting of private sector operations, especially financial system operations. The 1% SDG Alignment Club encourages using one percent of private sector money worldwide to fund initiatives that enhance the SDGs in underdeveloped nations. Western nations and their commercial mediators should support this initiative. There is a dire need for investment inflow into the Adaptation business in India, which is one of the most susceptible nations to changing climates (Niyazbekova et al., 2021). In FY 2020, the sector only had access to \$ 5 billion in monitored funding, which was much below the industry's requirements. Expanding the sector's access to capital requires concerted effort, meticulous preparation, and the creation of Adaptation financing strategies at various administrative levels. While elaborating on the prospective nuances of green finance, let us remember the first principle of sustainability- “Understanding net zero means you understand climate risk. There are no returns on a dead planet.” Taking a cue from this, it is not the return on the sustainable investment that denotes its success but the impact it disseminates to improve the quality of life on the planet Earth.

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- *Note: ‘Views expressed in the paper are those of the author alone and do not, in any way, represent the views of the institutions he is employed/associated with’.*

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## **INVESTING WITH PURPOSE: UNLEASHING THE POTENTIAL OF SUSTAINABLE FINANCE**

### **Abstract**

*Investing with purpose has gained significant traction in recent years as more investors recognize the importance of aligning their investments with sustainability objectives. Sustainable finance has emerged as a powerful tool to unleash the potential of such purpose-driven investing. This article explores the concept of investing with purpose and the role of sustainable finance in driving positive environmental, social, and governance (ESG) outcomes. The article highlights the key principles and strategies of sustainable finance along with the benefits and challenges. Furthermore, the article delves into the linkage between SDGs outlined by UN and Sustainable Finance.*

### **Introduction**

Sustainable finance encompasses investment decisions that consider the environmental, social, and governance (ESG) aspects of an economic activity or project. Sustainable finance is an approach of managing money and investments that takes into account the impact on the environment, society, and good governance. It goes beyond simply making profits and considers the long-term well-being of people and the planet. Sustainable finance aims to direct money towards activities and businesses that promote things like renewable energy, social equality, and responsible business practices. By investing in sustainable finance, individuals and institutions can support positive change and contribute to building a better and more sustainable future for everyone. By providing a structured approach to financial activities, sustainable finance frameworks ensure investment and financing choices are in line with sustainable development goals. The advancement of sustainable finance is also supported by initiatives like the Principles for Responsible Investment (PRI) and the Task Force on Climate-related Financial Disclosures (TCFD). The PRI is a global network of investors committed to incorporating ESG factors into their investment decision-making processes.

Huge displays advertising the importance India’s government places on hosting the G20 this year can be seen all throughout the country. The G20 tagline for India, “One Earth, One Family, One Future,” symbolises the country’s firm commitment to sustainability during its leadership. Additionally, the message is in line with the nation’s strategic goal of luring trillions of dollars’ worth of investment into India’s infrastructure, as well as its advancement in technology and human development. Assuring clean water, air, and energy, creating true resilience to escalating climate shocks, and speeding up the delivery of net zero will need to be at the core of this investment surge for it to succeed. Beyond these and other traditional green concerns, however, sustainable finance in India is emerging as a requirement that is intensely centred on people.

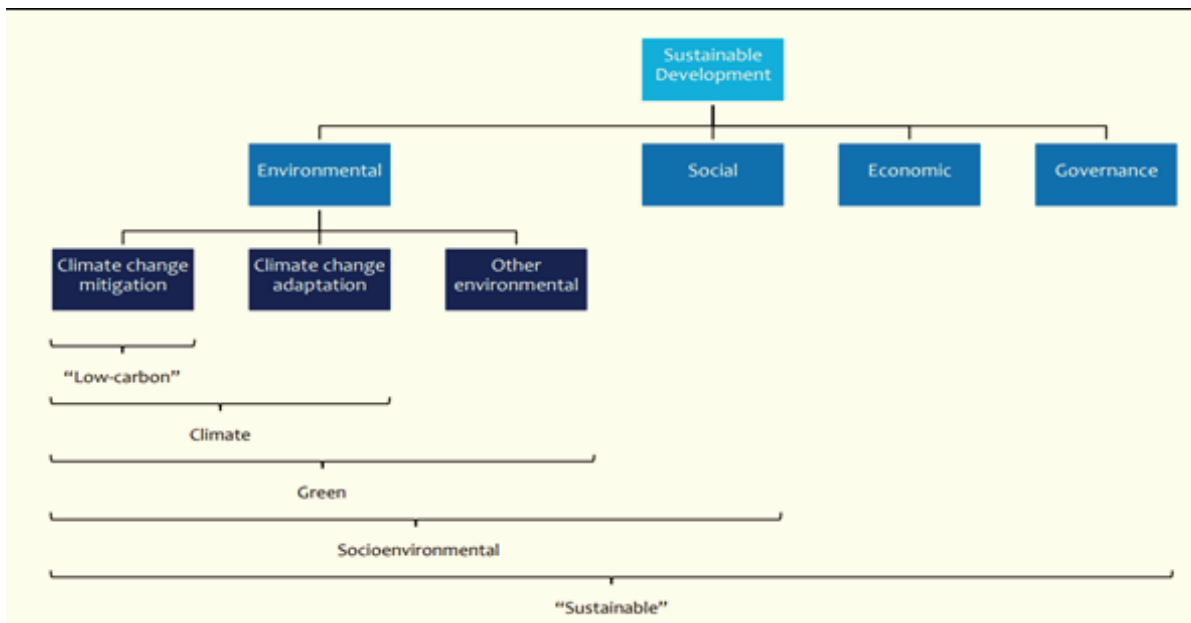
The ability to produce, evaluate, and exchange financial assets in a way that prioritises the

development of real wealth and satisfies the long-term needs of an inclusive and environmentally sustainable economy defines a sustainable financial system.

A mapping of related terminology revealed broad agreement in the variations between “sustainable,” “green,” and “climate” finance, despite the fact that sustainable investment classifications are not mutually-exclusive.

The term “sustainable finance” is acknowledged as being the most all-encompassing because it covers social, environmental, and economic factors. Whereas “green financing” in its simplest form, is an investment or loan that supports environmentally friendly activities, like the acquisition of eco-friendly products and services or the development of green infrastructure. According to world bank group despite the fact that there is currently no internationally agreed-upon definition of “climate financing” the phrase is generally used to describe resources that encourage low-carbon and climate resilient development.

**Fig. 1 Understanding Sustainable Finance Terminology**



Source: UNEP (2016).

In order to promote the growth of a more sustainable economy, sustainable finance refers to the financing of investments across all sectors of finance and asset classes that incorporate environmental, social, and governance (ESG) factors into investment decisions and include sustainability into risk management. ESG data is now more frequently used by different actors along the investing value chain in their reporting procedures.

**Environmental** issues, such as the protection of biodiversity, reduction of carbon emission, pollution avoidance are the pivotal areas, and the circular economy, may also be taken into account, along with climate change management and adaptation. The term **social** considerations can be used to describe issues with inequality, inclusivity, labour relations, investments in communities and human capital, as well as human rights issues. A key factor in ensuring the incorporation of social and environmental factors in the decision-making process is the **governance** of public and commercial institutions, which includes management structures, employee relations, and CEO compensation.

### Positive and Negative Sustainable Finance

Positive sustainable finance refers to investments and financial activities that actively contribute to environmental and social benefits while generating financial returns. It focuses on funding projects, businesses, and initiatives that promote sustainability, resilience, and positive societal impact. Positive sustainable finance includes:

- Investments in Renewable Energy
- Sustainable Infrastructure Financing
- Social Impact Investing
- Conservation and Biodiversity Initiatives

Negative sustainable finance refers to activities that avoid or divest from investments that have harmful environmental or social impacts. It involves excluding or reducing exposure to sectors and companies that contribute to negative outcomes, such as fossil fuel extraction, tobacco production, weapons manufacturing, and companies with poor labour practices. Negative sustainable finance includes:

- Fossil Fuel Divestment
- Tobacco and Alcohol Avoidance
- Weapons and Defence Industry Exclusion
- Controversial Industries

By incorporating both positive and negative sustainable finance approaches, investors and financial institutions can align their investments with their values and contribute to a more sustainable and responsible global economy.

**Linkage between United Nations (UN) Sustainable Development Goals (SDGs) and sustainable finance.**

The United Nations Sustainable Development Goals (SDGs) and sustainable finance are intrinsically connected as they both aim to promote a sustainable and inclusive future.

**Fig. 2: United Nations (UN) Sustainable Development Goals (SDGs)**



Source: <https://sdgs.un.org/>

The SDGs provide a comprehensive framework of 17 goals and 169 targets to address the world's



most pressing social, economic, and environmental challenges by 2030. Sustainable finance, on the other hand, is a financial approach that considers environmental, social, and governance (ESG) factors in investment decisions and supports projects aligned with sustainable development objectives.

The connection between the SDGs and sustainable finance can be seen in the following ways:

**Goal Alignment:** Sustainable finance seeks to direct financial resources towards activities that contribute to the achievement of the SDGs. It helps bridge the funding gap required to implement projects and initiatives aligned with the SDGs, such as renewable energy infrastructure, affordable housing, clean water access, and sustainable agriculture. By channelling capital towards these areas, sustainable finance accelerates progress towards the SDGs.

**Impact Measurement:** Sustainable finance emphasizes the measurement and reporting of environmental and social impact. Investors and financial institutions assess the contribution of their investments to specific SDGs, allowing for the monitoring and evaluation of progress. This measurement provides transparency and accountability, ensuring that investments genuinely contribute to the desired sustainable outcomes.

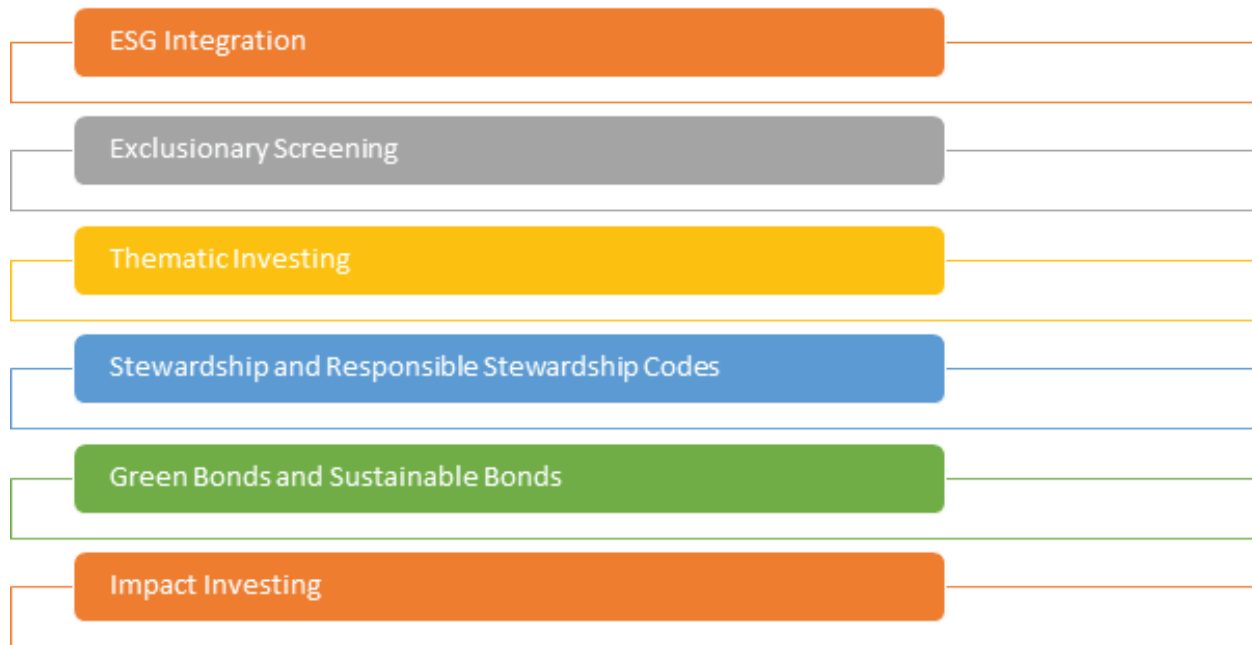
**Risk Management:** The SDGs address various risks, including climate change, resource scarcity, inequality, and social unrest. Sustainable finance incorporates ESG factors into investment decision-making processes, allowing investors to identify and manage these risks effectively. By considering the impact of investments on environmental and social factors, sustainable finance mitigates potential risks and builds resilience in the face of emerging challenges.

**Collaboration and Partnerships:** Achieving the SDGs requires collaboration between governments, businesses, civil society, and financial institutions. Sustainable finance promotes partnerships and engagement among these stakeholders. Investors and financial institutions collaborate with governments and other actors to design and implement financial instruments and policies that support sustainable development. By working together, they leverage their resources and expertise to address the complex challenges outlined in the SDGs.

**Innovation and Technology:** Sustainable finance encourages innovation and the deployment of new technologies to achieve the SDGs. It supports investments in clean energy, sustainable transportation, circular economy solutions, and other transformative initiatives. Sustainable finance acts as a catalyst for innovation, driving the development and scaling up of technologies that can help achieve the SDGs more efficiently and effectively.

Sustainable finance and the SDGs are closely intertwined. Sustainable finance provides the necessary financial mechanisms and resources to drive progress towards the SDGs, while the SDGs offer a framework for sustainable finance to align its investments and impact measurement. Together, they create a powerful synergy that enables the mobilization of capital and resources towards building a more sustainable and inclusive future.

### **Sustainable Finance Strategies**



**ESG Integration:** This strategy involves systematically incorporating ESG factors into traditional investment analysis.

**Exclusionary Screening:** Exclusionary screening involves excluding certain industries or companies from investment portfolios based on specific ESG criteria.

**Thematic Investing:** Thematic investing focuses on specific sustainability themes or trends. Investors allocate capital to companies that contribute to these themes, such as renewable energy, water management, clean technology, or social impact initiatives.

**Stewardship and Responsible Stewardship Codes:** Stewardship refers to the responsible management and oversight of investments to protect and enhance long-term value.

**Green Bonds and Sustainable Bonds:** Green bonds are fixed-income financial instruments issued to raise funds for environmentally beneficial projects.

**Impact Investing:** Impact investing aims to generate measurable social and environmental impact alongside financial returns.

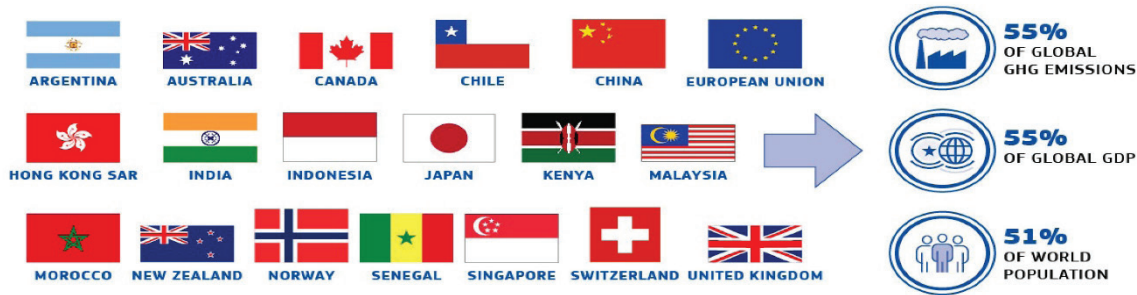
### **International platform on Sustainable Finance**

IPSF is platform for knowledge sharing and dissemination to promote the finest environmentally sustainable financial practises.

The IPSF provides a global venue for discussion amongst decision-makers who are in charge of creating regulatory measures for sustainable finance in order to assist investors in identifying and pursuing sustainable ventures that genuinely advance climate and environmental goals. Members of the IPSF can share knowledge and promote best practises by contrasting their various projects, identifying possibilities and challenges for sustainable financing, and respecting local and national contexts.



Fig 4. Members of IPSF



Source: <https://finance.ec.europa.eu/>

### Benefits of Sustainable Finance

Here are some key advantages of adopting sustainable finance practices.

- Risk Mitigation
- Long-Term Value Creation
- Positive Environmental Impact
- Social and Community Benefits
- Enhanced Corporate Governance
- Investor Demand and Reputation
- Regulatory and Policy Support

### Challenges in Sustainable Finance

**Lack of Standardization:** The absence of globally accepted standards and definitions for sustainable finance creates ambiguity and inconsistency in measuring and reporting sustainability metrics.

**Data Availability and Quality:** Access to reliable and comprehensive data on ESG factors is crucial for informed investment decisions. However, there is a lack of consistent, accurate, and comparable data, particularly in emerging markets and smaller companies.

**Pricing and Financial Returns:** Some investors express concerns about the financial performance and risk-adjusted returns of sustainable investments. They worry that integrating ESG criteria may lead to lower returns or limited investment opportunities.

**Greenwashing and Impact Integrity:** Greenwashing refers to the practice of misleadingly presenting investments as more sustainable than they actually are. The lack of standardized reporting and verification mechanisms can make it difficult to assess the true environmental and social impact of investments.

**Policy and Regulatory Environment:** A supportive policy and regulatory environment is crucial to foster sustainable finance.

**Capacity Building and Awareness:** There is a need to enhance knowledge and awareness among investors, financial institutions, and regulators regarding sustainable finance.



## Conclusion

In conclusion, sustainable finance offers a range of strategies and tools for investors to align their investments with purpose and contribute to a sustainable and inclusive future. Responsible investing, impact investing, green bonds, and sustainable bonds are just a few examples of the approaches available. As the field of sustainable finance continues to evolve, it presents exciting opportunities for investors to make a positive impact while generating financial returns. By harnessing the potential of sustainable finance, investors can play a crucial role in addressing global challenges and shaping a more sustainable and resilient world.

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## **ROLE OF REGULATORS AND REGULATIONS OF INDIA IN ESG ECOSYSTEM**

### **Abstract:**

*ESG Reporting can be regarded as an improvement over the traditional financial reporting. ESG reporting has been emerged as a better option thanks to the limitations of Financial reporting .Important Non-Financial reporting forms like Board's Report, Corporate Social Responsibility Report and Corporate Sustainability Reporting are the disguised forms of ESG Reporting in the Indian Context and Corporate area .Non-Financial Reporting as per the companies act 2013 and Companies (Amended Act 2020) of India is an important medium for communicating their ESG concerns to the stakeholders. Major financial regulators of India are playing their lead role in the ESG ecosystem in India. Sustainability Reporting and Integrated Reporting are the needs of the hour. Therefore the researcher has examined various Indian regulations which demand ESG Reporting to stakeholders. Information in the form of secondary data has been collected from various sources and analysed their impact in the corporate and social sector of India.*

**Key Words:** ESG Reporting, Financial reporting, Non-Financial reporting, Sustainability Reporting, Integrated Reporting.

### **Introduction**

Corporate Social Responsibility Report as per section 134(3) (o) of the Indian Companies Act can be regarded as a minor version of ESG Reporting in India. Dow-Jones Sustainability Index and Other globally recognized Indexes give weighting to Economic, Environment and Social criteria (The institute of Company Secretaries of India, n. d.)<sup>1</sup> .Regulations are one of the important key drivers of sustainability reporting. Both Financial and Non-Financial regulators play significant roles in the ESG Ecosystem of India.

### **Role of Regulators and Regulations of India in the ESG reporting.**

Following Indian regulators demand Integrating Reporting (Combining both Financial and Non-Financial reporting) in the corporate sector. BRSR (Business Responsibility and Sustainability report) prescribed by SEBI is one of the typical Integrating Reporting in India.

- a. SEBI
- b. MCA
- c. ICAI
- d. ICMAI
- e. ICSI



f. Ministry of Environment, Forest and Climate change.

Indian regulators have issued various circulars and notices to help the stakeholders especially the investors to get ESG Index in their reachable area. They can deconstruct ESG Matrix and thereby take suitable decisions as per the situation. (The institute of Company Secretaries of India, n. d.)<sup>2</sup>

**Following are the important Regulations which stand for both the financial, non-financial reporting and sustainability concerns in the Indian ESG Ecosystem.**

**I. Companies Act 2013.(Taxmann,2023,p,xx)3**

Following are the important sections in the Companies Act which demands ESG ecosystem

**A. Sec 8**

As per section 8 of the Companies Act 2013, a company can registered with charitable and social objects and there by enjoy special privileges

**B. Sec 13**

Section 13 of the companies act deals with Alteration of memorandum. Alteration of Object clause is very difficult as per sec 13(8) of the act.

**C. Sec 26**

As per the said section every prospectus shall include such information which are necessary for an investor to understand about the corporate governance of the issuer company.

**D. Sec 30**

Manner of advertisement of prospectus is prescribed in sec 30 of the act.

**E. Sec 34. Criminal liability for mis-statement in prospectus**

Transparency is required in the issue of prospectus. Otherwise; both civil liability and criminal liability will be the end result.

**F. Sec 47. Voting Rights.**

Every member can exercise their vote on every resolution placed before the company.

**G. Sec 71. Debentures**

Appointment of Debenture Trustees and their powers and functions is a significant step in the corporate governance framework of India.

**H. Sec 92. Annual Return**

Every company shall prepare an annual return containing both financial and non-financial information at the end of the financial year. Filing of annual return is compulsory.

**I. Sec 96. Annual general meeting.**

Every member can express their own views about different aspects of the company in the Annual general meeting.

**J. Sec 125. Investors Education and Protection Fund**

Companies Act 2013 gives special significance to the Investor education.

**K. Sec 133**



As per sec 133 of the Indian companies act central government prescribes accounting standards in the case of certain companies.

**L. Sec 134 and Sec 135**

Board's report as per Sec 134 and Corporate Social Responsibility Report as per sec 135 are important forms of non-financial and sustainability reports in the Indian corporate sector.

**M. Sec 138 and Sec 139**

Through the internal audit as per sec 138 and the appointment of auditors as per Sec 139 ensures financial compliance in the financial reporting ecosystem.

**N. Sec 150 and Sec 152**

Appointment of Independent directors, who are not related with the company in any way, and appointment of directors by the shareholders will ensure transparency and complete disclosure about various transactions of the company.

**O. Sec 177**

Audit committee (including Independent Directors) as per sec 177 has to recommend auditors with requisite qualifications. Besides they have to examine the financial statements and give approval of related party transactions.

**P. Sec 206 empowers the registrar of the companies to call for information inspect books and conduct inquiries.**

**Q. Sec 241 and Sec 248**

Oppression and mismanagement is not allowed in the Indian scenario.

**II. SEBI Circulars**

SBI Circular states that w.e.f the financial year 2022-2023, filing of BRSR shall be mandatory for the top 1000 listed companies (by market capitalization) and shall replace the existing BRR

Following are the disclosures as per the Business Responsibility & Sustainability Report Framework

- a. General Disclosures about the company
- b. Management and Process Disclosures
- c. Principle wise Performance Disclosures

**III. Indian Income Tax Act 1961 and Carbon Credit Trading**

With the implementation of Sec 115 BBG of the income Tax Act, Carbon trading is possible in India.

**IV. Labour Codes: A significant Reform measure in the ESG Ecosystem in India.**

Labour Codes can play a significant role in the employee-employer relationship process in India.

**India's Present position in the Global Human Development Index**

The following table shows that India's position is 132 in the Global Human Development Index. Still Rankings can be improved with an effective educational and labour reforms.

Following are the Four Labour Codes passed by the Parliament of India.





1. **Social Security Code 2020.**
2. **The Industrial Relations Code 2020.**
3. **Occupational Safety, Health and Working Conditions Code 2020.**
4. **The code of Wages 2019**

### **Social Security Code 2020**

Following are the important features of the Social Security Code 2020.

1. Following are the important laws which become inoperative when the code is being fully implemented
  - a. The employees' provident fund and miscellaneous provisions act 1952
  - b. Employees state insurance Act 1948.
  - c. Payment of Gratuity Act 1972.
  - d. The Maternity Benefit Act 1961.
  - e. The workmen's Compensation Act 1923.
  - f. The Building and Other Construction Act 1996.
  - g. The Cine workers Welfare Fund Act 1981.
  - h. The Organized Workers Social Security Act 2008.
  - i. The Employees Exchange Compulsory Notification of Vacancies Act 1959.
2. The code provides social security to the employees of organized and unorganized sector.
3. It recognizes the inter-state employee as Contract Labour.
4. If 10 or more employees are employed in an organization, then that organization will come under the ambit of Employees State Insurance Act.
5. Companies can use CSR Fund for the welfare of the employees of unorganized sector.
6. Social security to all is the moto of the code.
7. Even plantation workers will get Social security under the code.
8. Working conditions should be improved as per the provisions of the code.
9. Self Employed workers also get pension as per the provisions of the code.

### **The Industrial Relations Code 2020.**

Following are the features of the Industrial Relations Code 2020.

1. The code try to amend in the laws related with Trade union, working environment and industrial disputes.
2. Following are the important laws which are become inoperative when the code is being fully implemented.
  - a. The industrial Dispute Act 1947.
  - b. The Trade Unions Act 1926.
  - c. The Industrial Employment Standing Orders Act 1946.
3. The code aims at dispute free India.



4. Workers will get benefited as per Atal Bimit Vyakti Kalyan Yojna in certain exceptional circumstances.

### **Occupational Safety, Health and Working Conditions Code 2020.**

Following are the features of the Occupational Safety, Health and Working Conditions Code 2020.

1. It recognizes the inter-state employee as Contract Labour.
2. Yearly Journey Allowance should be given to the inter-state employees
3. Maximum Working time is Eight hours
4. Following are the important laws which are become inoperative when the code is being fully implemented.
  - a. The Contract Labour (Regulation and Abolition) Act 1970
  - b. Factory Act of 1948
  - c. Mines Act of 1952
  - d. Dock Workers (Safety, Health and Welfare) Act 1986
  - e. Inter-State Emigration workers Act pf 1979
  - f. Mortor transport workers Act of 1961
  - g. Plantations Labour Act of 1951
  - h. Beedi and Cigar Workers (Condition of Empolyment.) Act of 1966.
  - i. Working Journalist and other Newspaper Employees and Miscellaneous Provisions Act 1955
5. Many new facilities including one nation one card to the migrant workers is ensured as per the provisions of the code. (“New Labour Code for New India,”n.d)<sup>4</sup>
6. Women Empowerment and increased welfare measures to the women employees are the other attractions of the code.

### **The code of Wages 2019**

#### **Present statues of Implemenation of Labour Codes in India.**

Labour Codes have been passed by the Centre Government .Whereas to implement them, appropriate rules have been made.Rules made under the Codes have been entrusted to Central Government, State Government and at appropriate level. There is a requirement for pre-publication of Rules in their official Gazettes for public consultation .The present status is as follows.

**Table No.1: Present Status of pre-publication of Rules**

<b>Name of Codes</b>	<b>Name of States which have pre-published the draft Rules</b>
The code on Wages 2019	31 states
The Industrial Relations Code, 2020	28 states
The Code on Social Security, 2020	28 states
The Occupational Safety Health and working Conditions Code, 2020	26 states

(Source: <https://www.indiabudget.gov.in/economicsurvey/page number 153>)<sup>5</sup>.

Besides the above acts and regulations, following statues also demand environmental management



and pollution control. Government of India has established a separate ministry for the above purpose. Ministry of Environment, Forest and Climate Change of India administers those statutes.

1. The water (Prevention and Control of Pollution) Act 1974
2. The Air (Prevention and Control of Pollution) Act, 1981
3. The Environment (Protection) Act, 1986
4. National Environment Appellate Authority Act, 1997
5. The Prevention of Cruelty to Animals Act, 1960
6. Wild Life (Protection) Act, 1972
7. Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006
8. Forest Conservative Act, 1980
9. Indian Forest Act, 1927
10. Biological Diversity Act, 2002.

### Conclusion

Government encouragement is one of the important challenge in preparing sustainability reports .But in India, SEBI framework of Business Responsibility Report is a base for sustainability reporting .Many Indian firms are signatories of UN-principles for Responsible Investment group. Integrated reporting is the need of the hour .India can lead other nations in that way thanks to new initiatives of regulators especially SEBI in that area .

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9. *<https://www.unpri.org/about-us/about-the-pri>*



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## GREEN FINANCE: HARNESSING ECONOMIC MECHANISMS FOR SUSTAINABLE GLOBAL DEVELOPMENT

### Abstract

*This paper explores the critical role of green finance in mitigating the climate crisis and fostering a sustainable global economy. It provides a comprehensive analysis of the necessity, history, mechanics, challenges, and impacts of green finance, supplemented with relevant case studies. The discussion underscores green finance's potential to revolutionize diverse sectors and contribute to environmental conservation, social equity, and economic growth. The paper concludes with an optimistic outlook for the future of green finance, while acknowledging the challenges that need to be addressed for its successful implementation.*

### Introduction

Green finance represents a paradigm shift in economic thinking, embodying the fusion of environmental consciousness with financial endeavors. As per the United Nations Environment Programme (UNEP), green finance refers to “any structured financial activity that has been created to ensure a better environmental outcome” (UNEP, 2018, p. 3). This inclusive definition allows for a diverse range of initiatives and innovations to fall under the umbrella of green finance, such as green bonds, green mortgages, green funds, and sustainable project financing.

The significance of green finance cannot be overstated. Amid the ongoing climate crisis, traditional finance methods have been identified as both a cause and potential solution to environmental degradation (World Bank, 2020). Green finance provides a way to redirect vast streams of capital towards environmentally friendly projects, thereby catalyzing the transition towards a sustainable global economy.

The objective of this paper is three-fold: to examine why green finance is critical, to chart its historical progression, and to shed light on the mechanics of green finance. It will also explore the challenges faced in implementing green finance and its far-reaching impacts, supplemented with case studies illustrating its practical application. In doing so, it hopes to underscore the transformative potential of green finance.

### The Necessity of Green Finance

The ever-intensifying climate crisis has underscored the pressing need for transitioning towards a sustainable global economy. The Intergovernmental Panel on Climate Change (IPCC) has underscored that maintaining global warming below 1.5°C necessitates unprecedented transformations in all sectors of the economy (IPCC, 2018). Green finance forms a cornerstone of this economic transformation.



The global economy is deeply entrenched in high-carbon, non-renewable systems. Shifting away from this paradigm necessitates vast amounts of capital – a magnitude of trillions of dollars, according to the Organisation for Economic Co-operation and Development (Yadav et al., 2023). Traditional finance mechanisms are inadequate for meeting this demand, and green finance has emerged as an effective means of filling this financial gap. Green finance, with its emphasis on long-term sustainability over short-term gains, is essential for driving the transition towards a low-carbon economy. It holds the potential to revolutionize sectors ranging from energy to construction, transportation to agriculture, and beyond (McKinsey & Company, 2020).

Green finance and sustainable development are inextricably linked. The principles of sustainable development require that the needs of the present are met without compromising the ability of future generations to meet their own needs (Brundtland, 1987). Green finance facilitates this by funneling investments towards projects that align with these principles, promoting economic growth while ensuring environmental sustainability. The United Nations' Sustainable Development Goals (SDGs) explicitly recognize the importance of sustainable financing in achieving these targets (United Nations, 2015).

### **Historical Overview of Green Finance**

Green finance, while a relatively modern term, has its roots in the late 20th century with the emergence of the sustainable development paradigm. Early instances of such endeavors include the formation of the first “green” banks in the 1980s, entities that prioritized environmental and social returns alongside financial ones (Scholtens, 2006).

The progression of green finance has been punctuated by several key milestones. The introduction of the first green bond by the European Investment Bank in 2007, colloquially termed as the ‘Climate Awareness Bond’, marked a significant advancement (Arencibia, 2018). This was followed by the formation of the Green Bond Principles in 2014, a collaborative effort to standardize the growing market (ICMA, 2014). The Paris Agreement in 2015 further bolstered green finance by emphasizing the need for a financial flow consistent with a pathway towards low greenhouse gas emissions and climate-resilient development (UNFCCC, 2015).

Presently, green finance is a rapidly evolving field. According to a report by BloombergNEF, the global issuance of sustainable debt hit a record of \$732 billion in 2021, up 29% from the previous year (BloombergNEF, 2022). The EU Taxonomy for sustainable activities, and China’s push towards a national green finance system illustrate the growing institutional commitment towards green finance (EU, 2020; People’s Bank of China, 2022). Despite these advances, the need for green finance is far from satiated, and the coming years will likely see more innovations and refinements in this realm.

### **The Mechanics of Green Finance**

Green finance operates on several foundational elements. Firstly, it places significant emphasis on risk management - particularly the evaluation and mitigation of environmental, social, and governance (ESG) risks (Schoenmaker&Schramade, 2019). Secondly, transparency and disclosure are critical, especially concerning the use of proceeds and project impacts. This element addresses the ‘greenwashing’ concerns, ensuring that the projects financed genuinely contribute to environmental sustainability (Spinaci, 2021). Lastly, green finance is marked by innovation in financial instruments and models designed to channel funds towards sustainable projects.

Green finance instruments are varied and continually evolving. Green bonds, perhaps the most well-known instrument, are issued to fund projects that have positive environmental or climate benefits.





Green loans, where proceeds are allocated towards green projects, are another example (The International Capital Market Association, 2021). Environmental impact bonds, which link financial returns to environmental outcomes, represent a more recent innovation (World Bank, 2020). At the institutional level, green banking involves integrating sustainability into a bank's operations and business strategy, offering services such as green mortgages and loans (Jeucken, 2010).

Green finance has found applications in various sectors. In the energy sector, it plays a pivotal role in supporting the transition to renewable sources, with investments in wind, solar, and hydroelectric projects (OECD, 2017). Green finance has also been instrumental in sectors like transportation, promoting electric vehicles, and sustainable public transportation systems (McKerracher, 2018). In construction, green finance aids the development of energy-efficient buildings and sustainable infrastructure (World Green Building Council, 2019). The agriculture sector has also seen the influence of green finance through sustainable farming practices and technologies that enhance resilience to climate change (Food and Agriculture Organization of the United Nations, 2020).

### Challenges in Implementing Green Finance

Regulatory challenges pose significant obstacles to the implementation of green finance. A fundamental issue is the lack of a universal definition for what constitutes 'green', leading to inconsistencies in the classification of green financial products across different regions and sectors (Ehlers & Packer, 2017). Furthermore, the absence of stringent regulations can lead to 'greenwashing', where projects or products are misleadingly labeled as environmentally friendly (Kell, 2018). The implementation of green finance also grapples with regulatory issues related to disclosure and transparency, risk assessment, and alignment with international standards (Financial Stability Board, 2020).

Market-related challenges are equally formidable. These include a lack of awareness and understanding of green finance among investors and financial institutions, hindering the efficient allocation of capital (Aizawa & Yang, 2010). There's also the perceived risk of green investments, as they often involve new technologies and markets that are seen as uncertain or volatile (Zerbib, 2019). In addition, there's a general lack of standardized, reliable, and relevant ESG data, making it difficult for investors to accurately assess the sustainability and impact of their investments (Schoenmaker & Schramade, 2019).

Lastly, green finance faces several social and behavioral challenges. Despite the growing awareness of climate change, a disconnect persists between individual behaviors and the collective actions needed to achieve sustainability (Gifford, 2011). Consumers and investors may be unwilling to sacrifice immediate gains for long-term environmental benefits, a phenomenon known as temporal discounting (Hardisty & Weber, 2009). Changing these deeply entrenched behaviors and mindsets is a complex process that requires significant effort at both individual and institutional levels.

### Impact of Green Finance

Green finance makes substantial contributions to economies globally. By facilitating investment into environmentally-friendly industries, green finance fosters innovation and drives employment in these sectors (Li et al., 2022). At the macro level, green finance helps redirect capital towards sustainable development, reducing the systemic risk associated with climate change and enhancing long-term economic resilience (OECD, 2017). Furthermore, the transitioning towards a low-carbon economy, underpinned by green finance, could stimulate economic growth and create new market opportunities (Nordhaus, 2013).

Green finance has an immediate and substantial effect on environmental conservation and climate



change mitigation. By supporting projects that aim to reduce greenhouse gas emissions and improve resilience to climate change, green finance plays a significant role in the global efforts to limit global warming (Buchner et al., 2016). Beyond climate, green finance supports projects focused on biodiversity conservation, sustainable agriculture, and water management, contributing to healthier ecosystems and preserving vital natural resources for future generations (EIB, 2018).

On a social level, green finance can make significant strides towards achieving equity and improving living standards. By aligning financial flows with the Sustainable Development Goals (SDGs), green finance can potentially impact a range of social issues, from poverty reduction to education and health improvements (UN, 2015). Moreover, green finance can help address energy poverty through funding renewable energy projects, thereby extending energy access to underserved regions and communities (Bhattacharya et al., 2016). Thus, green finance can be a vital tool in driving social progress and creating more inclusive societies.

### **Case Studies**

One of the most impactful examples of successful implementation of green finance is the European Investment Bank's (EIB) efforts to finance climate action. EIB has been a leader in green finance, issuing the world's first green bond, called a Climate Awareness Bond, in 2007. Since then, EIB has raised over €30 billion in 13 currencies for projects combating climate change (EIB, 2021).

The funds raised have been directed towards projects with climate action goals in sectors such as renewable energy, energy efficiency, and water management. For example, EIB financed the Arkona offshore wind farm in Germany, which produces renewable energy equivalent to the consumption of 400,000 households while reducing CO<sub>2</sub> emissions by 1.2 million tons per year (EIB, 2018).

Key lessons can be derived from the successful implementation of green finance initiatives. First, standardization and transparency are critical. The EIB's green bonds were successful due, in part, to their strict project selection criteria and regular reporting, fostering investor confidence (Kidney et al., 2018). Second, collaboration between public and private sectors can leverage greater resources and impact (Clark et al., 2018). EIB's initiative demonstrates that public entities can act as catalysts for green finance, mobilizing private capital towards sustainable projects.

Furthermore, overcoming challenges such as greenwashing and the gap in environmental data is crucial. This emphasizes the importance of stringent regulatory oversight and standards in promoting genuine green finance and fostering investor trust (OECD, 2020).

### **Conclusion and Future Perspectives**

The essential role of green finance in contemporary economic and environmental contexts is undoubtable. It not only fosters economic progression and innovation but also makes significant contributions towards mitigating climate change and achieving sustainable development goals (Mazur, 2020; Buchner et al., 2015). Its implications transcend the boundaries of economy and environment to impact various social aspects, including poverty reduction, improved living standards, and promoting social equity (UN, 2015).

Green finance is poised to play an even more crucial role in the future as the world accelerates its transition towards a low-carbon economy. The growth in green finance will likely be driven by increased environmental consciousness among investors, further policy support, and improved transparency and standardization in green finance markets (OECD, 2020). These will potentially result in an unprecedented inflow of capital into green industries, furthering their growth and influence (Clark et al., 2018).



Despite the promising prospects, the challenges to green finance – such as the need for stringent regulatory oversight, the risk of greenwashing, and bridging the environmental data gap – should not be underestimated (OECD, 2020). However, as we’ve seen, these challenges can be managed through collaboration between various stakeholders, including policymakers, financial institutions, and investors. Thus, the development and successful implementation of green finance strategies stand as a testament to humanity’s potential to harness economic mechanisms in the pursuit of a sustainable future.

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## **UNLOCKING SUSTAINABILITY – ESG DRIVEN MECHANISM OF NEW WORLD**

### **Abstract**

*The Environment, Social Governance (ESG) is an important humane effort to protect the universe with respect to Climatic, Environmental and social changes. Initiatives are drawn from UNFCCC conventions declaring certain mandatory provisions are adhered by all countries. Impact analysis arising out of disasters, pandemics due to disturbance to earth, environment and nature (climatic conditions). The corporates should embrace ESG as strategic business imperative taking shelter for their profitability and development.*

### **📁👤 EVOLUTION AND IMPORTANCE OF ESG**

The thought provoking initiative across the world starts with UNFCCC (Paris) agreement wherein the countries committed to “making finance flows consistent with a pathway towards low greenhouse and climate-resilient development.” Environmental, social and governance (ESG) criteria or risks which are increasingly a creative modern approach for investors in the recent times to evaluate companies in which they are interested. To meet global priorities adduces the need and importance of sustainability and development. The total investment requirement of our country for setting up projects for climate mitigation between 2020 to 2033 will be around USD 1.6 Tn.

The Environmental, Social and Governance (ESG) factors assess a company based on the quantum of investments where initiatives and synergy that investors look at a broad range of expectations. There are factors to help investors to assess the companies that might pose a greater financial risk due to their environmental or other related practices. ESG parameters have predictive power to add additional information to perform an efficient risk management analysis. The social economy has proven to be a pioneer in identifying and implementing social innovations and alternative ways of organising economic activities..

### **ESG based Sustainable and Responsible Investment**

The rulers or the countries with wider scope for development are socially committed to protect the socio-economic rights from exploitation and eliminate socially responsible investing in sustainable projects. The funding on climatic factors and Sustainable and Responsible Investment (SRI) are finding solutions to overlapping issues with different approaches. Viz.

- Safeguarding natural wealth and services to humanity
- Steering capital towards climate goals,
- Global perspectives on Natural resource degradation and fossil fuel resilience



- ESG investing and corporate engagement and advocacy.
- Analysing the drivers on ESG integration with sustainable investing.

It will have a significant impact on funding and investments grouped under ESG and socially responsible investing. They are working to find out the ways to remove explicit references to environmental, social, and governance (ESG) factors.

## **EXPLORATION AND DEVELOPMENT OF ESG**

ESG investing is to exploring projects for development or vice versa. In other words, these investment projects having the objects of sustainability, social-responsibility, Impact-driven investing, These factors work to assess a company based on the initiatives and synergy that investors look at a broad range of expectations. ESG risks are measured to help investors to find companies with values that match their expectation synchronise with global practices. Social economy organisations also have the potential to expand social innovation to address pressing environmental and societal challenges. The logistics of focusing on social impact and working with all stakeholders in collaborative ways that promote the use of new practices with technological advancement. Implementation methodology with legal frameworks are needed to achieve social experimentation and collaboration.

### **Environment Criteria**

The factors include global warming, treatment of e-wastes, carbon emission, pollution hazards and human-made disturbances in the environment are mainly used in evaluating environmental risks a company might face and how the company is managing those risks. Environment criteria pertain to protection and control activities of companies which include their energy use, waste, pollution, natural resource conservation, and treatment of animals. ESG is supported by the vibrant policies of corporates and also the laws of the land in treating each and every aspect of environmental disturbances. The clean development mechanism attributes to national importance in compliance with environmental regulations. The agriculture being the mainstay for sustainable growth, it is essential to accelerate greater climate action by transitioning with efficient technologies, alternative energy sources to achieve sustainable development.

### **Social Criteria**

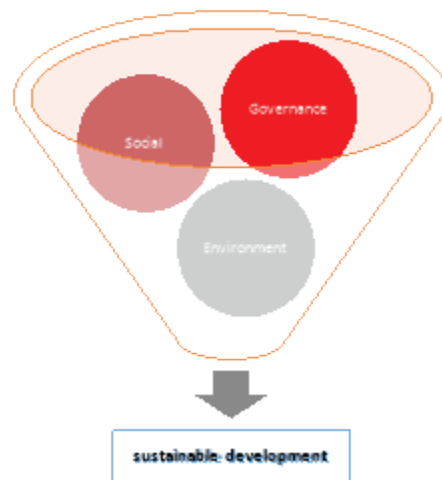
The expectations of clean governance refers to social criteria in dynamic business relationships with prospective investing opportunities for the company. The social consciousness in dealing with the hazards affecting people and comes out with a solution is highly important. The companies donate a percentage of its profits to the local community or encourage volunteers to perform social activities. The stakeholders are interested in the philosophy of the commitment by organizations to social obligations expected to get support for their products and services.

The “social economy” has played an important role in addressing and mitigating the short- and long-term impacts during pandemic crisis on economy and society. The governments and the corporates particularly in the healthcare, pharma, hospitals, banking, insurance and other sectors played a responsible role in combating the pandemic brought more concern to the future of the mankind and earth. The OECD guidelines provide for the social economy develop strategies and play a larger role in the post-pandemic phase to inspire transformation to a more inclusive and sustainable economy and society.

### **Governance Criteria**

The Governance aspect deals with a company's leadership, executive action on ESG factors, through audits, internal controls, and to protect shareholder rights. The priorities of ESG criteria practised by companies on which the investment firms decide based on transparency, disclosure and performance. The governance criteria in which investors wanted the company to adhere the compliance norms in addition to the socio-economic, cultural and environmental requirements. The criteria is to install good system of compliance and corporate governance by analysing issues facing different sectors and industries. A good governance with a strong long term performance establish position the companies to attract prospective investors across the world.

The impact created by a company donating a percentage of its profits to the local community and to fulfil ESG criteria provide for a set of standards for operations that socially conscious investors use to screen potential investments based on the performance as a steward of nature. A good governance with a rigid long term performance position the companies under ESG criteria for a sustainable development attract prospective investors across the world. This is crucial to the future of the emerging markets.



### TREATMENT OF ESG RISK FACTORS IN INDIA.

It starts from integration of a project conceptualization to financing which impacted across value chain. Sustainable investment development facing the challenges on ESG rollout when the investors willing to reduce return expectations to incentivise its implementation. ESG infrastructure investments were considered as a revolution of challenges and alternatives which has overcome by good corporate governance for Environment and Society. The entire exercise is customised by Environmental Impact Assessment (EIA) which is a process of evaluating the likely environmental impacts of a proposed project or development, taking into account inter-related socio-economic, cultural and human-health aspects, beneficial to the individual and the country.

The latest development shows many ESG projects were being managed effectively by application of suitable funding methods. These funds are created for a specific purpose or objective based on environment impact assessment. Similarly another aspect, disaster management is how to deal with the human, social, economic or environmental impacts of disaster. The natural disasters or human- origin disaster may cause huge damage to the ESG criteria. Disaster management is the process of “preparedness, responsiveness and recovery” for any eventuality and to



study and learn from the effects of major failures. Preparedness are the exercise in planning for major emergencies, including training and reconstruction. Responsiveness are the actions taken in response to emergencies to chalk out a program for relief. Recovery actions taken after disaster to restore normalcy or services, reconstruct communities and trying to bring back normalcy. Disaster management aims to reduce, avoid or recover from the potential losses from hazards, assure prompt and appropriate assistance to victims of disaster to achieve rapid and effective recovery by trained disaster management groups. The governments and international organisations have created different funds for ESG criteria for achieving common goal across the world.

## **FUNDING TO MEET CONSEQUENCES OF ESG.**

### **Environment Protection Fund :**

Under the Aegis of apex court directed the Ministry of Environment, Forest and Climate Change (MoEFCC) to create a fund with a specific purpose being utilised for environment protection, rehabilitation and welfare of citizens. The Ministry was requisitioned to the utilisation of fund with regard to Compensatory Afforestation Funds Management and Planning Authority (CAMPA). It is noted huge amount available in the Fund which can be used for benefit of environmental protection and rehabilitation. Issuance of directives on the status of fund collected under Environment Compensation Charge (ECC).

The Governments are following utilization of funds for environment protection which are as per the guidelines framed on the advise of apex court. The funds deposited in these SPVs created in States including the Compensatory Afforestation Fund (CAF) with details of funds released and utilised by the respective Special Purpose Vehicle (SPV) created for this purpose.

### **Disaster Response Fund.**

The Central Government has allowed contributions from any person or institution in the National Disaster Response Fund (NDRF) as per Section 46(1)(b) of the Disaster Management (DM) Act, 2005. It is managed by the Central Government for meeting the expenses for emergency response, relief and rehabilitation due to any threatening disaster situation or disaster.

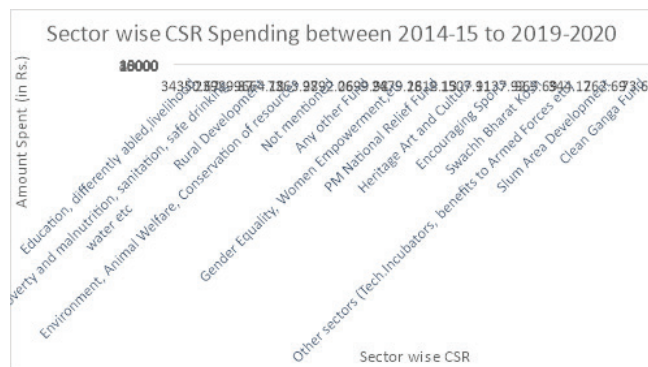
It supplements the State Disaster Response Fund (SDRF) in case of a disaster of severe nature, provided adequate funds are not available.

Similarly the SDRF is the primary fund available with the State governments for responses to notified disasters to meet expenditure for providing immediate relief. The Centre contributes 75% of the SDRF allocation for general category States and Union Territories, and 90% for special category States/UTs.

### **CSR Fund (ESG criteria)**

India having the mandated CSR mechanism and implementation strategy kick started its journey to set a benchmark in attaining sustainability goals and stakeholder activism in nation building. The CSR ambit is getting bigger and aims for analysing and achieving sustainability by mandating CSR through its legislative action.

Sector wise CSR Spending between 2014-15 to 2019-2020	
Sector wise CSR Spent	Amount Spent (in Crores)
Education, differently abled, livelihood	34350.67
Health, poverty and malnutrition, sanitation, safe drinking water etc	23989.87
Rural Development	9664.18
Environment, Animal Welfare, Conservation of resources	7363.97
Not mentioned	2892.06
Any other Fund	2699.98
Gender Equality, Women Empowerment, etc	2479.28
PM National Relief Fund	1618.13
Heritage Art and Culture	1507.91
Encouraging Sports	1137.92
Swachh Bharat Kosh	969.69
Other sectors (Tech.Incubators, benefits to Armed Forces etc)	344.17
Slum Area Development	262.69
Clean Ganga Fund	73.67
<b>Total</b>	<b>89354.19</b>



### Pension Funds/pooled funds :

In our country the life insurance pension funds or pooled fund managers with some are annuity based are widely used for ESG coverage. These pension funds are investment pools that pay for workers' retirements. Contributions to funds are paid for by either employees, employers, or both or by an agreement. Key takeaways are companies reduce pension fund risk by relying on fixed income strategies. The actors of social economy have assisted the recovery from the traces of disaster by strengthening public services to complement initiatives of government. The governments has funding attire to promote social innovation practices and co-operation, for creation of front line employment and the promotion of local culture in their communities. These Funds shows better performance linked ESG as reputational risk. These funds have become benchmark on ESG practices which evolved embedded risk mitigation.





## CONCLUSION

The general perception about ESG score being calculated based on organisational performance and its behaviour relating to ESG issues are reported in a systematic manner. ESG refers to the three central factors in measuring the sustainability and societal impact of an investment in a company or business. ESG criteria is an accelerator to the building of corporate reputation and bridging the gap between reality and perception. Integrating conforms to broader business strategy which can enhance performance and further differentiate the company from its competitors and to achieve marketing advantage. ESG ratings are comprehensive measure to Socially Responsible Investment process that considers social and environmental factors within the context of traditional quantitative securities and investment analysis. The UNFCCC deliberations on climatic change has opened up the avenues for clean environment and sustainability.

The dynamic strategy and enterprise risk management of the company is to address financially material events with environmental and social factors driving competitive advantage. The contingency planning and sustainability of the organisation thrive in accelerating transformation and stakeholder capitalism. The companies should embrace ESG as a strategic business imperative.

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## **IMPLEMENTATION OF ESG FOR SUSTAINABLE DEVELOPMENT: ANALYSIS OF ITS IMPLICATIONS AND POTENTIAL CHALLENGES.**

**Abstract:**

*The ESG (Environmental, Social, and Governance) ecosystem has developed as a key structure for appraising the sustainability and ethical performance of businesses and investment prospects. This research paper aims to provide an in-depth analysis of the ESG background in India, highlighting its implication, current prominence, and potential associations for the country's future. This paper emphasizes the need for India to embrace the ESG prototype as a facilitator for ensuring sustainable development and a decisive aspect of the emerging New World Order. This paper emphasizes the impact of ESG on society, sustainability, and the realignment of corporates and investors toward a focus on sustainability rather than mere profit. Challenges and opportunities associated with ESG practices and compliance are also explored in this paper*

**Introduction**

ESG stands for Environmental, Social, and Governance, which jointly form a structure for assessing the sustainability and ethical performance of businesses and investment prospects. It is an all-inclusive method that takes into account three key dimensions: Environmental factors, Social Factors, and Governance factors.

The new-age production units and organizations are entitled to the responsibility to reduce the carbon footprints that each organization is creating. Though many guidelines are set up by the government these compliances will strengthen the process adopted by the organizations to reduce the impact of an organization's activities on the environment. The focus areas can include aspects such as energy consumption, greenhouse gas emissions, waste management, pollution prevention, resource conservation, and climate change mitigation. Evaluating an organization's environmental performance always helps to assess its commitment to sustainable practices and its contribution to mitigating environmental risks and challenges.

After environmental impact the major area of concern for ensuring an organization's social sustainability is how organizations are making or leaving their mark on society and stakeholders. It involves evaluating aspects such as labor practices, human rights, community engagement, diversity and inclusion, consumer protection, and social welfare. Gauging a company's social performance provides insights into its commitment to social responsibility, stakeholder engagement, and the promotion of social well-being. The majority of organizations in India Land are forced to comply with the guidelines imposed by the CSR components of the Companies Act. Even without these



guidelines, social responsibility should be a part and parcel of an organization's social existence and as a social entity, organizations are supposed to take care of the society with which it is cohabiting in the social cauldron.

The above two factors can be implemented when the basic backbone of the organization will be cemented on strong ethics which focus on high integrity, and ethical standards while safeguarding the stakeholders' interests. Strong ethical practices will be reflected in the organization's internal structures, policies, and practices that guide its decision-making processes. The blueprint of the ethical practices will be visible in various facets like the composition of the Governing Board, executive compensation, risk management, transparency, accountability, and adherence to legal and regulatory frameworks. Evaluating a company's governance practices helps to determine its compliance with the governance framework entitled through its core values.

By keeping in mind these three pillars collectively, the ESG framework provides an all-inclusive assessment of a company's overall sustainability representation and ethical behavior. It goes beyond traditional financial analysis by integrating non-financial factors that have a significant impact on long-term business feasibility, reputation, and societal value creation.

This research paper searches the factors influencing the cumulative global focus on ESG and its impact on businesses, investors, and society. ESG considerations have multiplied eminence due to various drivers, because of regulatory changes, stakeholder expectations, financial performance, and sustainable development goals. As businesses and investors incorporate ESG principles, there are tangible benefits for both stakeholders and society at large.

### **Realigning the focus of corporates and investors from profit to sustainability through ESG.**

The incorporation of ESG into corporate strategy and operations has become vital for businesses. In recent years, there has been a paradigm shift in the business and investment community, as the focus has steadily stretched outside profit maximization to embrace sustainability and accountable practices. This shift is driven by the appreciation that businesses have a vital role to play in addressing global concerns such as climate change, social disparity, and ethical governance. ESG considerations have emerged as a framework that enables corporates and investors to assimilate sustainability into their decision-making practices. Corporate houses are gradually spotting the importance of embracing a sustainable business model that considers ESG factors. By assimilating ESG considerations into their core strategies, businesses can enhance their long-term value and alleviate risks. This includes resourcefulness such as reducing carbon emissions, promoting resource efficiency, ensuring ethical supply chains, and fostering diversity and inclusion. By embracing sustainability, corporates can attract socially conscious consumers, improve employee morale and productivity, and build stronger relationships with stakeholders.

### **Realigning Investor Focus:**

Investors are also recognizing the value of ESG integration in their investment decisions. Beyond financial returns, investors are looking for investments that support their values and contribute to a sustainable future. By evaluating corporate houses based on ESG performance, investors can identify risks and opportunities that may impact long-term financial performance. This shift in focus has led to the development of sustainable investment strategies, such as impact investing, socially responsible investing (SRI), and ESG-focused funds. Such strategies allow investors to distribute capital to organizations that exhibit strong ESG practices.

### **Benefits of Realigning Focus of ESG:**

Realigning the focus of corporates and investors from profit to sustainability through ESG



considerations deals with several benefits. Firstly, it promotes a more inclusive and unbiased society by reassuring businesses to address social issues, such as labor rights, human rights, and community development. Secondly, it contributes to environmental sustainability by fostering accountable resource management, reducing carbon footprints, and upholding renewable energy. Thirdly, it enhances corporate governance, transparency, and accountability, leading to more robust and trustworthy organizations. Finally, the realignment allows companies to anticipate and adapt to changing regulatory frameworks and societal expectations.

While the transference towards ESG integration presents numerous opportunities, it also comes with challenges. Corporates may face difficulties in measuring and reporting their ESG performance consistently, given the lack of standardized metrics and reporting frameworks. Additionally, balancing short-term financial goals with long-term sustainability objectives can pose challenges. However, these challenges also present opportunities for collaboration, innovation, and the development of industry-wide standards and best practices.

According to a survey conducted by EY (2021), institutional investors are progressively placing emphasis on assessing their performance through Environmental, Social, and Governance (ESG) perspectives. The survey revealed that a substantial volume of investors (98%) now assess non-financial performance using a structured and methodical evaluation approach. However, the survey also highlights a growing discrepancy between the heightened focus on ESG performance and the limited availability of structured and standardized non-financial data provided by companies.

In recent years, the percentage of survey respondents who believe that organizations are not adequately addressing ESG factors has witnessed a notable increase. For example, in the background of environmental risk, the percentage of respondents stating this concern rose from 20% in 2018 to 34% in 2020. Correspondingly, for social risk, the figure increased from 21% to 41%, whereas for governance risk, it surged from 16% to 42% (EY, 2021).

This growing trend accentuates the growing prominence of ESG considerations in investment decision-making and the increasing demand for transparent and reliable non-financial data from organizations. Institutional investors are spotting the need for healthy ESG frameworks to effectively assess the long-term sustainability and resilience of their investment portfolios. They are seeking structured methods to gauge the ESG performance of companies in order to make informed investment choices that align with their values and alleviate potential risks.

However, the major challenge faced by investors is the limited availability and standardization of non-financial data provided by organizations. This lack of regularity and comparability in ESG reporting can obstruct investors' ability to precisely evaluate and compare the ESG performance of different organizations/ companies. It emphasizes the need for greater transparency, standardization, and disclosure of non-financial information to enable more effective ESG assessments and decision-making. These findings emphasize the importance of addressing these challenges to meet the sprouting expectations of investors and ensure the integration of ESG considerations into investment practices.

### **Impact of ESG Practices on Society:**

ESG practices have a reflective impact on society as it makes affirmative effects on various facets including environmental preservation and climate change mitigation, social equality and human rights, accountable supply chains and community development, The integration of Environmental, Social, and Governance (ESG) factors into business practices has the prospective to considerably influence society and add to long-term sustainability.



## Social Outcomes

Various studies have underlined the positive effect of ESG on society. For example, a study by KPMG (2019) found that companies with strong social responsibility practices tend to have better affiliations with their employees, resulting in improved employee satisfaction and productivity. Eccles and Serafeim (2013) suggest that companies with robust governance practices are more likely to comply with labor and human rights standards, leading to value-added working conditions and condensed social inequality.

## Environmental Sustainability:

ESG practices perform a vital role in addressing environmental challenges. According to Clark and Feiner (2017), companies that highlight environmental deliberations in their operations tend to have lower carbon emissions and waste generation. Furthermore, research by Grewal, Serafeim, and Zhu (2020) recommends that organizations with sturdy environmental performance interest socially responsible investors, leading to amplified access to capital and potential cost savings through resource efficiency procedures.

**Stakeholder Engagement and Collaboration is another focus area that needs to be reemphasized** by the organizations. ESG integration inspires organizations to engross with stakeholders and pool resources to address societal trials. A study by Lee, Park, and Park (2019) highlights the significance of stakeholder engagement in sustainable development initiatives, nurturing partnerships with local communities, NGOs, and government entities. Such alliances enhance social interconnection, expedite knowledge sharing, and lead to more actual solutions for sustainable development.

## Sustainable Supply Chains:

ESG practices extend beyond a company's direct operations and percolate into its supply chain. Research by Beske, Land, and Seuring (2014) indicates that companies executing ESG principles in their supply chains can lessen environmental and social risks, encourage responsible sourcing, and increase transparency. This permits companies to create positive impacts through the value chain, confirming that suppliers follow ethical standards and reduce the overall environmental footprint.

## Challenges Linked with ESG Practices and Compliances

Irrespective of the positive effect of ESG practices there exist some challenges that are faced by the organizations during its implementation. Marquis, Toffel, and Zhou (2016), emphasized that organizations usually face many challenges & difficulties in accurately measuring and reporting their ESG performance. A lack of standardized metrics and reporting frameworks can hinder the comparability and transparency of ESG information. The major challenge faced by many statutory bodies is the non-availability of commonly accepted and standardized metrics that measure the impact of ESG aspects on the various stakeholders. Such metrics will ensure the credibility of the best practices reported by the various organizations additionally, organizations may encounter resistance from various stakeholders who select short-term financial gains over long-term sustainability goals. So realignment of the stakeholder's perspectives is important. So to strengthen the ESG implementation there is a need for perfect alignment and integration of the vision of the organization with its strategy formulation and tactical implementation with effective usage of resources.

## Conclusion:

The effect of ESG on society and sustainability is substantial and multifaceted. ESG integration positively impacts society by fostering social responsibility, improving labor practices, and promoting stakeholder engagement. It also contributes to environmental sustainability through





resource efficiency, carbon reduction, and sustainable supply chain practices. However, challenges such as measurement and reporting inconsistencies should be addressed to ensure the credibility and effectiveness of ESG initiatives. Overall, ESG serves as a catalyst for positive change, facilitating the transition to a more sustainable and inclusive future.

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## OPTIMIZING TRANSPORT NETWORKS- DRIVING TOWARDS GREEN MOBILITY

### Abstract

*Intermeshing of multimodal or intermodal transportation for freight movement can reduce greenhouse gas emissions. The objective of the paper is to study how transport networking of all modes can cut down emission and preserve the environment. The author uses data from the primary and secondary sources. Encouraging logistics operators to use rail and waterways can significantly reduce the carbon emission and increase efficiency in transportation.*

### Introduction:

India's silent development in the mobility sector with fast evolving demographics and substantial urbanization, transport system has to be restructured to meet the growing demand for mobility at the same time preserving the environment. India's commitment to reduce carbon dioxide emissions by 1 billion tons is underway leading to net-zero by the end of next decade.

The country is slowly embracing smart city policies which in turn can lead to smart mobility, the system of smart mobility is built on the theory of Intelligent Transport system, which emphasis on interlinking digital technologies amongst vehicles of all transport modes, transport infrastructure and digital devices for better traffic management which can effectively reduce carbon emission.

The broad objective of the paper is to study how transport networking of all modes can cut down emission and preserve the environment. The scope of the study is limited to freight movement across the country through surface transport.

Due to the increased demand in transportation across the country, there is a substantial growth of all transport modes. In 2019 India's freight movement by road is around 2697 billion metric tons per kilometer. Road transport plays an important role in moving the cargo and also the main contributor to ambient noise and air pollution. Globally around 4 million deaths occurs due to air pollution, the aim should be to meet at least the value of 10 microgram PM 2.5/m<sup>3</sup> which is mean guideline value of WHO. Some of the freight forwarders have started using EV vehicles for the last and first mile connectivity to the ports and rail freight stations. Proper intermeshing of multimodal or intermodal transportation for freight movement by focusing on green mobility is believed to reduce greenhouse gas emissions.

Moving cargo across the country through road transport sector may not be environmental friendly, shifting the freight to rail or sea mode (including Inland Waterways) can combat harmful environmental issues. There must be enough infrastructure to support the decision.

The study makes an effort to prove that when there is an increased cargo throughput through rail and sea, including Inland waterways, it can be construed as positive side of shifting the freight from



other modes which can cut down the carbon emission significantly. Hence the study has tabulated and analyzed the last five years' freight traffic through rail and sea mode. The output of the analysis is discussed in the last paragraph.

### Literature Review:

This paper analysis the sustainable mobility in Europe and US, the study envisages green mobility as the main subject of transport policy in all the regional levels. All political and policy makers stress the importance of green mobility in their decision wherever the transportation is involved.(Gallo & Marinelli, 2020)

This paper speaks on how sustainability is associated with physical nature and how it is converging with human. Further the paper reflects on sustainable mobility based on the theories like, hierarchy, classlessness and the individualism, the result grounding on a survey concludes on how it impacts green mobility based on the above three theories. (Chuang et al., 2020)

This paper studies on how low fare airlines between Europe and UK can contribute towards sustainable mobility through CSR initiatives. The paper is written based on the discussion and interviews from various airlines and stakeholders who have actively involved in the airline business.(Coles et al., 2014)combining a content analysis of 22 airlines' documentation with key-informant interviews with 11 airlines including three of the four market-leading LFAs. The research discovered evidence that LFAs were aware of the need to act more responsibly but how far intentions resulted in action was difficult to establish. To date the examination of LFAs has relied heavily on secondary sources and perspectives external to the firm. The firms' own CSR-related texts do not represent a reliable basis for examining CSR among LFAs; they have a high degree of fragmentation and variable quality. In-depth interviews showed that while there is more CSR activity than is made public, incomplete knowledge was a more significant problem than bias or spin. Very few LFAs had conducted a systemic audit of CSR-related activity. Integrative approaches are required to overcome the limitations of single methods, to contribute towards a fuller understanding of responsibility among LFAs, and to inform debate on whether it is necessary to regulate in order to encourage sustainable development in this high-growth sector. © 2013 © 2013 Taylor & Francis.”,”author”:[{“dropping-particle”：“”,”family”：“Coles”,”given”：“Tim”,”non-dropping-particle”：“”,”parse-names”：false,”suffix”：“”}},{“dropping-particle”：“”,”family”：“Fenclova”,”given”：“Emily”,”non-dropping-particle”：“”,”parse-names”：false,”suffix”：“”}},{“dropping-particle”：“”,”family”：“Dinan”,”given”：“Claire”,”non-dropping-particle”：“”,”parse-names”：false,”suffix”：“”}],”container-title”：“Journal of Sustainable Tourism”,”id”：“ITEM-1”,”issue”：“1”,”issued”：{“date-parts”：[[“2014”]]},”page”：“69-88”,”title”：“Corporate social responsibility reporting among European low-fares airlines: challenges for the examination and development of sustainable mobilities”,”type”：“article-journal”,”volume”：“22”},”uris”：[“http://www.mendeley.com/documents/?uuid=38bcb5b9-db81-4162-8af4-935198f70402”]】,”mendeley”：{“formattedCitation”：“(Coles et al., 2014

This paper examines the governance that encourage the de-carbonization of ground transport. This paper consolidates the challenges in implementing green mobility and how it can address these challenges, the paper further investigates how the international governance models can help to reduce carbon foot print in the land transport. (Wolfgang Obergassel \*, Oliver Lah, 2021.)

The paper discusses the de-carbonization initiatives taken in EU, the paper reflects on responsibility of car manufactures who can transform from the traditional manufacturing of cars to cars that will emit lesser emission, however the paper discusses the importance of governance which can contribute for sustainable growth. (Sander, 2020.)

This paper deals with green transport aligning with urban living, the case is discussed with reference to Copenhagen and Songdo cities which are now called smart cities, the paper further investigates how technology can minimize the carbon foot print and foster sustainable growth. (Doost Mohammadian & Rezaie, 2020)

This paper envisages in developing green mobility, where ever its required the transport facility should be developed including economic and non-economic areas, greenery should be given importance in the human living spaces. Cycles and non-powered vehicles should be encouraged for mobility which can transform the urban city green. (Loo & du Verle, 2017)

The paper examines that government and stakeholders in the tourism industry should work carefully on technological buoyancy which can contribute towards proper framing of policy leading to sustainable growth and green mobility. (Cohen et al., 2016)

This study examines the efficiency of transport service with reference to Catania a city in Italy, the study makes an attempt to correlate between public transport and the satisfaction of the user, the study believes that the efficiency of operation may lead to sustainable mobility. (Inturri et al., 2021)

### Methodology:

The author has collected five years' data from the secondary source particularly from Basic Port Statistics, Statistics of Inland Transport from the Ministry of Port, shipping and Waterways and Annual Reports of Ministry of Railways. Compounded Annual growth rate (CAGR) is calculated for Cargo transported through Inland waterways, Indian railways and coastal cargo through sea. The author also conducted a structured interview with the stakeholders to find out their perception.

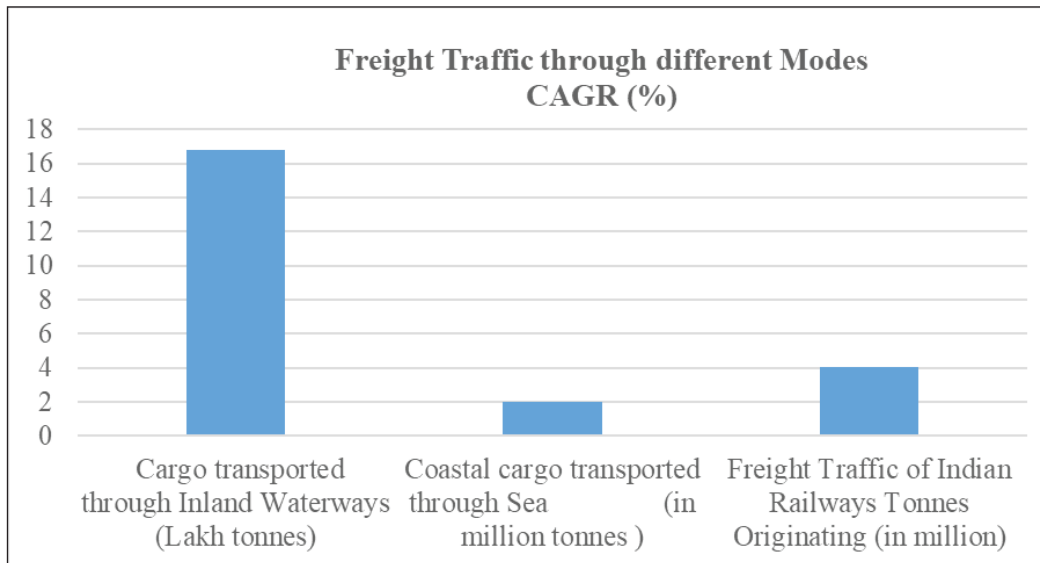
### Analysis and Interpretation:

Freight Traffic through different Modes				
Particulars	Cargo transported through Inland Waterways (Lakh tonnes)	Cargo transported through Inland Waterways measured in tonne Kms (in Lakh )	Coastal cargo transported through Sea (in million tonnes )	Freight Traffic of Indian Railways Tonnes Originating (in million)
2017-18	500.88	41297.89	154.74	1159.55
2018-19	673.11	47421.54	166.36	1221.48
2019-20	719.35	71719.00	159.77	1208.41
2020-21	836.11	44552.10	147.35	1230.94
2021-22	1087.93	38394.17	171.09	1415.87
CAGR (%)	16.78	NA	1.98	4.07

Source: Basic Port Statistics, Statistics of Inland Transport, MoPSW, Annual Report, MoR

The above table indicates, cargo transported through inland waterways, coastal cargo through sea and cargo movement through railways are increasing year on year. The CAGR is 16.78% when the cargo is carried through inland waterways, 1.98% when the cargo is moved through sea (Coastal movement) and CAGR is 4.07% when the cargo is moved through railways. Increasing cargo movement through rail and sea (Coastal Cargo) are the cleanest modes of transport compared to road transportation. Shifting the cargo from road to sea (Coastal Movement) or inland waterways would be the best example for a low carbon transportation. The best way to combat reduction in

fossil fuels in road transportation is by promoting EV vehicles and offering financial incentives for production and using these vehicles, resulting in stimulation of green supply chain management.



### Conclusion

From the table above it could be inferred that the freight through waterways and rail transportation is gaining momentum. Encouraging logistics operators to use rail and waterways can significantly reduce the carbon emission and increase efficiency in transportation.

Road transportation sector is one which contributes to noise and air pollution, addressing this is a great challenge, some of the suggestions are listed below which may assist the vision for zero emission mobility. The suggestion which are listed is a culmination of an idea derived from the structured interviews conducted with the stake holders.

- Only efficient and cleaner vehicles should be allowed to ply on roads.
- Limiting the use of trucks, buses and other automobiles beyond a maximum age. This can be implemented by offering financial incentives or by legal action.
- Promoting EV vehicles and vehicles using green fuels for freight movement.
- It is high time we can introduce vehicle platooning. A platoon is a concept where a group of automated vehicles that can drive closely together allowing very small spacing's, driving safely at high speeds.
- Developing Intelligent Transport System which can interlink digital technologies amongst vehicles of all transport modes, transport infrastructure and digital devices for better traffic management.
- Thrust should be given for encouraging circular economy through efficient supply chains.
- The Logistics operator should promote efficient supply chains by optimizing load factor and minimizing empty trips on trucks and pick up vans.
- Petrol and diesel powered cars and motorcycles may be slowly phased out in cities and urban areas.
- The Logistics operator may be encouraged to shift their cargo towards waterways and rail mode.





Private players may be encouraged to invest in dedicated rail corridors which can connect all major and non-major ports including special economic zones for moving the freight with ease and comfort. Moving the cargo across the country through railways may reduce the carbon emission considerably and also the most efficient transport mode.

Compared to road transport, shipping industry releases lesser carbon emission, hence logistics operators may be recommended to shift the cargo towards waterways from ground transport. In fact shipping companies, while moving their cargo, may be directed to adopt sustainable practices and IMO standards & regulations to reduce environmental impact and to increase energy efficiency. The shipping building companies may be advised to develop green and low carbon ships.

When the ships are berthed at the port, shore based electricity may be used for ships instead of running generator on board the ship, this may minimize the dependency on fossil fuels.

The ship operators can give a thought of using sailing ships which are operated by harnessing wind power. These sailing ships can circumnavigate the inland waterways which can reduce the carbon foot print substantially.

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## **THE IMPORTANCE OF GREEN FINANCE IN ADDRESSING CLIMATE CHANGE: A COMPREHENSIVE OVERVIEW**

**Abstract:**

*This research article provides a comprehensive overview of the importance of green finance in addressing climate change and promoting sustainability. It examines the definition, objectives, challenges, and opportunities in green finance. The article explores various financial instruments, such as green bonds, loans, funds, and fintech, and discusses their role in mobilizing capital for climate solutions. Case studies highlight successful initiatives in climate change mitigation and adaptation. The article emphasizes the need for international cooperation and financial support to advance green finance and achieve global sustainability goals. In conclusion, green finance offers significant potential for driving a transition to a low-carbon economy and fostering innovation and collaboration towards a sustainable future.*

**Introduction**

Climate change is one of the most pressing challenges of our time, posing significant risks to the environment, society, and economy. To mitigate and adapt to the impacts of climate change, there is a need for a massive shift in the way we produce and consume energy, goods, and services. This requires mobilizing large-scale and long-term financing from both public and private sources, which is often referred to as green finance. To assist low-carbon, climate-resilient, and environmentally sustainable development, there are many different instruments and methods that fall under the category of “green finance.” In this article, we give a thorough review of the significance of green finance in combating climate change, outlining its definition, scope, motivators, obstacles, advantages, and problems. At the national, regional, and international levels, we also talk about the state and trends of green finance as well as the major players and projects that are promoting and facilitating it. In order to maximize the potential and role of green finance in combating climate change, we provide several policy proposals as well as future research possibilities.

**Understanding Green Finance**

Green finance is a term that covers various financial activities that have positive environmental outcomes. It involves different types of loans, debt instruments, and investments that support sustainable projects or minimize the environmental impact of conventional projects. In a similar way, the Convention on Biological Diversity describes green finance as financial investments that go towards sustainable development initiatives, environmental products, and policies that enable the growth of a more sustainable economy. The main principles of green finance are to make financial flows consistent with environmental objectives, ensure transparency and accountability, foster



innovation and collaboration, and balance risks and returns. The main objectives of green finance are to help the transition to a low-carbon and climate-resilient economy, protect and restore natural resources, improve social inclusivity and well-being, and help achieve the Sustainable Development Goals.

### **Objectives**

Green finance encompasses the financing of activities that contribute to environmental sustainability and social well-being. Its objectives are as follows:

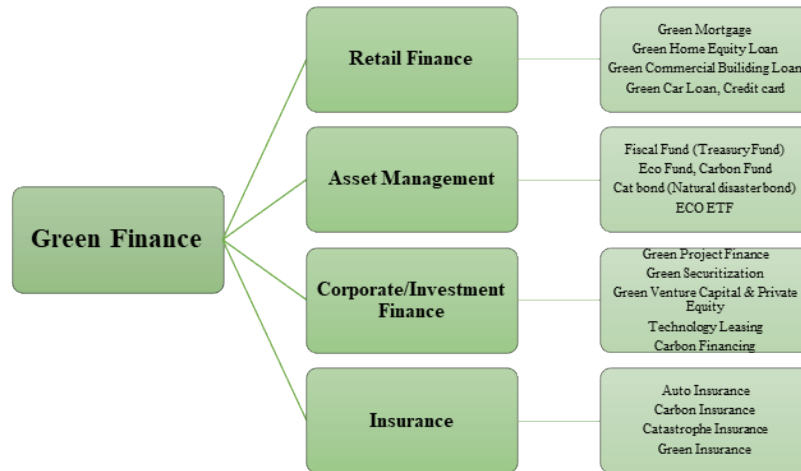
1. Supporting the transition to a low-carbon, resource-efficient, and circular economy: green finance aims to facilitate the shift towards economic models that reduce carbon emissions, promote efficient resource use, and embrace circular practices. This supports climate change mitigation and adaptation efforts.
2. Promoting green technologies, products, and services: green finance seeks to encourage the development and adoption of environmentally friendly technologies, products, and services. By supporting innovation and diffusion, it helps improve environmental performance and minimize negative impacts.
3. Mobilizing financial resources for green projects: green finance plays a crucial role in channeling financial resources from both the public and private sectors towards projects and initiatives that deliver environmental and social benefits. This mobilization helps fund crucial activities aimed at achieving sustainability goals.
4. Enhancing ESG standards and practices: Green finance advocates for stronger environmental, social, and governance (ESG) standards and practices within financial institutions and markets. This includes improving transparency, accountability, and risk management and ensuring that financial activities align with sustainability objectives.
5. Integrating environmental and social factors into decision-making: green finance aims to integrate environmental and social considerations into financial decision-making processes. By incorporating ESG factors, it helps align financial flows with long-term sustainability goals and encourages responsible investing.

Overall, green finance plays a vital role in driving the transition towards a more sustainable future by financing projects, promoting green technologies, improving ESG practices, and aligning financial decisions with environmental and social objectives.

### **Green Financing Mechanisms: Exploring Financial Instruments and Vehicles**

Green financing mechanisms are structured financial activities that aim to achieve better environmental outcomes, such as reducing greenhouse gas emissions, enhancing biodiversity conservation, or promoting circular economy initiatives. Green financing mechanisms can take various forms, such as green loans, green bonds, emissions trading, environmental funds, or nature-linked securities. Green financing mechanisms can help mobilize public and private sector resources for green projects, create enabling environments for green investments, and support community enterprises with micro-credit. Green financing mechanisms can also contribute to the sustainable development goals and the green recovery from the COVID-19 pandemic.

**Figure 1: Green finance products**



Source: Jin Noh Hee, Financial Strategy to Accelerate Innovation for Green Growth (2010).

### **Mobilizing Capital for Climate Solutions: Challenges and Opportunities**

Green finance plays a crucial role in mobilizing capital for climate solutions, including renewable energy, energy efficiency, low-carbon transport, and sustainable agriculture. However, this field faces both challenges and opportunities that warrant a comprehensive analysis.

Challenges in green finance include the absence of clear definitions and standards, making it difficult to distinguish truly green investments. Additionally, the short-term preferences of investors often do not align with the long-term nature of climate projects. The high upfront costs and risks associated with green investments pose barriers to their widespread adoption. Moreover, regulatory and policy obstacles can impede the development of green markets.

Challenges in green finance include the absence of clear definitions and standards, making it difficult to distinguish truly green investments. Additionally, the short-term preferences of investors often do not align with the long-term nature of climate projects. The high upfront costs and risks associated with green investments pose barriers to their widespread adoption. Moreover, regulatory and policy obstacles can impede the development of green markets.

Green financing, on the other hand, offers a plethora of alternatives. The rising demand for environmentally friendly goods and services creates a favorable market environment. The emphasis on sustainability opens up opportunities for green sector innovation and job generation. To support green finance projects, a variety of financial tools and processes are available. Furthermore, the linkage of green finance with global goals for sustainable development and climate action provides a tremendous incentive for its growth.

Addressing these challenges and harnessing the opportunities will be critical for the successful implementation of green finance initiatives. By overcoming barriers and leveraging the potential for innovation and market demand, green finance can make significant contributions towards achieving climate and sustainability objectives.

### **Case Studies: Success Stories of Green Finance in Climate Change Mitigation and Adaptation**



The Productive Safety Net Program in Ethiopia was established in 2006 to provide cash and food assistance to vulnerable families facing food insecurity due to climate-related challenges. Beneficiaries who participate in productivity-enhancing and environmental programs experience smaller drops in consumption after droughts and other climate events. The program has also led to significant improvements in soil conservation, water availability, and land productivity.

In Malaysia, the Stormwater Management and Road Tunnel (SMART Tunnel) serves a dual purpose of mitigating flash floods and facilitating traffic flow. The tunnel can be utilized as storm drains during heavy rainfall, helping to prevent flood damage and reduce congestion costs. With an investment of approximately \$500 million, the SMART Tunnel is expected to provide substantial long-term benefits by preventing over \$1.5 billion in flood damages and reducing traffic congestion costs by more than \$1 billion over the next three decades.

Centralized air conditioning systems, specifically district cooling, offer an alternative solution in countries like India. By distributing centrally chilled water through underground pipes, these systems reduce energy consumption and pollution compared to individual air-cooling units. This approach addresses the challenges of high upfront costs and limited access to air conditioning for vulnerable populations, making indoor climate control more affordable and sustainable.

Effective adaptation techniques can reduce the financial consequences of climate change, but putting them into practice demands a significant investment, particularly in poorer nations that are already struggling with climatic issues. The international community, especially affluent economies that produce large amounts of greenhouse gas emissions, must contribute financially to adaptation programs in developing countries.

However, adaptability by itself is not a long-term answer. To address the climate change challenge, dramatic reductions in greenhouse gas emissions are required, which requires coordinated efforts and commitments from all governments.

### **Innovations in Green Finance: Technological Advancements and Sustainable Investment Strategies**

Green finance is a rapidly growing field focused on promoting environmental sustainability and social responsibility through financial instruments and policies. It faces the challenge of mobilizing sufficient capital to support the transition to a low-carbon and resilient economy. Innovative solutions have emerged, including green bonds, green loans, green funds, and green fintech, which leverage technology and sustainable investment strategies.

Green bonds are debt securities that raise funds for environmentally beneficial projects. They have experienced significant growth, reaching \$270 billion in issuance in 2020, attracting diverse investors interested in aligning their portfolios with environmental goals.

Green loans are tied to the borrower's environmental performance, incentivizing improvements such as reducing greenhouse gas emissions or enhancing water efficiency. Borrowers meeting predefined targets can benefit from lower interest rates or fees, while lenders can monitor and verify environmental impacts.

Green funds focus on investing in companies or sectors that contribute to environmental sustainability and social responsibility. They employ various strategies, such as ESG integration or engagement with companies, offering investors diversification and support for the transition to a greener economy.

Green fintech applies digital technologies and innovations to enhance the efficiency, transparency,





and inclusiveness of green finance. It enables improved verification, reporting, and disclosure of environmental impacts using blockchain, AI, or big data. Mobile platforms, peer-to-peer lending, and crowdfunding increase access to and affordability of green finance for underserved segments.

In conclusion, green finance provides numerous opportunities for the financial sector and the environment. By harnessing technology and sustainable investment strategies, it fosters innovation, collaboration, and transformation towards a resilient and sustainable future.

### **Conclusion:**

The research article provides a comprehensive overview of the importance of green finance in addressing climate change. It highlights the role of green finance in mobilizing capital for climate solutions and promoting a transition to a low-carbon and resilient economy. The article explores various financial instruments and mechanisms, such as green bonds, green loans, green funds, and green fintech, and discusses their significance in driving sustainability. Challenges and opportunities in green finance are identified, along with case studies demonstrating their positive impacts. The article emphasizes the need for international cooperation and financial support to advance green finance initiatives and achieve a sustainable future.

### **Findings:**

The research findings emphasize that green finance plays a crucial role in mobilizing capital for climate solutions and promoting environmental sustainability. Green finance instruments, such as green bonds, loans, funds, and fintech, offer innovative solutions for driving the transition to a low-carbon economy. Challenges in green finance include a lack of clear definitions, short-term investor preferences, high upfront costs, and regulatory barriers. However, opportunities arise from the growing demand for green products, the potential for innovation and job creation, and the alignment with sustainable development goals. Case studies illustrate the positive impacts of green finance. International cooperation and financial support are identified as key factors in supporting green finance initiatives and achieving global sustainability goals.

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## **LEVERAGING ESG FOR ENSURING SUSTAINABLE GROWTH**

*“It may well be in the long-run interest of a corporation,” the economist wrote a half-century ago, “to devote resources to providing amenities to [its] community or to improving its government. That may make it easier to attract desirable employees, it may reduce the wage bill or have other worthwhile effects.”*

- Milton Friedman

### **The Perspective**

It is increasingly recognized that ESG is a key consideration for businesses, one that goes beyond philanthropic considerations but is a major factor in the sustained development of companies. The structure and processes a company creates to oversee ESG issues will vary depending on a number of factors, such as the size and complexity of the company’s operations (including its supply chain and whether operations are international), its industry, the magnitude of the company’s ESG risks and opportunities, the degree to which ESG issues are central to the company’s strategy, and the level of director expertise regarding relevant ESG issues.

In business, the foundation of success lies in value creation. Value creation is the ability to increase the worth of something to meet a specific demand. This value distinguishes you from your competitors, retains loyal customers, and gives purpose to your brand and offerings. Regardless of size, value creation is essential for all businesses, and it entails offering goods and services that clients constantly find beneficial. By leveraging the long-term value creation metrics businesses can better demonstrate their contributions toward sustainable, long-term value creation across the full ESG strategy development process from vision definition to implementation.

### **ESG is the new normal**

The ESG space has continued to develop rapidly, with amplified ESG awareness and expectations among investors, regulators, and consumers.

- **E**, environmental criteria, includes the energy a company takes in and the waste it discharges, the resources it needs, and the consequences for living beings as a result. Every company uses energy and resources; every company affects, and is affected by, the environment E also encompasses carbon emissions and climate change.
- **S**, social criteria, addresses the relationships the company has and the reputation it fosters with people and institutions in the communities where it does business. Every company operates within a broader, diverse society. S includes labor relations and diversity and inclusion.

- **G**, governance, is the internal system of practices, controls, and procedures a company adopts in order to govern itself, make effective decisions, comply with the law, and meet the needs of external stakeholders. Every company, which is itself a legal creation, requires governance.

ESG is more than ticking boxes. It's about making a difference - for your business and our world. Creating sustained outcomes that drive value and fuel growth, whilst strengthening our environment and societies. ESG is more than good intentions. It's about creating a tangible, practical plan that achieves real results. Success is not about climate change, diversity and disclosures alone. It's about embedding these principles- and more across your business- from investment to sustainable innovation. Just as ESG is an inextricable part of how you do business, its individual elements are themselves intertwined. For example, social criteria overlaps with environmental criteria and governance when companies seek to comply with environmental laws and broader concerns about sustainability.

### ESG and Value creation

ESG is essentially rooted in the idea that an organisation's value lies in more than just the bottom line, and that its day-to-day operations have an effect on numerous stakeholders. In a nutshell, ESG factors pertain to everything to do with business that's *not* strictly numbers-related. ESG practices can help corporates become more resilient by getting them ready for the impact of emerging issues, and helping them maintain robust governance, risk management and controls. In addition, to build and retain trust among stakeholders in the current environment, it is imperative to ensure transparent and high-quality communication and reporting on ESG performance. Businesses of all shapes and sizes are looking for ways to include a wider range of ESG information and data into their decision-making. Some are simply seeking to properly quantify their broader carbon footprint for management and reporting. Others are trying to set ESG targets to drive their next wave of improvements. Thus, having a consistent, verified and standardized ESG data management system is important.



The ESG agenda has never been more important as it is recognized ESG issues can be financially material to businesses. ESG reporting is continuing to increase in importance for stakeholders including investors, creditors, central banks and regulators. To build trust with stakeholders, companies need to transparently report on the risks and issues with material financial implications



to the business. Instead of simply a range of ESG initiatives, stakeholders want to understand, from concise disclosures, which issues are of greatest risk or strategic significance to the company, how they are embedded into the core business activities, and whether there is strong executive leadership behind ESG efforts.

### **Driving Value in today's competitive landscape requires a fresh approach**

Historically the main value drivers have been focused on increasing revenue and reducing costs. Whilst the fundamentals do not change, in the new world of sustainable investments, there is increased focus on ensuring that revenue and cost is managed in a way that has a positive impact on a wider set of stakeholders. An ESG strategy is no longer optional for listed companies. Consumers demand it from the products and services they purchase, investors require it in their portfolios, financing increasingly depends on it and employees want to work for a company that embraces it. There is value in this 'good' way of doing business. The value of focusing on ESG is two-fold: from investors and consumers, both closely intertwined.

Incorporating ESG metrics (environmental, social, and governance) into a business strategy can create value for key stakeholders by enhancing operational efficiency, reputation, and financial performance. It would help to acknowledge the ESG risks and opportunities relevant to your business. It requires a thorough assessment of your environmental impact, corporate social responsibility practices, and financial performance while remaining mindful of societal and environmental considerations. Pursuing the following ESG practices can help optimize the value of ESG initiatives:

#### **1. Develop and communicate ESG policies**

Developing a clear and explicit ESG policy that reflects the company's principles and integrates ESG goals into the overall business plan is crucial. One of the significant benefits of achieving high ESG performance is its positive influence on financial factors. Improved financial performance, reflected in accounting statements and stock returns, directly contributes to the firm's value calculation, resulting in higher shareholder value.

#### **2. Reduce environmental impact**

Companies must reduce their environmental footprint by adopting energy-efficient practices, minimizing waste, and lowering carbon emissions.

#### **3. Foster diversity and inclusion**

Encouraging diversity and inclusivity within the workplace holds numerous advantages, such as boosting employee morale, promoting innovation, using human resources, and reducing staff turnover.

#### **4. Engage in socially responsible practices**

Businesses must prioritize socially responsible practices, like ethical sourcing and fair labour standards, to succeed in today's society. Participating in community development can create a positive impact and enhance brand perception. Incorporating social and governance ESG principles into a business or corporate strategy can lead to shared value for both companies and society.

### **The question is no longer "if" but "how" active engagement around ESG drives value**

A key tool for an effective implementation of ESG is Value Based Management (VBM), which focuses all organizational processes on a single goal: the creation of sustainable and long-term value.



VBM allows for a 360° look at an organization, its peers, and the environment, thus facilitating the defining of strategy, guidance of key processes and activities, and delineation of metrics that are truly aligned with the creation of long-term value for all parties involved, and therefore shareholders as well. For value to be extracted from ESG initiatives a company should do more than simply add some ESG credentials and statements to its website, annual report, or prospectus. Today's businesses need to prove they are measuring authentic sustainability and social impact, with genuine, continuous improvement.

Many companies still think of ESG as year-over-year reporting metrics. Those that succeed long into the future, however, will be the ones that recognize the permanence of ESG and lay the foundations for resilient value creation in this new reality. They must then be able to clearly articulate the ESG impact of their activities and provide proof of its material value. Once corporates take these steps and the markets accept them, they will be positioned to take full advantage of the opportunity. ESG is a matter of value, not values, addressing material ESG issues is good business practice and essential to a company's long-term financial performance.

In a recent publication by Deloitte ("Does ESG impact company valuations? An Australian perspective", April 2022), in relation to the Australian market, Deloitte analysis of companies in the ASX200 (as a proxy for the Australian listed market) over a three-year period from 2019 through 2021, has highlighted the following key insights:

- There is a 'size effect'. Larger companies have better ESG ratings, despite similar reporting scope coverage.
- There seems to be a reasonable positive correlation between total shareholder returns (TSR) and improvements in ESG scores over a three-year horizon. This holds for excess (industry-adjusted) as well as absolute TSR.
- Improvements in ESG scores also correlate positively with improvements in valuations multiples (EV/EBITDA, EV/Revenue and P/E) over this horizon.

ESG is not a trade-off, but an increasingly important part of creating sustainable long term value. We believe that now, more than ever, embedding environmental and social responsibility into our operating practices, investment processes and value creation initiatives will help us to capitalise on the opportunities of the next decade. Investing in ESG not only impacts your business's current operations — it can also support long-term health. ESG practices can change the way you evolve and innovate, helping you manage market demands and build resiliency.

### **ESG implementation Concerns**

The ESG ecosystem is evolving, including issuers and investors who disclose and use information related to environmental, social and governance issues. Financial intermediaries, as well as government and international organization institutions are influencing the emerging practices in ESG investing. While constructive and inclusive progress has been made to develop ESG practices by several ESG players, it has generated the spread of a wide array of investment terminology, and disclosure frameworks which resulted in metric inconsistencies and lack of comparability for investors.

In this regard, while ESG methodologies are improving and becoming more transparent, scoring remains in a state of transition, with some rating providers still in the way of refining their methodology through the inclusion of factors such as materiality. There is a range of scoring methodologies in terms of determining which data to analyze and include, metrics weighting, materiality and how





to consider missing information. Moreover, subjective judgment is layered particularly regarding absolute and relative scores within and across industries.

Even though progress has been made, a crucial point remains on the alignment with materiality factors. Different institutions, such as SASB and GRI among others, are focusing on the assessment of materiality that is applied to different industries to determine the importance of each factor in the final ESG rating. This can depend on the business model, the external environment and the industry itself. The different materiality approaches have been influential in shaping the choice of key metrics used by the providers, but the discussion remains on the perspective on which metric is material.

## Conclusion

Companies focused on ESG opportunities and sustainability goals are better prepared to weather storms that occur in the market, in the environment or in the community. Investing in a robust ESG program in which a company identifies material risks and opportunities and sets forth a plan of action is a key component of maintaining and growing enterprise value. Companies will see the benefits throughout their organizations and with key stakeholders, as ESG drives value, mitigates risk and engages stakeholders. The only way to outperform in this new era will be for companies to make material ESG issues central to their strategy and operations, to go above and beyond their competitors, and then to measure and communicate their superior performance. Integrating ESG into the fabric of scaling companies requires a thoughtful and strategic approach. By embracing ESG practices, companies can position themselves as responsible and sustainable organizations while driving positive change in the world. While navigating the road to integrating ESG concepts into daily management and internal and external reporting may seem daunting, the benefits of doing so are worth the effort. Global society faces enormous challenges. But if companies are bold and strategic with their ESG activities, they will be rewarded.

Strong ESG performance is a sign of a strong business

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61 CMA SC & 382 ROCC

11 Overseas Centers

Largest CMA body in the Globe

### Eligibility

#### Admission in Foundation Course

- ⊙ Passed Class 10 (Require to pass 10+2 before appearing in CMA Examination)
- ⊙ 10+2 Pass or its equivalent (Students appearing for 10+2 also apply on provisional basis)

#### Registration to Intermediate Course

- ⊙ Passed CMA Foundation Examination
- ⊙ Graduates of any discipline (Students awaiting final result also apply on provisional basis)
- ⊙ Qualified CAT Level - I of The Institute of Cost Accountants of India
- ⊙ Qualified Engineers

### Course Fees

Foundation - Rs. 6,000/-

Intermediate - Rs. 23,100/-

Final - Rs. 25,000/-

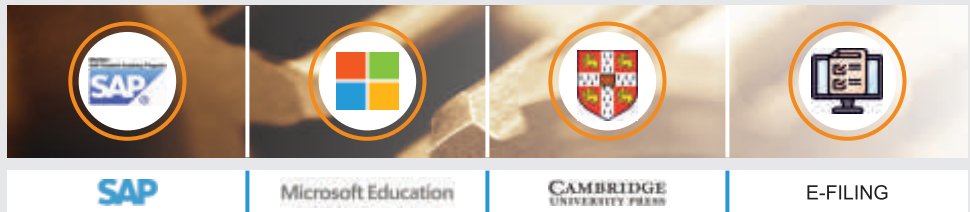
### Skills Training

\*Installment facility available

\*\*Merit based Scholarships available

World Class Employability and Techno Skill Training facility for CMA Intermediate Students

98040 51648  
[skilltraining@icmai.in](mailto:skilltraining@icmai.in)



More than 2000 Placements in 2021 & 2022

### Prominent Recruiters in CMA Campus Placement Drive: 2021 - 2022



Highest CTC offered **INR 28 lakh p.a.** | Avg. CTC offered **INR 12 lakh p.a.**

And Many More...



The Institute of Cost Accountants of India  
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Delhi Office: CMA Bhawan, 3 Institutional Area, Lodhi Road, New Delhi - 110003

94323 82747  
[placement@icmai.in](mailto:placement@icmai.in)

Behind Every Successful Business Decision, there is always a CMA

