

# Guidance Note on Carbon Credit Mechanism, Greenhouse Gas Accounting, ESG Reporting with different Sustainability Standards (including the current IFRS S1 and S2 Standard), and the Role of Cost Accountants



**Sustainability Standards Board (SSB)**  
**The Institute of Cost Accountants of India**  
(Statutory body under an Act of Parliament)

HQ: CMA Bhawan, 12, Sunder Street, Kolkata-700 016  
Delhi Office: CMA Bhawan, 3, Institutional Area, Lodhi Road, New Delhi-110003





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## ADVANCE PRAISE FOR THE BOOK

Sustainability data is at the heart of the strategic decisions which can lead us towards a more sustainable economy and the world. Over the past decade we have seen a dramatic increase in the number of companies measuring their sustainability performance and thousands of organizations beginning to see the value in monitoring their sustainability impacts. The importance of reporting on ESG risks is identified by policymakers and standard-setting bodies worldwide as evidenced by the numerous reporting regulations and standards requiring the disclosure of these risk are growing in numbers worldwide.

We are in a cusp of a new era: the way we capture, analyse and use our data. We are beginning to see that the reported environmental, social and governance data is not only shared companies but being used by themselves to learn about their own risks and opportunities and for making better decisions both in the short and long term.

Partners from various stakeholder constituency - from the governmental organisations; civil society; academia; investor, labor; intergovernmental agencies; businesses, worked together over the last 26 years to catalyse the global movement of sustainability reporting. We see that the GRI Standards are being used by over 11,000 organizations, covering more than 100 countries – and the GRI Standards are referenced or required in 248 policies from 85 countries.

This also goes for India. GRI data shows that, this year, there were a total of 974542 downloads of the GRI Standards by users around the world including India. The top-15 downloaded GRI Topic Standards in India last year reveal not only the wide uptake of Standards, but more importantly, that Indian companies report on much wider sustainability issues than climate alone, and increasingly focus on social topics. Key topics that are of growing interest span from topics such as effluents and water, occupational health and safety, emissions, energy, materials, biodiversity, employment practices, procurement practices, etc.

Last year, at the COP26 climate summit, India made headlines. The Prime Minister of India vowed to cut the country's emissions to achieve net zero by 2070. A big turnaround, given Indian's unwanted status as the world's third-largest polluter. In practice this means that India need to source half its energy from renewable sources by the end of this decade. Promises like this increase the need for the reporting of standardized, comparable information – to enhance decision-making by stakeholders in a way that avoids greenwashing, or a 'cherry picking' approach by companies in terms of what they disclose. That is where sustainability reporting come into play.



India is emerging as an aspiring economy to take great initiative in paving the way in combating climate change and meeting the Sustainable Development Goals (SDGs) of the United Nations in many of its regulatory schemes such as introduction of the Business Responsibility and Sustainability Reporting (BRSR) by SEBI in 2021. This practice is made mandatory for the top 1,000 listed companies by market capitalization from FY 2022-23 onwards.

At the moment we are in a changing global transparency landscape. GRI is at the heart of global convergence relating to standards for the reporting of impacts of an organization on the world and society. Through our comprehensive reporting framework, we provide the basis future reporting standards. Currently there are two significant developments happening in the sustainability reporting landscape, both of these developments – which we see as complimentary rather than competing.

EFRAG and GRI have published a joint statement on the high level of interoperability achieved between the European Sustainability Reporting Standards (ESRS) and the GRI Standards. Existing GRI reporters will be well prepared to report under the ESRS. Entities reporting under ESRS are considered as reporting with reference to the GRI Standards and will therefore avoid the burden of multiple reporting. For Indian companies, using the GRI Standards will therefore prepare Indian companies and create a global baseline for reporting according to IFRS and EU requirements. In particular, the GRI Standards can prepare for the upcoming ESRS – mandatory from this financial year of 2023. It is worth noting that Indian firms with supply or value chains in the EU will also need to prepare to report in line with these new standards.

GRI and ISSB standards form the global foundation for corporate sustainability reporting. The standards for the disclosure of sustainability-related financial information are drafted by the IFRS (International Financial Reporting Standards) Foundation – with which the newly established ISSB (International Sustainability Standards Board) is charged with for an investor audience only. It is important to note that stakeholders, including investors, have made it apparent that a sole focus on financial impact and enterprise value creation alone will not explain an organization's effort on behalf of climate and society. This mean that efforts to mitigate the impacts require the same fundamental shifts. For businesses, this is about shifting the focus from “creating value for the company” to also “creating value for the business, environment and society”, thus, enhancing the accountability of their environmental, social and governance (ESG) performance as well.

In India businesses are facing multiple reporting framework pressures and this is the time they need to be smart to create greater clarity on key concepts, reporting principles and disclosures, and align them with developments in responsible business conduct. The nationwide regulations and measures present to tackle the climate change issue and to grow the economy in a sustainable manner will certainly become an important focal point in the future.

Date: 18<sup>th</sup> October, 2023

**Dr. Aditi Haldar**  
Director, GRI South Asia



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## FOREWORD

In the contemporary period, characterised by the heightened significance of environmental, social, and governance factors, the responsibilities of cost accountants have transcended conventional financial analysis.

I am pleased to bring before you a **"Guidance Note on Carbon Credit Mechanism, Greenhouse Gas Accounting, ESG Reporting with Different Sustainability Standards - Role of Cost Accountants."**

This thorough handbook represents a significant achievement in our continuous endeavour to synchronise cost accounting practices with the constantly changing realm of sustainable and ethical business behaviour. It serves as evidence of our dedication as professionals to make valuable contributions to sustainable development and guarantee a more promising future for future generations.

The purpose of this guidance note is to provide Cost Accountants with the essential information and tools to effectively traverse the intricate aspects of carbon credit mechanisms, greenhouse gas accounting, and ESG reporting. Furthermore, it encompasses the incorporation of diverse sustainability criteria, encompassing the prevailing International Financial Reporting Standards (IFRS) S1 and S2 Standards. The information presented in this document will empower our members to offer strategic insights to organisations, assisting them in adopting sustainable practises, mitigating environmental effect, and promoting beneficial societal results.

I would like to extend my sincere appreciation to all the individuals specially our member CMA. Soumen Dutta, CMA Dr. V.V.L.N. Sastry and my Council colleagues CMA Dr. Ashish P. Thatte and CMA Manoj Kumar Anand who generously devoted their time, knowledge, and unwavering commitment to the successful completion of this guidance note. The advancement of our profession and the promotion of sustainability in our planet can be achieved via the collective endeavours of individuals working together.



I strongly encourage all members of the Institute to thoroughly engage with the contents of this guidance note and apply the acquired information in order to have a sustainable and significant influence inside their respective organisations and in broader contexts. We should seize this chance to foster constructive transformation, bolster transparency, and mould a future in which sustainable practises are central to all our decision-making processes.

At the Institute, we appreciate your steadfast commitment to upholding the highest standards of quality and your unflinching adherence to the principles that define our profession.

With warm regards,

**CMA Ashwin G. Dalwadi**  
President, ICMAI

Date: 18<sup>th</sup> October, 2023



## MESSAGE

I am thrilled to announce the release of a significant resource that marks a pivotal step in the journey towards a sustainable future – the **"Guidance Note on Carbon Credit Mechanism, Greenhouse Gas Accounting, ESG Reporting with Different Sustainability Standards - Role of Cost Accountants."** As Chairman of the Sustainability Standards Board of The Institute of Cost Accountants of India, it is my honour to present this comprehensive guide to our esteemed members.

In a world increasingly defined by environmental stewardship, social responsibility, and sound governance, the role of Cost Accountants has transcended its traditional boundaries. This guidance note is a testament to our commitment to embrace this evolution and equip ourselves with the knowledge and tools to lead the transformation.

The guidance note encompasses a wealth of insights, strategies, and practical guidance that will enable our members to navigate the intricacies of carbon credit mechanisms, greenhouse gas accounting, and ESG reporting. It also addresses the harmonization of diverse sustainability standards, including the current IFRS S1 and S2 Standards. Armed with this knowledge, Cost Accountants are poised to guide organizations towards adopting sustainable practices, reducing their carbon footprint, and realizing ESG commitments.

I extend my heartfelt appreciation to the dedicated professional CMA Soumen Dutta and CMA Dr. V. V. L. N. Sastry and Chairman of Professional Development & CEP Committee CMA Manoj Kumar Anand who contributed their expertise and dedication to make this guidance note a reality. Your collective effort reflects our shared commitment to driving positive change and fostering sustainable business practices across industries.

To our members, I urge you to immerse yourselves in the contents of this guidance note. Embrace the opportunity to enhance your skillset and to take on a more strategic role in your organizations. Let this guide be your compass as you steer organizations towards a more sustainable and prosperous future.



I would also like to express gratitude to the leadership, members, and partners who have supported our journey towards embedding sustainability into the fabric of our profession.

Let us stand united in our pursuit of a more sustainable world, where Cost Accountants play a pivotal role in shaping a future defined by conscious decision-making, responsible financial practices, and a lasting legacy of positive impact.

With sincere regards,

**CMA Dr. Ashish P. Thatte**

Chairman

Sustainability Standards Board, ICMAI

Date: 18<sup>th</sup> October, 2023



## PREFACE

In an era with environmental problems that have never been seen before and a growing need for safe practises, business and finance are going through a big change. As organisations around the world realise how important it is to deal with climate change and take on more environmental, social, and governance (ESG) responsibilities, it has become more important than ever to have a complete understanding of carbon management, emissions tracking, and sustainable reporting.

We are happy to share this detailed guidance note, carefully put together to provide clarity and insight into the complex web of topics that are important to the long-term success of organisations. This publication, which is called "**Guidance Note on Carbon Credit Mechanism, Greenhouse Gas Accounting, ESG Reporting with Different Sustainability Standard (including the Current IFRS S1 and S2 Standard) Role of Cost Accountants,**" helps professionals find their way around the intersection of finance, sustainability, and accountability.

### **How to Deal with Complexity and Support Sustainability:**

Carbon credit mechanisms, greenhouse gas accounting, ESG reporting, and sustainable standards can be hard to deal with because they all affect each other. But this complexity holds a huge amount of promise for good change. Our guidance note is meant to take the mystery out of these topics by giving clear explanations, useful tips, and real-world examples that give professionals the information they need to make good choices.

### **Most important:**

**Carbon Credit Mechanism:** As the world looks for ways to cut down on pollution, the carbon credit market is starting to look like a good way to do it. In our guidance note, we explain how carbon credit trading works, what the rewards are, and what the challenges are. This shows the financial benefits of reducing emissions.



**Accounting for Greenhouse Gases:** One of the most important parts of attempts to be sustainable is keeping accurate records of emissions. We give organisations a plan for how to measure, report, and control their carbon footprints in a way that shows the full impact on the environment.

**Different Sustainability Standards for ESG Reporting:** It can be hard to keep track of all the different sustainability reporting standards. Our book breaks down the most popular frameworks so that organisations can choose the one that fits best with their goals and the demands of their stakeholders.

**Integration of IFRS S1 and S2 with Sustainability Reporting:** Financial reporting and reporting on sustainability are becoming more similar. We look at how the role of IFRS standards is changing in the context of sustainability, which makes it easier to combine financial and non-financial information for full reporting.

**Empowering Cost Accountants:** Cost Accountants are one of the most important parts of an organization's shift to sustainability. In our guidance note, we talk about how important they are for figuring out prices, figuring out investments, and making good decisions.

### **A Plea to Change:**

This guidance note sounds like a call to action in a time when protecting the environment is no longer a choice but a must. As we start this publication, we hope that finance and accounting experts, business leaders, and people in charge of making decisions will use its ideas to make real changes. Together, we can use the power of money and sustainability to create a way to a more resilient, responsible, and prosperous future.

**CMA Manoj Kumar Anand**

Chairman

Date: 18<sup>th</sup> October, 2023

Professional Development & CEP Committee, ICMAI

## CHAPTER - 1

# Introduction

According to international climate accords like the Kyoto Protocol and the Paris Agreement, India is categorized as a developing or “non-Annex” nation. The categorization above is based on the recognition that countries such as India possess varying degrees of historical accountability and capability in addressing climate change compared to developed or “Annexed” nations.

Developing nations, such as India, typically lack legally enforceable carbon reduction objectives or caps, unlike Annex countries (developed nations). On the contrary, developing nations possess more autonomy in establishing their emission trajectories, primarily emphasizing sustainable development and eliminating poverty.

Nevertheless, it is crucial to acknowledge that despite the absence of obligatory regulations on emissions, India has undertaken voluntary measures to tackle climate change and mitigate emissions. India has committed to its domestic climate objectives, which aim to augment the proportion of non-fossil fuel energy capacity and diminish the carbon intensity of its economy.

Climate policy and international pledges are susceptible to modification, with countries potentially altering their strategies in response to shifting global consensus, advancements in scientific knowledge, and unique national situations.

There has recently been a notable transformation in the global corporate environment, characterized by a growing emphasis on sustainable practices prioritizing environmental stewardship, social welfare, and ethical governance. The current shift in paradigm is motivated by the acknowledgment of the urgent necessity to confront climate change, depletion of resources, and socioeconomic disparities. In light of the evolving corporate environment, incorporating sustainable concepts into organizational practices has become a critical imperative.

### 1.1 The reason for the study

This study aims to look deeper into carbon credits and the Clean Development Mechanism (CDM) in India. India is a developing country, also known as a “non-Annex country,” so it is not required to limit its carbon emissions. However, it can trade carbon credits. This study will look into different aspects of carbon credits and carbon practices in India, as well as their possible effects on Indian companies, to give a complete picture of this changing landscape. This guidance note will talk about the carbon credit market, the clean development mechanism, and the regulatory framework of carbon practice, accounting, taxation, auditing, and the job of the cost accountant. We will talk about the most.

Essential parts of India’s carbon credit market and the industries that can gain from carbon credits. Lastly, we’ll discuss the details of the carbon credit system where



cost accountants can find work. So, this study will help any organization discover the industries and businesses that can earn from carbon trading. It will help to learn more about this idea as a whole, which in turn will help Indian Industries to figure out their Carbon Credits income source (strategy), help with project development, etc. It will help companies find new business possibilities and improve their finances due to good Cost Management.

This Guidance note will focus on ESG reporting in India, SEBI's role in ESG, especially regarding reducing carbon, and the role of Indian cost accountants. This note will also discuss sustainability reporting and the standards businesses and industries worldwide use to report on sustainability. This advice note will tell COST ACCOUNTANTS how they can help SEBI and other regulatory bodies in ways that add value.

- **United Nations Framework Convention on Climate Change (UNFCCC)**
- The establishment of the United Nations Framework Convention on Climate Change (UNFCCC) is an international convention aimed at effectively addressing the pervasive worldwide concern of climate change. The United Nations Framework Convention on Climate Change (UNFCCC) was formally adopted during the Earth Summit held in Rio de Janeiro in 1992 and subsequently came into effect in 1994. The main goal of this initiative is to maintain the stability of greenhouse gas concentrations inside the atmosphere, preventing any detrimental human involvement with the climate system.

## **1.2 The United Nations Framework Convention on Climate Change (UNFCCC) encompasses several significant characteristics and functionalities.**

- **International Collaboration:** The United Nations Framework Convention on Climate Change (UNFCCC) is a forum for nations to convene and engage in collective efforts to tackle climate change. The statement acknowledges the recognition of climate change as a worldwide concern necessitating collaborative efforts.
- **The Parties to the United Nations Framework Convention on Climate Change (UNFCCC)** convene every year at the Annual Conferences of the Parties (COP) to engage in discussions and negotiations about climate-related matters, agreements, and commitments. The Conference of the Parties (COP) serves as the highest governing body responsible for making decisions within the framework of the Convention.
- **The United Nations Framework Convention on Climate Change (UNFCCC)** has played a pivotal role in facilitating the development of notable global accords, like the Kyoto Protocol in 1997 and the Paris Agreement in 2015. These accords establish.

Specific objectives and obligations for nations to decrease the production of greenhouse gases and promote worldwide efforts to address climate change.



- **The notion of “common but differentiated responsibilities”** is recognized by the United Nations Framework Convention on Climate Change (UNFCCC) about the principles of equity. This principle acknowledges that although all nations are responsible for addressing climate change, more affluent countries, historically more significant contributors to greenhouse gas emissions, should assume a greater role in mitigating its effects and extending assistance to underdeveloped nations.
- **The UNFCCC mandates that participating entities** must periodically submit reports detailing their emissions levels and endeavours to address climate change. This initiative fosters a culture of openness and responsibility in international efforts to address climate change.
- **The significance of technology transfer and** financial support in climate change adaptation and mitigation is underscored by the United Nations Framework Convention on Climate Change (UNFCCC). This international agreement highlights the need for wealthy countries to assist poor nations to facilitate their efforts in addressing climate change challenges.
- **The Convention acknowledges capacity building** as a crucial aspect in strengthening the ability of developing nations to adequately tackle climate change through providing training, technology, and resources.
- **The Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC), located in Bonn, Germany,** assists in the execution of the decisions made under the Convention and fosters effective communication and coordination among the participating Parties.
- It is crucial to acknowledge that the United Nations Framework Convention on Climate Change (UNFCCC) and its related accords are susceptible to revisions, modifications, and continuous discussions in response to the progressive comprehension of climate change and its consequences at a global level. To obtain the most up-to-date information, it is recommended to consult the official website of the United Nations Framework Convention on Climate Change (UNFCCC) and other pertinent authoritative sources.

### 1.3 Kyoto Protocol and Greenhouse gases

The Kyoto Protocol is a globally recognized agreement associated with the United Nations Framework Convention on Climate Change (UNFCCC). The adoption of the document occurred in 1997, and afterward, it came into effect in 2005. The Kyoto Protocol aims to tackle global warming and climate change by establishing obligatory emission reduction objectives for industrialized nations (Annex I countries). These countries are expected to decrease their greenhouse gas emissions collaboratively.

### Relationship with Greenhouse gases and Kyoto Protocol

- **Greenhouse gases:** Greenhouse gases (GHGs) encompass a group of gases that can confine heat within the Earth's atmosphere, instigating the greenhouse effect and augmenting the phenomenon of global warming. The gases above encompass carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), fluorinated gases, and water vapor. The accumulation of these gases within the Earth's atmosphere is a substantial catalyst for climate change.
- **Kyoto Protocol:** The Kyoto Protocol explicitly addresses six primary greenhouse gases, namely carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF<sub>6</sub>). Various gases have distinct global warming potentials, indicating their differing capacities to retain heat inside the atmosphere over a certain period.

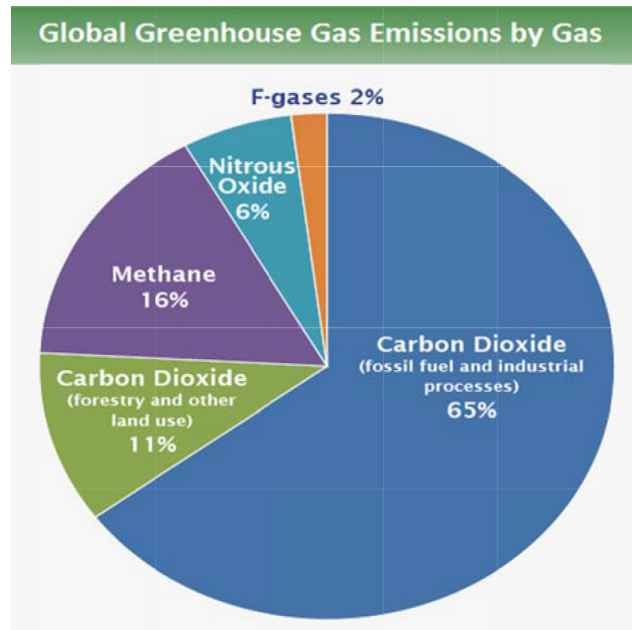


Fig 1.1- IPCC Source

### An explanation of each component is as follows:

- **Carbon dioxide (CO<sub>2</sub>) emissions** predominantly originate from the combustion of fossil fuels. Carbon dioxide (CO<sub>2</sub>) can also be released due to anthropogenic activities that directly affect forestry and land use, including deforestation, land clearance for agricultural purposes, and soil deterioration. Similarly, land can sequester carbon dioxide (CO<sub>2</sub>) from the atmosphere via reforestation, soil enhancement, and other endeavours.
- **Methane (CH<sub>4</sub>) emissions** arise from various sources, including agricultural operations, waste management practices, energy utilization, and biomass

combustion.

- **Nitrous oxide (N<sub>2</sub>O) emissions** primarily arise from agricultural activities, mainly using fertilizers. The process of fossil fuel burning also results in the production of nitrous oxide (N<sub>2</sub>O).
- **Emissions of fluorinated gases (F-gases)**, such as hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF<sub>6</sub>), are attributed to industrial operations, refrigeration systems, and the utilization of diverse consumer products.

Black carbon is classified as a solid particle or aerosol, not a gaseous substance. Nevertheless, it is known to contribute to the warming of the Earth's atmosphere.

#### 1.4 Emissions of Greenhouse Gases around the World, Broken Down by Economic Sector:

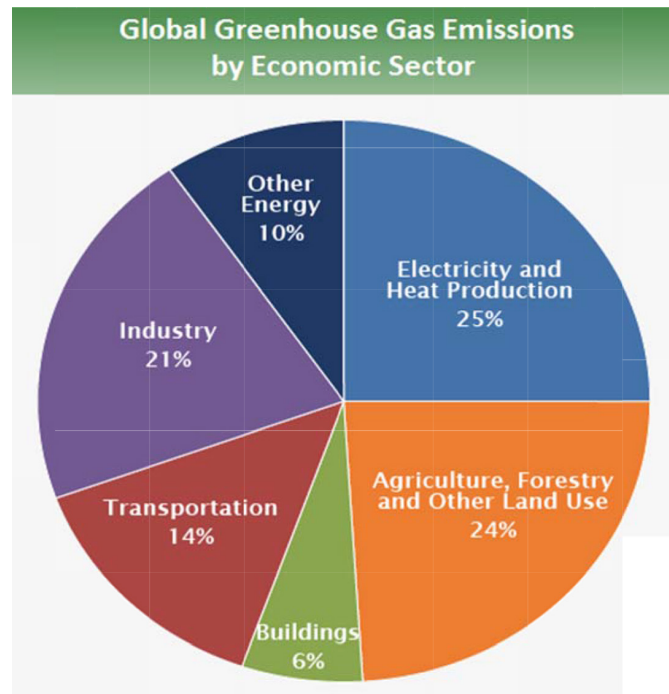


Fig 1.2- IPCC Source

#### 1.5 The Kyoto Protocol encompasses several significant characteristics and some important terms like CDM, JI, CER, Emission Trading, and Adaptation Fund

- The Kyoto Protocol implemented obligatory emission reduction objectives for industrialized countries (Annex I countries) within its initial commitment period from 2008 to 2012. These aims aimed to achieve a collective reduction in emissions, averaging approximately 5.2% compared to the recorded levels in 1990.



- **The Protocol implemented three market-based mechanisms**, including the **Clean Development Mechanism (CDM)**, **Joint Implementation (JI)**, and Emissions Trading, to assist Annex I nations in achieving their targets in a cost-effective manner.
- **The Clean Development method (CDM) is a method that permits industrialized nations to make investments in emission reduction projects located in developing countries**, enabling them to **accrue Certified Emission Reductions (CERs) based on the realized reductions. These Certified Emission Reductions (CERs) can then be utilized to fulfil a portion of their respective emission reduction objectives.**
- **Joint Implementation (JI) is a mechanism** that permits nations listed in Annex I of the United Nations Framework Convention on Climate Change (UNFCCC) to **engage in investments to reduce emissions in other Annex I countries.** In return for their contributions, these investing countries are granted Emission Reduction Units (ERUs) as recognition for their endeavours.
- **Emissions Trading:** The emission trading concept involves transferring excess emission allowances **from nations that have successfully surpassed their emission reduction targets to countries with challenges in meeting them.**
- **Adaptation Fund:** The establishment of the Adaptation Fund was a key provision of the Kyoto Protocol, aimed at providing financial support for initiatives and programs in developing nations that face heightened vulnerability to the detrimental impacts of climate change.

**1.6 Issues and Evolution:** Although the Kyoto Protocol represented a notable milestone in the global efforts to tackle climate change, **it encountered several obstacles.** These issues encompassed the absence of obligatory objectives for large developing economies and the voluntary withdrawal of certain nations from the agreement. **The Paris Agreement** negotiated and adopted in 2015, ushered in a new era of international collaboration on climate change. This agreement emphasized the importance of all nations taking action to address climate change, with each country determining its contributions based on national priorities.

- The Kyoto Protocol laid the groundwork for global climate negotiations and emphasized the significance of international collaboration in tackling the issue of climate change. Although the Paris Agreement has superseded it, the procedures and lessons of its predecessor continue to exert influence on global climate policy and actions.

### 1.7 Kyoto Protocol- Annex I and Non-Annex Countries and related matters

- **Annex I countries refer to nations classified as developed or industrialized.**

- The Annex I countries refer to the group of nations classified as industrialized and developed, as initially outlined in the annexes of the original United Nations Framework Convention on Climate Change (UNFCCC) treaty. These nations have been identified as bearing historical responsibility for most greenhouse gas emissions owing to their substantial industrialization and economic pursuits. During the initial commitment period of the Kyoto Protocol (2008-2012), Annex I countries were obligated to adhere to emission reduction objectives that were legally binding.
- **Non-Annex I countries**, also called developing countries, are nations not included in Annex I of the United Nations Framework Convention on Climate Change (UNFCCC). These countries are typically characterized by their lower levels of economic development and
- **The term “non-annex”** refers to a situation or entity that is not subject. Developing and growing economies predominantly constitute the majority of nations worldwide. During the first commitment period of the Kyoto Protocol, these countries were not allocated emission reduction objectives that were legally enforceable. Conversely, individuals were incentivized to engage in voluntary measures to reduce emissions and adapt to the consequences of climate change.
- The Kyoto Protocol is an international environmental agreement implementing a ‘cap and trade’ system, establishing emission limits for countries under Annex I.
- The average requirement of this cap necessitates that countries decrease their emissions by 5.2% below their 1990 baseline throughout the initial commitment period spanning from 2008 to 2012.
- Consequently, many nations establish limitations on the amount of emissions permitted from facilities operated by domestic enterprises and other entities commonly referred to as ‘operators.’
- Countries employ national registers to oversee this process, which must undergo validation and monitoring by the United Nations Framework Convention on Climate Change (UNFCCC) to ensure compliance.
- **Every operator is allocated a certain number of credits**, with each credit granting the holder the authority to emit one metric tonne of carbon dioxide or an equivalent amount of other greenhouse gases.
- Operators who have not fully utilized their allocated quotas can trade their surplus allowances as carbon credits. Conversely, firms on the verge of surpassing their limits can purchase more allowances as credits through private transactions or in the open market.



- By implementing a system that allows for the trading of allowances, an organization can strategically pursue the most economically efficient approach to decreasing its emissions. This can involve investing in more environmentally friendly machinery and practices or acquiring emissions allowances from another organization with surplus capacity.
- Countries listed in Annex I of the United Nations Framework Convention on Climate Change (UNFCCC) that have not successfully achieved their prescribed targets for reducing greenhouse gas emissions may be penalized. Nevertheless, the penalty mechanism was not directly linked to the submission of 1.3 emission allowances. Instead, it entailed an obligation to compensate for the deficit in emissions reductions in the future commitment period.
- The compliance mechanism of the Kyoto Protocol encompassed provisions aimed at resolving instances of non-compliance by Annex I nations about their commitments to emission reduction targets. Non-compliance may arise if a nation's realized emissions exceed its designated emissions limit for the specified duration of commitment.
- The term "Party's Assigned Amount Units (AAUs)" refers to the upper limit of emissions, expressed in carbon dioxide equivalents, that a party can release during a commitment period to meet its emissions target.
- Governments can distribute portions of their Assigned Amount Units (AAUs) to specific corporations or sectors. These allocations are called Emissions Rights, Emissions Quota, or Emission Allowances.
- The emission reduction targets assigned to different Annex I countries under the Kyoto Protocol were determined by considering their historical emissions, economic circumstances, and specific commitments. During the first talks of the Protocol, individual countries decided and negotiated their respective reduction targets. The targets were often established as a percentage decrease or increase in the nation's emissions recorded in 1990. **Here are some examples of emission reduction targets for select Annex I countries:**
- **European Union (EU):** The EU committed to a collective target of reducing greenhouse gas emissions by 8% below 1990 levels during the first commitment period (2008-2012). Member states allocated individual marks based on their economic and emission profiles.
- **United States:** The United States initially signed the Kyoto Protocol but withdrew without ratifying it. However, its initial commitment was to reduce emissions to 7% below 1990 levels.
- **Japan:** Japan committed to reducing greenhouse gas emissions by 6% below 1990 levels.

## **Guidance Note on Carbon Credit Mechanism, ESG Reporting... etc.**

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- **Canada:** Canada aimed to reduce its emissions to 6% below 1990 levels. However, it did not achieve its target and eventually withdrew from the Kyoto Protocol.
- **Russia:** Russia's target allowed it to increase emissions by up to 100% compared to its 1990 baseline. This was due to the collapse of the Soviet Union and its reduced industrial activity in the early 1990s.
- **Australia:** Australia committed to limit its emissions to 8% above 1990 levels.
- **Norway:** Norway pledged to limit its emissions to 1% above 1990 levels.

It's important to note that these targets are specific to the first commitment period of the Kyoto Protocol (2008-2012). The marks and commitments have evolved, and countries' goals have changed in subsequent agreements such as the Paris Agreement, which introduced more flexible and nationally determined contributions.

**For accurate and up-to-date information on specific emission targets of different Annex I countries, it's recommended to consult official sources, climate negotiation documents, or international climate organizations.**

The emission reduction targets assigned to different Annex I countries under the Kyoto Protocol were determined by considering their historical emissions, economic circumstances, and specific commitments. During the first talks of the Protocol, individual countries decided and negotiated their respective reduction targets. The targets were often established as a percentage decrease or increase in the nation's emissions recorded in 1990.



## CHAPTER - 2

# Kyoto Protocol, Paris Agreement, and Greenhouse Gases

### 2.1 The Kyoto Protocol offers emission trading schemes

The Kyoto Protocol offers a range of projects that might be conducted, each generating credits that vary in significance and distinctiveness. The following section presents an overview of the several trading strategies implemented inside the protocol.

- **Certified Emission Reduction (CER):** As previously stated, companies in developed nations can establish a Clean Development Mechanism within developing countries. The reduction of greenhouse gas emissions achieved through Clean Development Mechanism Projects is called Certified Emission Reductions (CERs), commonly known as Carbon Credits.
- **Emission Reduction Units (ERUs):** Emission Reduction Units (ERUs) represent a category of carbon credits employed within the Kyoto Protocol's flexible mechanisms. Emission Reduction Units (ERUs) were produced due to implementing emission reduction or removal programs in nations committed to reducing emissions under the Protocol. These initiatives resulted in measurable and validated decreases in greenhouse gas emissions, and governments may utilize the consequent issuance of Emission Reduction Units (ERUs) to fulfil a portion of their respective emission reduction objectives.

#### Key Points about Emission Reduction Units (ERUs):

- **Origin:** The generation of ERUs occurred through implementing Joint Implementation (JI) initiatives, which entailed cooperative efforts between two Annex I (developed) countries as defined by the Kyoto Protocol. A particular nation would allocate resources towards initiatives to reduce emissions within another government. As a consequence of these efforts, the reduction in emissions would result in the generation of Emission Reduction Units (ERUs).
- **Types of Projects:** Several projects fall under the Joint Implementation (JI) category. These projects encompass a range of activities aimed at enhancing energy efficiency, adopting renewable energy initiatives, and mitigating methane emissions from industrial processes or landfills.
- **Certification and Verification:** Similar to the Clean Development Mechanism (CDM) projects, Joint Implementation (JI) projects were subjected to a meticulous procedure of validation, verification, and certification conducted by an impartial third-party entity. This measure ensured that the reductions in emissions were genuine, supplementary, and capable of being confirmed.
- **Issuance of ERUs:** The issuance of Emission Reduction Units (ERUs) occurs after the verification of emission reductions, whereby the host country where the project was conducted grants ERUs to the investing country. The utilization of

these ERUs has the potential to be recognized as emission reductions within the investing country's national inventory, aiding in fulfilling its emission reduction obligations as outlined in the Kyoto Protocol.

- **Role in Meeting Targets:** The provision of Emission Reduction Units (ERUs) has played a significant role in assisting Annex I nations in cost-effectively meeting their emission reduction commitments. Countries can generate Emission Reduction Units (ERUs) by investing in emission reduction projects in other Annex I nations. These ERUs can then be utilized to fulfil their emission reduction commitments.
- **Transition to Other Mechanisms:** Following the conclusion of the initial **commitment term of the Kyoto Protocol (2008-2012), the utilization of Emission Reduction Units (ERUs) as a mechanism ceased.** Successive climate agreements, such as the Paris Agreement, have implemented novel methods and strategies to tackle the issue of climate change. **These include adopting voluntary nationally determined contributions (NDCs) by all participating nations.**
- It is noteworthy to acknowledge that the utilization of Emission Reduction Units (ERUs) and other mechanisms implemented under the Kyoto Protocol have undergone examination and scrutiny over time. Adopting novel techniques signifies the progressive comprehension of climate change and the international dedication to mitigating its impacts.
- **Verified Emission Reduction (VER):** Verified Emission Reductions (VERs), alternatively referred to as **Voluntary Emission Reductions**, pertain to a category of carbon credits that arise from initiatives aimed at reducing emissions that fall beyond the purview of obligatory international accords such as the Kyoto Protocol or domestic regulatory frameworks. In contrast to carbon credits earned through regulated emission reduction programs, **Verified Emission Reductions (VERs) are frequently generated voluntarily by organizations, projects, or people seeking to mitigate their carbon emissions.**

#### **Key Characteristics of Verified Emission Reductions (VERs):**

- **Voluntary Nature:** The voluntary nature of Verified Emission Reductions (VERs) means that they are not contingent upon the establishment of mandatory emission reduction objectives as dictated by international agreements or regulatory frameworks. Voluntary emission reductions are undertaken by entities or projects that opt to implement measures aimed at mitigating their greenhouse gas emissions.
- **Project-Based:** VERs are commonly produced through dedicated emission reduction initiatives, akin to other carbon credit schemes such as the Clean Development Mechanism (CDM) or Joint Implementation (JI).
- **Verification and certification:** Similar to other carbon credits, **the emission reductions linked to Verified Emission Reductions (VERs) necessitate verification**



**and certification conducted by impartial third-party auditors.** The verification process ascertains the emission reductions' authenticity, incremental nature, and verifiability.

- **Applications:** Voluntary Emission Reductions (VERs) can be utilized by various companies, organizations, or individuals to showcase their dedication to sustainability and mitigate carbon emissions. Certain companies proactively acquire Verified Emission Reductions (VERs) to counterbalance their greenhouse gas emissions and demonstrate their commitment to environmental stewardship.
- **Carbon Markets:** Voluntary carbon markets frequently witness the trading of Verified Emission Reductions (VERs). The demands differ from the compliance-oriented markets linked to regulated emissions reduction programs.
- **Use in Corporate Social Responsibility (CSR):** The utilization of Verified Emission Reductions (VERs) is a common practice among numerous companies as a component of their Corporate Social Responsibility (CSR) initiatives. Companies can showcase their dedication to environmental stewardship and sustainability by actively engaging in the voluntary offsetting of their emissions through Verified Emission Reductions (VERs).
- **It is crucial to acknowledge that Voluntary Emission Reductions (VERs) lack the equivalent level of regulatory support compared to carbon credits produced through obligatory initiatives such as the Kyoto Protocol or other regulatory frameworks.** Consequently, these entities are subjected to varying norms and criteria, contingent upon the certifying organization or standard employed for verification.
- The emergence of Voluntary Environmental Regulations (VERs) can be attributed to the increasing attention given to climate action and sustainability, surpassing the requirements set forth by international accords.

#### **Note to Cost Accountants:**

**The Guidance Note refers to authoritative sources or established carbon credit standards for the most recent and precise information regarding Verified Emission Reductions.**

## **2.2 The Paris Agreement on Climate Change and its essential components and significance**

The Paris Agreement is a significant global treaty ratified in 2015 within the United Nations Framework Convention on Climate Change (UNFCCC) framework. The initiative signifies a collective endeavour on a worldwide scale to tackle the issue of climate change by fostering collaboration among nations to mitigate the adverse effects of global warming. The primary goal of the agreement is to effectively reduce the increase in global temperature, ensuring that it remains much below 2 degrees Celsius compared to levels.

They were observed before the industrial period. Furthermore, the agreement aspires to achieve an even more ambitious objective of restricting the temperature rise to a maximum of 1.5 degrees Celsius.

**The Paris Agreement encompasses several fundamental components:**

- **Nationally Determined Contributions (NDCs):** The Paris Agreement proposed a bottom-up approach to Nationally Determined Contributions (NDCs), in contrast to the Kyoto Protocol's imposition of top-down emission reduction objectives mainly on wealthy countries. Each participating country establishes its voluntary climate targets and initiatives, called Nationally Determined Contributions (NDCs), per its national circumstances and capabilities.
- **Global Temperature Goals:** The primary objective of the Paris Agreement is to establish measures that effectively restrict the increase in global temperatures. The accord recognizes the imperative of maintaining global temperature increase at levels much below 2 degrees Celsius and striving to limit it to 1.5 degrees Celsius. This acknowledges numerous nations' increased susceptibility to climate change's consequences.
- **Transparency and Accountability:** It is mandatory for nations to periodically present revised Nationally Determined Contributions (NDCs) every five years, showcasing their utmost level of ambition. Additionally, they are expected to furnish details regarding their endeavours and the assistance they have gotten or extended.
- **Adaptation and Mitigation:** The agreement places equal emphasis on mitigation, which involves the reduction of greenhouse gas emissions, and adaptation, which consists of developing strategies to enhance resilience in response to the effects of climate change. It is recommended that nations incorporate these elements into their Nationally Determined Contributions (NDCs) and provide updates on their endeavours towards adaptation.
- **Support for Developing Countries:** The Paris Agreement recognizes the need to provide financial and technological assistance to poor nations to facilitate their implementation of effective climate mitigation measures and adaptation strategies in response to climate change consequences. Developed countries are expected to extend financial aid to developing countries to support mitigation and adaptation programs.
- **Loss and Damage:** The Paris Accord incorporates a provision for a periodic global stocktake every five years, which evaluates the overall advancement made by all parties towards the objectives outlined in the accord. Additionally, this process aims to identify specific areas where greater ambition is required.

**The Significance of Global Cooperation:**

The Paris Agreement represented a crucial milestone in global climate diplomacy.



## **Guidance Note on Carbon Credit Mechanism, ESG Reporting... etc.**

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The initiative successfully fostered international participation by encompassing a wide range of nations, encompassing both wealthy and developing countries, who collectively pledged to tackle the issue of climate change. The voluntary nature of this strategy enables countries to customize their climate activities according to their specific circumstances, promoting a sense of cooperation rather than imposition.

The pact acknowledges climate change's intricate and interdependent nature as a global concern, necessitating collaborative endeavours. Although the Paris Agreement does not offer an absolute resolution to the issue of climate change, it establishes a structure for ongoing global collaboration and advancement in climate mitigation efforts. The continuous endeavours of nations to improve their Nationally Determined Contributions (NDCs), bolster adaptation strategies, and cultivate global assistance exhibit their dedication to tackling a highly urgent matter in contemporary times.

## CHAPTER - 3

# Carbon Credits

### 3.1 Nature and How it Works.

Carbon credits play a crucial role in endeavours aimed at mitigating climate change by providing incentives for the reduction of greenhouse gas emissions. These units of measurement symbolize the quantification of the removal, elimination, or prevention of one metric tonne of carbon dioxide equivalent (CO<sub>2</sub>e) emissions. The foundation of carbon credits lies in the notion that it is possible to measure and assign a monetary worth to emissions reductions, incentivizing individuals, organizations, and governments to undertake measures that alleviate their carbon impact.

#### How Carbon Credits Work:

- **Greenhouse Gas Reduction Projects:** Carbon credits can be earned by participating in projects or engaging in activities that decrease greenhouse gas emissions. Some examples of such endeavours are installing renewable energy sources, reforestation, enhancements to energy efficiency, and methane absorption from landfills.
- **Certification and Verification:** Projects aimed at lowering emissions must first pass a stringent certification and verification process conducted by independent auditors. Emission reductions claimed in this way are guaranteed to be genuine, additional (they wouldn't have happened without the project) and verified through this procedure.
- **Carbon Credit Generation:** After a project's efforts to reduce emissions have been validated, a certain amount of carbon credits (also called carbon offsets) is awarded to the project. One carbon credit is issued for every tonne of carbon dioxide equivalent (CO<sub>2</sub>e) that is avoided.
- **Market and Trading:** Carbon markets allow buying and selling carbon credits. If a company has cut its emissions more than it needs to, it can sell the extra credits to another company, whereas a company that hasn't cut its emissions enough can buy credits to compensate.
- **Emissions Offsets:** Carbon credit purchasers may use their purchases for this purpose. If a company's emissions exceed its target, it can buy "carbon credits" to offset the difference.
- **Climate Finance and Projects:** Developing countries can benefit from cleaner technology and more sustainable practices by investing in emission reduction initiatives funded with the money from selling carbon credits.



### 3.2 Certification and Verification Authority of Carbon Credit Certification

- Designated Operational Entities (DOEs) or Independent Entities are typically responsible for certifying and verifying carbon credits. To guarantee the honesty and reliability of carbon credits issued for emission reduction initiatives, these organizations must first earn accreditation from either an international standards organization or a national authority. Their area of expertise is checking that.
- Projects' promises of reduced emissions are accurate and in line with industry norms. You can learn more about the specific expertise of these entities by reading the following:

#### Designated Operational Entities (DOEs):

- Designated Operational Entities (DOEs) are entities that have been officially designated and authorized to carry out specific operational activities related to the implementation of projects under the Clean Development Mechanism (CDM).
- Distributed Organisational Entities (DOEs) are autonomous entities that have obtained accreditation from internationally recognized standards organizations, such as the Executive Board of the Clean Development Mechanism (CDM) or national regulatory bodies.
- The primary responsibility of these individuals is to perform the validation and verification processes for emission reduction initiatives to ensure their adherence to recognized procedures, standards, and guidelines.
- The responsibility of analysing project documentation, monitoring data, and conducting on-site visits to verify the integrity of emission reduction claims lies with the Designated Operational Entities (DOEs).
- The responsible parties verify that the projects are appropriately developed, adhere to authorized techniques, and satisfy the criterion of additionally, which refers to the achievement of emission reductions that would not have transpired in the absence of the project.
- Upon the completion of the verification procedure, the Designated Operational Entities (DOEs) generate a verification report, which acts as the fundamental document for issuing carbon credits.

#### Independent Entities

- In addition, Besides the Designated Operational Entities (DOE) approved businesses operating under specific programs such as the Clean Development Mechanism (CDM), independent organizations **provide carbon credit verification services inside voluntary carbon markets and other efforts aimed at reducing emissions.**

- These **entities have expertise verifying emission reduction initiatives across various sectors, technologies, and standards.**
- Autonomous organizations adhere to defined verification standards to evaluate the project's calculations of emission reductions, methodology, and practices of execution.
- The primary objective of their efforts is to assure the precise quantification of emission reductions while ensuring that these reductions align with the stipulations set forth by the selected carbon credit standard.

**Specialization:**

- The **expertise of Designated Operational Entities (DOEs) and independent entities primarily resides in greenhouse gas accounting, emission reduction strategies, and the concepts of additionally and verification.**
- The individuals possess a comprehensive knowledge of **several industries, technologies, and project categories**, enabling them to evaluate and authenticate assertions on the decrease of emissions effectively.
- The proficiency of these individuals contributes to the assurance that projects conform to the fundamental principles of transparency, correctness, and integrity. These principles are of utmost importance in upholding the credibility of carbon credits and programs aimed at reducing emissions.
- It is imperative to acknowledge that the accreditation and recognition of Designated Operational businesses (DOEs) and independent companies can exhibit variability contingent upon the particular carbon credit standard, mechanism, or market with which they are affiliated. Before interacting with a verification organization, it is imperative for the project.
- Developers and stakeholders to ascertain that this entity possesses accreditation or **recognition from the pertinent authority or standard-setting body.**

**1.3 Guidelines to Provide Certification and verification under CDM project by Cost Accountants**

- The certification and verification processes for carbon credits often necessitate specialized knowledge in greenhouse gas accounting, emission reduction strategies, and sustainability practices. **Although a Cost Accountant may possess expertise in financial and accounting, the technological and environmental dimensions associated with carbon credit certification and verification may lie beyond their conventional purview.**
- **There have been ongoing deliberations over the potential engagement of professionals such as Cost Accountants in activities linked to carbon credits, particularly in voluntary carbon markets or for organizations actively pursuing**



**measures to reduce emissions.** The legislation and requirements about the certification and verification of carbon credits may exhibit variation contingent upon the jurisdiction and the specific criteria being adhered to.

### **Carbon certification needs technological and environmental expertise.**

Accurate, trustworthy, and reliable carbon credit certification and verification requires a blend of technological, environmental, and accounting expertise.

### **Carbon certification and verification calls for the following critical technical and environmental competencies:**

- **Greenhouse Gas Accounting:** Accounting for Greenhouse Gases Knowing the basics of greenhouse gas accounting is crucial. Doing so requires understanding the many greenhouse gases, their respective global warming potentials, and the methods for measuring emissions and removals.
- **Emission Reduction Methodologies:** A working knowledge of various emission reduction approaches is crucial. Emissions reductions are calculated in multiple ways for various projects, including installing renewable energy sources, upgrading existing buildings' energy efficiency features, and reforestation.
- **Data Collection and Analysis:** Data collection, processing, and interpretation skills are paramount. To be eligible for carbon credit certification, emission sources, activity data, and emission variables must be measured and tracked accurately.
- **Environmental Sciences:** Assessment of a project's environmental context is aided by a familiarity with fundamental environmental science concepts such as carbon cycles, climate change consequences, and carbon sequestration.
- **Sustainability Principles:** Understanding sustainability principles like additionally (making sure emissions reductions wouldn't have occurred without the project) and permanence (making specific emission reductions will last) is crucial.
- **Carbon Credit Standards:** The particular requirements for project validation and verification vary amongst carbon credit standards (such as CDM, VCS, and Gold Standard), so familiarity with these frameworks is crucial.
- **Remote Sensing and GIS:** Geographic Information Systems (GIS) and Remote Sensing: Some initiatives utilize GIS and remote sensing to map and monitor land-use changes, deforestation, and reforestation.
- **Measurement and Monitoring Techniques:** Accurate data collection relies on precise measurement and monitoring techniques for emission sources (such as energy use and trash production).
- **Environmental Regulations:** Emissions reduction and carbon credit programs require knowledge of local and international environmental rules.

- **Project Management:** Coordination of the project's documentation, data collecting, and verification processes requires strong project management skills.
- **Reporting and Documentation:** Competence in drafting precise and exhaustive reports and documentation supporting project verification and validation.
- **Stakeholder Engagement:** Capacity to interact with project stakeholders, effectively convey results, and handle issues.
- **Quality Assurance:** Ensuring everything you record is correct and complete.
- **Integrity and honesty:** Always do your best to do the right thing, and never put your interests ahead of your employer or clients.
- **Continuous Learning:** Keeping up to date with the latest information regarding emission reduction strategies, regulations, and technology is essential.
- **Communication Skills:** *To achieve a thorough and accurate verification process, it is essential to work with specialists in adjacent domains such as environmental science, engineering, and sustainability*, in addition to technological and ecological skills. Developing these skill sets successfully requires formal education, professional certifications, and work experience.

**If a Cost Accountant expresses interest in offering carbon credit certification or verification services, it is advisable to contemplate the subsequent steps:**

- **Develop Proficiency:** Attain a comprehensive comprehension of strategies for reducing emissions, principles governing greenhouse gas accounting, and pertinent requirements for carbon credits.
- **Training:** It is advisable to contemplate engaging in specialized training programs that focus on environmental accounting, sustainability reporting, and procedures for verifying carbon credits.
- **Collaboration:** Collaboration is essential in ensuring accurate and trustworthy verification in environmental science, sustainability, and carbon credit markets. Engaging with specialists in these domains is imperative to foster collaborative efforts.
- **Accreditation:** Investigate the presence of accreditation or certification programs about carbon credit verification within your geographical area.
- **Stay Updated:** Ensure you remain informed: Stay abreast of the most recent advancements in carbon credit standards, methods, and verification prerequisites.
- **Consultation:** Before delivering certification or verification services, it is imperative to engage in discussions with pertinent authorities, carbon credit



standards organizations, and legal professionals to guarantee adherence to regulatory requirements.

- **Specialisation:** Concentrating on particular sectors or categories of emission reduction initiatives in which your proficiency as a Cost Accountant can contribute significant value is advisable.

***Professional cost accountants interested in helping businesses earn carbon credits might look into careers in carbon accounting, sustainability reporting, or financial consulting with companies working on emission reduction programs.***

### **3.4 Various strategies can be employed to mitigate emissions.**

- **Energy Efficiency:** Emissions can be drastically cut by increasing energy efficiency in homes, businesses, and public transportation.
- **Renewable Energy:** Switching to renewable energy sources like solar, wind, and hydropower can help reduce emissions significantly compared to continuing to use fossil fuels.
- **Afforestation and Reforestation:** Afforestation and reforestation help remove CO<sub>2</sub> from the air by recovering forests and planting new trees.
- **Carbon Capture and Storage (CCS):** CCS, or carbon capture and storage, is a set of technologies that sequester carbon dioxide (CO<sub>2</sub>) emissions from sources including factories and power plants.
- **Waste Management:** Waste management practices aid in reducing emissions, including recycling and limiting methane released from landfills.
- **Sustainable Agriculture:** Agricultural emissions can be reduced, and soil carbon sequestration enhanced through sustainable farming practices.
- **Transportation Solutions:** Emissions from the transportation sector can be reduced by encouraging people to use alternative modes of transportation, such as electric vehicles, public transit, and bicycles.
- **Regulatory Measures:** Governments can take regulatory action by establishing carbon reduction objectives, enacting rules, and promoting renewable energy policies.
- **Behavioural Changes:** Reducing emissions can be aided by encouraging people to change their behaviour and use less energy and waste.
- **Carbon Pricing:** Carbon pricing mechanisms such as carbon taxes or emissions trading systems should be implemented to encourage emission reduction across sectors.

The combined efforts of these strategies help reduce emissions in a way that can help alleviate climate change's worst effects.



### 3.5 Verified Emission Reduction (VER):

Verified Emission Reductions (VERs), alternatively referred to as Voluntary Emission Reductions, pertain to a category of carbon credits that are produced via emission reduction initiatives that fall beyond the purview of obligatory international agreements such as the Kyoto Protocol or domestic rules. In contrast to carbon credits earned through regulated emission reduction programs, Verified Emission Reductions (VERs) are frequently generated voluntarily by organizations, initiatives, or individuals seeking to mitigate their carbon emissions proactively.

### 3.6 Guidelines for VERs: A Standardisation Programme

- Carbon credits, or Verified Emission Reductions (VERs), are produced through emission reduction programs that fall beyond the purview of mandated international agreements like the Kyoto Protocol or national rules. VERs are typically generated voluntarily by organizations, projects, or individuals intending to take proactive actions to decrease their carbon footprint, as opposed to other carbon credits earned within the context of controlled emission reduction programs.

#### The following are some of the defining features of VERs:

- **Voluntary Nature:** VERs are not required to meet any specific emission reduction goals established by any international treaty or legislation because of their voluntary nature. They're made by organizations or initiatives that voluntarily cut their carbon footprint.
- **Project-Based:** Similar to carbon credit systems like the Clean Development Mechanism (CDM) and Joint Implementation (JI), VERs are typically created through project-based emission reductions.
- **Verification and Certification:** Independent third-party auditors must verify and certify the emission reductions related to VERs as with other carbon credits. The authenticity, additionally, and verifiability of the emission cuts are guaranteed by this check.
- **Applications:** Carbon offsetting and sustainability commitment proof for businesses, organizations, and individuals through voluntary emission reductions (VERs). To demonstrate their commitment to environmental protection, some companies buy VERs on their dime.
- **Voluntary Carbon Markets:** VERs are frequently traded in these carbon markets. Compliance-based markets related to regulated emission reduction programs are distinct from these markets.
- **Use in Corporate Social Responsibility (CSR):** Corporate social responsibility (CSR) uses for VERs are becoming increasingly common, with many corporations adopting this practice. Businesses can show they care about the environment and sustainability by voluntarily offsetting their emissions with verified emission reductions (VERs).



**Unlike carbon credits created under required programs like the Kyoto Protocol or other regulatory regimes, VERs do not have the same regulatory basis. As a result, the criteria and standards applied to them vary with the organization doing the certifying or the bar being utilized.**

Beyond what international accords require, a growing interest in climate action and sustainability gave rise to the concept of VERs. We advise Cost Accountants to contact official sources or recognized carbon credit standards.

### 3.7 Carbon credit standard

Carbon credit standards refer to a set of specified principles and criteria that are a foundation for calculating, verifying, and issuing carbon credits. These standards are designed to uphold the integrity, transparency, and credibility of emission reduction programs and the carbon credits they produce. Multiple international and national rules in place serve to govern carbon credit markets and facilitate the advancement of sustainable development. **The following are widely recognized carbon credit standards:**

- **Clean Development Mechanism (CDM):** The Clean Development Mechanism (CDM) is a project-based mechanism established within the framework of the United Nations Framework Convention on Climate Change (UNFCCC). The organization is responsible for issuing Certified Emission Reductions (CERs) about initiatives to reduce emissions in developing nations. The projects must conform to particular procedures and pass a rigorous verification process.
- **Verified Carbon Standard (VCS):** The Verified Carbon Standard (VCS) is widely recognized as a prominent voluntary carbon credit standard that plays a crucial role in guaranteeing the integrity and reliability of emission reduction programs. The primary emphasis is placed on transparency, correctness, and consistency in project documentation, verification processes, and the issuing of Verified Carbon Units (VCUs).
- **Gold Standard:** The Gold criterion is optional beyond mere carbon reductions and emphasizes the co-benefits of sustainable development. In addition to reducing emissions, projects must satisfy social, environmental, and economic objectives. Projects certified by the Gold Standard can produce Verified Emission Reductions (VERs).
- **Climate Action Reserve (CAR):** The Climate Action Reserve (CAR) is an American voluntary carbon standard that functions exclusively within the geographical boundaries of North America. The organization allocates Climate Reserve Tonnes (CRTs) to emission reduction projects and adheres to stringent verification and reporting protocols.
- **Plan Vivo Standard:** The Plan Vivo Standard emphasizes programs centered around reforestation, afforestation, and conservation that are community-

based. The primary objective is to assist small-scale farmers and nearby communities while concurrently accomplishing the carbon sequestration process.

- **American Carbon Registry (ACR):** The American Carbon Registry (ACR) is a standard in the United States that certifies projects to reduce emissions. It also offers American Carbon Registry Offset Credits (ACROCs) specifically to participate in voluntary carbon markets.
- **ISO 14064:** The ISO 14064 series is a set of standards established by the International Organisation for Standardisation (ISO) that offer guidance on quantifying, monitoring, and reporting greenhouse gas emissions and removals.
- **Programme for Endorsement of Forest Certification (PEFC):** The Programme for Endorsement of Forest Certification (PEFC) is an internationally recognized certification system for forest management. Although not limited to a carbon credit standard, forests certified by the Programme for the Endorsement of Forest Certification (PEFC) significantly contribute to carbon sequestration and sustainable forest management.

***The standards above play a vital role in guaranteeing carbon credit markets' transparency, legitimacy, and environmental integrity.*** The measures presented aim to offer a framework for project developers, verification organizations, and market participants to adhere to throughout the various stages of emission reduction project implementation, verification, and the issue of carbon credits. It is imperative to acknowledge that the accessibility and acknowledgment of diverse carbon credit standards may alter based on geographical areas, markets, and legal frameworks.

### 3.8 Credits for Carbon Emissions

- The computation of carbon credits is a fundamental aspect of carbon offsetting. Calculating carbon credits entails the assessment of the quantity of greenhouse gas emissions that have been diminished, prevented, or eliminated as a result of a particular project or activity. **The following is a comprehensive overview of the methodology employed in the calculation of carbon credits:**
- **Baseline Emissions:** The initial step involves establishing a baseline as a reference point for the anticipated emissions level without project implementation. Various factors, including historical data, industry standards, and prevailing best practices, frequently influence the establishment of this baseline.
- **Emission Reductions:** Emission reductions are determined by measuring or estimating the actual emissions following the implementation of the project once the baseline has been established. The disparity between the baseline emissions and the observed emissions signifies the extent of emission reductions accomplished by the project.



- **Conversion to CO<sub>2</sub>e:** Converting greenhouse gases to carbon dioxide equivalents involves accounting for their distinct global warming potentials. To accommodate for this phenomenon, the emissions of various gases are transformed into carbon dioxide equivalents (CO<sub>2</sub>e), enabling a standardized assessment of their respective warming effects.
- **Certification and Verification:** Certification and verification processes involve the engagement of impartial third-party auditors responsible for verifying the correctness of emission reductions and associated calculations. The verification method serves to establish the credibility of the carbon credits.
- **Credit Issuance:** The issuance of credits occurs after the verification of emission reductions, whereby the project is allocated a designated quantity of carbon credits. **Each credit corresponds to a decrease of one metric tonne of carbon dioxide equivalent (CO<sub>2</sub>e).**
- **Monitoring and Reporting:** Monitoring and reporting are essential components of project management, enabling the ongoing assessment and documentation of emissions. This process is crucial to ensure sustained emissions reduction over an extended period.

Accurately determining carbon credits necessitates precision and strict adherence to set criteria to guarantee that the credits accurately reflect genuine and supplementary reductions in emissions.

### 3.9 The importance and practical application of carbon credits in India

- In India, carbon credits function within global carbon markets and voluntary carbon standards. This Guidance Note provides a comprehensive analysis of the relevance and use of carbon credits in the context of India.
- **Clean Development Mechanism (CDM):** The Clean Development Mechanism (CDM) was formed under the Kyoto Protocol to provide opportunities for developing countries like India to participate. Indian firms and project developers can conduct emission reduction projects that result in the generation of Certified Emission Reductions (CERs) through the Clean Development Mechanism (CDM). The transferable Certified Emission Reductions (CERs) might be traded to developed nations that have committed to mandatory emission reduction objectives, assisting them in achieving their targets cost-efficiently.
- **CDM Projects in India:** India has emerged as a prominent contributor to the Clean Development Mechanism (CDM), showcasing many initiatives to reduce greenhouse gas emissions across diverse industries. The projects encompass a range of initiatives, such as implementing renewable energy systems (including wind, solar, and hydro installations), enhancing energy efficiency within industrial sectors, capturing methane emissions from landfills, and more endeavours. **The**



***proceeds from the sale of Certified Emission Reductions (CERs) played a pivotal role in providing financial backing for sustainable development endeavours in India.***

- **Voluntary Carbon Market:** India actively engages in the voluntary carbon market and participates in the Clean Development Mechanism (CDM). This particular market pertains to the production and exchange of Verified Emission Reductions (VERs), often known as voluntary carbon credits. Indian corporations and institutions can engage in voluntary emission reduction initiatives, generating Verified Emission Reductions (VERs). These VERs can offset their emissions or be traded to environmentally conscientious purchasers.
- **Renewable Energy and Emission Reduction:** The rise of renewable energy in India aligns with attempts to reduce emissions. The expansion of solar, wind, and other renewable energy sources significantly reduces the energy sector's carbon intensity and lowers emissions.
- **Domestic programs:** Besides international procedures, India has implemented various domestic programs to tackle climate change and foster sustainable practices. The initiatives above encompass the National Action Plan on Climate Change (NAPCC) and the National Clean Development Mechanism Authority (NCDMA), which assumes responsibility for the supervision of Clean Development Mechanism (CDM) projects inside the nation.
- **Corporate Social Responsibility (CSR):** Corporate Social Responsibility (CSR) is a practice adopted by numerous Indian firms. They incorporate initiatives focused on carbon offsetting and emission reduction projects as part of their CSR endeavours. This entails proactively adopting measures to reduce carbon impact and supporting sustainable development.
- **Issues and Opportunities:** Despite notable advancements in carbon markets and emission reduction in India, some issues still need to be addressed. These challenges include ensuring project integrity, dependable data gathering, and harmonizing with the country's overarching development objectives. Nevertheless, the increasing focus on sustainable development and climate action gives India the prospects to maintain its substantial involvement in global efforts to reduce emissions.

#### **Note for Cost Accountants:**

Acknowledging that the particulars concerning India's engagement in carbon credit markets and projects may have changed is imperative. To ensure access to the most current and reliable information, we advise cost accountants to go to authoritative governmental sources and reputable international climate organizations.



### 3.9.1 Key to the Indian Carbon Credit Market

- The development, expansion, and potential of the Indian carbon credit market are influenced by various significant aspects. **Several considerable elements contribute to the Indian carbon credit market.**
- **Government Initiatives and Policies:** India's dedication to mitigating climate change and advancing sustainable development is evident in its governmental initiatives and regulations, exemplified by the National Action Plan on Climate Change (NAPCC). Government initiatives, incentives, and restrictions influence the carbon credit market considerably.
- **Emission Reduction Projects:** The execution of emission reduction initiatives in many areas, including renewable energy, energy efficiency, waste management, and afforestation, plays a significant role in generating carbon credits. These projects are in line with India's sustainable development goals and have the potential to attract involvement in the carbon market.
- **International Mechanisms:** India lacks mandatory carbon reduction targets as a developing nation. However, it has actively engaged in international systems such as the Clean Development Mechanism (CDM). Projects in India have successfully produced Certified Emission Reductions (CERs), which are eligible for trading in global carbon markets.
- **Voluntary Carbon Markets:** The concept of voluntary carbon markets enables Indian entities, encompassing enterprises, industries, and individuals, to engage in emission reduction endeavours of their own accord. These marketplaces have prospects for acquiring Verified Emission Reductions (VERs) that can be traded or utilized for offsetting emissions.
- **Renewable Energy Expansion:** India's current emphasis on augmenting its renewable energy output, specifically in solar and wind power, catalyses mitigating emissions and potentially generating carbon credits.
- **Corporate Social Responsibility (CSR):** Corporate Social Responsibility (CSR) is a prevalent practice among Indian firms, incorporating carbon credit initiatives into their CSR programs. This strategic integration is a testament to their dedication to sustainability and active support for projects to reduce emissions.
- **Sustainability Reporting:** The incorporation of environmental sustainability practices into corporate reporting and disclosure fosters transparency and accountability, hence stimulating interest in actions related to emission reduction and carbon credits.
- **Green Finance:** The advent of green financing structures, such as green bonds and sustainable investment funds, offers financial backing for programs to reduce emissions and promote carbon credit activities.

- **Partnerships and Collaboration:** The collaboration among many stakeholders, including the government, corporate sector, non-governmental organizations (NGOs), and international organizations, is paramount in promoting the progress of emission reduction initiatives and identifying carbon credit prospects.
- **Enhancing Public Awareness:** Promoting knowledge and understanding among businesses and the broader public regarding the significance of tackling climate change and actively engaging in emission reduction endeavours stimulates market involvement.
- **Technological Innovation:** Technological innovation is being investigated to improve carbon credit tracking and verification's precision, transparency, and effectiveness. This exploration involves the utilization of many technological advancements, such as data analytics, remote sensing, and blockchain.
- **Global Climate Agreements:** International climate agreements, such as the Paris Agreement, influence India's climate policies and can potentially affect the carbon credit market through their ability to shape global targets for emission reduction and market procedures.

**Note for Cost Accountants:**

It is imperative to acknowledge that the carbon credit market ecosystem has the potential to undergo changes and developments as time progresses. Hence, it is advisable to be informed about the most recent advancements, legislation, and market trends by seeking guidance from pertinent governmental entities, industry groups, carbon credit standards organizations, and legal professionals.

**3.9.2 The Indian carbon credit market will expand thanks to AI and blockchain technology.**

- The utilization of AI (Artificial Intelligence) and blockchain technologies hold the promise of exerting a substantial influence on the Indian carbon credit market, hence augmenting its development through the enhancement of transparency, efficiency, and accuracy. The integration of artificial intelligence (AI) and blockchain technology has the potential to impact and foster market growth significantly.
- **The management of emission data:** Artificial intelligence (AI) can effectively analyse and interpret substantial quantities of data derived from diverse sources, including sensors, satellite imaging, and monitoring systems. This enables AI to quantify and authenticate emissions originating from numerous industries precisely. The utilisation of
- Blockchain technology enables the secure storage of emission data, establishing a tamper-resistant and immutable emissions record. This implementation ensures transparency and upholds the integrity of the data.



- **Verification and Auditing:** The process of verification and auditing is essential in ensuring the accuracy and reliability of information. *Artificial intelligence (AI) algorithms can automate and optimize the verification process through the analysis of project documentation and continuous data monitoring.* These algorithms can detect inconsistencies and highlight potential concerns, which human experts can review. The transparent and auditable characteristics of blockchain technology have the potential to streamline the auditing process, enabling regulators and stakeholders to obtain verifiable emission data and project information quickly.
- **Smart Contracts:** Smart contracts are computer programs that automatically execute predefined actions when certain conditions are met. These contracts are built on blockchain technology, which ensures transparency, security, and immutability. Blockchain technology enables the automation of carbon credit issuing and trading by implementing smart contracts. The issuance and transfer of carbon credits can be automatically triggered by intelligent contracts when specific criteria, such as verifiable emission reductions, are satisfied.
- **Supply Chain Transparency:** Supply chain transparency refers to the degree to which information regarding the various stages and processes involved in a supply chain is accessible and visible to stakeholders. Artificial intelligence (AI) can monitor and analyse supply chain data, enabling the identification of emission hotspots and inefficiencies. This, in turn, facilitates the implementation of strategies by enterprises to mitigate emissions and enhance operational efficiency. The performance of blockchain technology can potentially augment the level of transparency inside supply chains. This is achieved by comprehensively recording all transactions and movements of commodities, hence mitigating the likelihood of fraudulent activities.

Additionally, blockchain can facilitate precise emissions accounting, ensuring accuracy.

- **Carbon Credit Tracking:** Using blockchain technology offers a reliable and transparent framework for monitoring the complete life cycle of carbon credits, encompassing their initial issuance and subsequent retirement. This implementation effectively mitigates the risk of duplicate counting and guarantees the authenticity and validity of these credits.
- **Verification Automation:** The utilization of AI-powered algorithms has the potential to facilitate the automation of the verification process for emission reduction initiatives. This is achieved through the analysis of real-time monitoring data in comparison to predetermined criteria and established standards.
- **Market Efficiency:** Market efficiency refers to the degree to which prices of financial assets accurately reflect all available information. It is a concept widely studied in finance and is of great importance. The implementation

of blockchain technology has the potential to establish a decentralized marketplace wherein carbon credits may be exchanged directly between buyers and sellers. This innovative approach would effectively minimize the involvement of intermediaries and thereby decrease transaction costs.

- **Public Participation:** AI-powered systems can offer instantaneous emissions data to the general public, thereby enhancing public consciousness and motivating individuals and entities to engage in activities to reduce emissions.
- **Regulatory Compliance:** Regulatory compliance refers to the adherence and conformity to laws, regulations, and guidelines set out by governing bodies and regulatory authorities. It encompasses the actions and measures taken by organizations. Utilizing blockchain technology can support regulatory bodies in monitoring and validating initiatives to reduce emissions, guaranteeing adherence to established carbon credit criteria and regulatory frameworks.
- **Data Sharing and Collaboration:** Data sharing and collaboration are essential in academic research and scientific endeavours. Blockchain technology's safety and permission characteristics facilitate efficient data sharing and collaboration across stakeholders such as project developers, verifiers, and regulators.
- It is imperative to acknowledge that integrating AI and blockchain in the carbon credit market necessitates meticulous examination of technical, regulatory, and ethical aspects for effective execution. The imperative for achieving the full potential of these technologies and fostering the expansion of the Indian carbon credit market is collaboration among technical experts, environmental professionals, regulators, and industrial players.

### 3.9.3 The carbon credit market in India needs the reskilling of cost accountants to navigate the AI and blockchain technological landscape effectively.

- It is imperative to provide reskilling opportunities for cost accountants to provide them with the necessary skills to adapt to the AI and blockchain technologies prevalent in the carbon credit market in India. This is crucial to enable them to traverse the dynamic and ever-changing environment proficiently. **Presented below is a comprehensive framework outlining the process of reskilling Cost Accountants:**
- **Understand AI and Blockchain Basics:** The initial step involves a comprehensive understanding of the fundamental concepts behind artificial intelligence (AI) and blockchain technologies, encompassing their core principles and diverse applications within the carbon credit market.
- **Environmental and Carbon Credit Context:** Acquire comprehensive knowledge about emission reduction strategies, carbon credit standards, and the broader carbon credit market ecosystem within the context of India.



- **Data Analytics and AI:** This educational module aims to provide an overview of data analytics methodologies, machine learning algorithms, and artificial intelligence (AI) tools often employed in data analysis, emissions modelling, and prediction.
- **Blockchain Fundamentals:** This study focuses on examining blockchain technology, encompassing its various components, varieties of blockchains, consensus methods, and its pivotal function in facilitating transparent data management.
- **Carbon Credit Verification:** This inquiry pertains to comprehending the verification process, methodology, and data requirements associated with emission reduction initiatives and the issue of carbon credits.
- **Emission Data Management:** Discover how artificial intelligence (AI) can facilitate examining and administrating emission data to ensure precise reporting and verification.
- **Smart Contracts and Automation:** This paper aims to investigate the automation of several operations, such as verification, issuance, trading, and auditing of carbon credits, using blockchain-based smart contracts.
- **Supply Chain and Transparency:** This inquiry explores the potential of artificial intelligence (AI) and blockchain technology in augmenting transparency within supply chains and facilitating the monitoring of emissions data along the value chain.
- **Legal and Regulatory Considerations:** Examine the legal and regulatory dimensions of using artificial intelligence (AI) and blockchain technology in the context of carbon credit verification and trading. This analysis encompasses an exploration of data privacy and security considerations.
- **Applications in Specific Industries:** - Examine practical implementations of artificial intelligence and blockchain technologies in projects aimed at reducing emissions, promoting renewable energy, managing forestry resources, and other relevant industries.
- **Ethical and Social Implications:** - The ethical and social implications of artificial intelligence (AI) and blockchain technology in carbon credit markets warrant careful consideration. These implications encompass aspects such as transparency, accountability, and social equality.
- **Continuous Learning:** Maintain up-to-date knowledge regarding the newest breakthroughs in artificial intelligence and blockchain technology and their incorporation within the carbon credit market.
- **Collaboration and Networking:** - Establish connections with individuals, organizations, and specialists in artificial intelligence, blockchain technology,

and the carbon credit domain to facilitate the sharing of knowledge and insights.

- **Practical Projects:** - Engage in hands-on activities focused on applying artificial intelligence and blockchain technology in the context of emission reduction initiatives, carbon credit monitoring, and data analysis.
- **Certification and Training:** - It is advisable to contemplate enrolling in educational courses, workshops, and certification programs that specifically address the domains of artificial intelligence, blockchain technology, and environmental sustainability.
- Cost Accountants have the opportunity to enhance their professional standing within the carbon credit market's technological advancement by acquiring expertise in AI and blockchain technology. Integrating financial experience and technical abilities will be paramount in facilitating transparent, precise, and efficient carbon credit verification and trading procedures.

#### **3.9.4 The advantages of carbon credits**

- Both buyers and sellers in the carbon credit market might derive numerous advantages contingent upon their objectives and motives. Below is an analysis of the benefits from two different viewpoints:

##### **Advantages for Purchasers of Carbon Credits:**

- **Carbon Neutrality and Emissions Offsetting:** The attainment of carbon neutrality can be accomplished by purchasers by acquiring carbon credits, which balance their emissions. This is by their objectives related to sustainability and signifies a dedication to upholding environmental accountability.
- **Compliance with Regulatory Obligations:** In certain instances, organizations may be obligated to mitigate their carbon emissions as mandated by regulatory frameworks or industry norms. Acquiring carbon credits enables individuals or organizations to fulfil these stipulations effectively.
- **Sustainable Branding:** Procuring carbon credits facilitates a company's endeavours in sustainable branding, enabling them to effectively convey their dedication towards mitigating climate change and reducing their carbon emissions.
- **Supporting Emission Reduction Projects:** Buyers indirectly support emission reduction efforts, including but not limited to initiatives focused on renewable energy, afforestation, and energy efficiency. This phenomenon contributes to favourable social and environmental outcomes.
- **Market Access to Emission Reductions:** Carbon credits allow purchasers to acquire emission reductions accomplished in diverse industries and



geographical areas, thereby circumventing the difficulties of independently completing such projects.

- **Advantages for Carbon Credit Sellers:**
- **Monetization of Environmental Efforts:** The monetization of environmental efforts can be achieved by organizations through the implementation of emission reduction programs, which enables them to generate additional cash by selling carbon credits.
- **Project Financing:** Project financing involves using carbon credits to secure funds for projects aimed at reducing emissions. This approach enables organizations to allocate resources towards sustainability initiatives that may pose financial difficulties otherwise.
- **Project Viability and Attractiveness:** Including carbon credit revenue can potentially increase the feasibility and appeal of emission reduction initiatives, hence garnering greater interest from investors and stakeholders.
- **Enhanced Corporate Reputation:** Selling carbon credits serves as evidence of an organization's dedication to environmental stewardship, establishing its reputation as a responsible and forward-thinking corporate entity.
- **Alignment with Sustainability Goals:** Selling carbon credits is by an organization's sustainability and corporate social responsibility (CSR) objectives, thereby strengthening their dedication to positively influencing the environment.
- **Market Participation:** By entering the expanding global carbon credit market, organizations can partake in emissions trading and contribute meaningfully to international endeavours to mitigate climate change.

***It is crucial to acknowledge that the efficacy of the carbon credit market hinges upon the implementation of rigorous procedures, transparent verification processes, and adherence to established criteria. These measures are essential to guarantee the credibility of emission reductions and traded credits, benefiting buyers and sellers.***

### 3.9.5 Methods for Acquiring Carbon Credits

- The process of obtaining carbon credits encompasses a range of techniques and strategies that enable organizations to compensate for their greenhouse gas emissions or contribute to initiatives aimed at reducing emissions. **The following are several prevalent approaches for obtaining carbon credits:**
- **Project Development:** Organisations can commence and execute projects aimed at reducing emissions, including the establishment of renewable energy systems, afforestation efforts, enhancements in energy efficiency, and the implementation of waste management strategies. Through the attainment of

quantifiable reductions in emissions, these initiatives generate carbon credits that can be either traded or utilized to counterbalance the emissions of the entity.

- **Procurement in the Voluntary Carbon Market:** Entities can acquire carbon credits from initiatives that have successfully produced Verified Emission Reductions (VERs) or other acknowledged forms of carbon credits within the voluntary carbon market. This enables them to support emission reduction initiatives without physically executing the projects.
- **Offset Programmes:** Certain organizations provide offset programs that enable people or corporations to assess their emissions and acquire carbon credits to compensate for their environmental impact. These programs frequently support various initiatives and offer citizens an easy avenue to engage in activities aimed at reducing emissions.
- **Renewable Energy Certificates (RECs):** Renewable Energy Certificates (RECs) are produced by renewable energy projects to signify the environmental characteristics of the energy they create. Organizations can acquire Renewable Energy Certificates (RECs) to align their electricity usage with renewable energy generation, providing indirect support for the reduction of emissions.
- **Carbon Neutral Certification:** The attainment of carbon neutrality certification is a process wherein organizations calculate their emissions, diligently endeavour to minimize them and get carbon credits to compensate for any residual emissions. The acquisition of this certification serves as evidence of the organization's dedication to mitigating its environmental footprint.
- **Supporting Sustainable Development Projects:** Carbon credit programs can be essential in supporting sustainable development projects that aim to mitigate emissions and foster social and economic advancement. Organizations can acquire these credits to facilitate both the mitigation of emissions and the promotion of favourable social impacts.
- **Carbon Credit Exchanges:** Carbon credit exchanges play a vital role in facilitating the trade of carbon credits between individuals or entities seeking to buy or sell these credits. Organizations can obtain carbon credits from projects listed on these exchanges, thereby assuring transparency and adherence to established norms.
- **Partnerships and Collaborations:** Organisations can collaborate with project developers, non-governmental organizations (NGOs), and governmental entities to assist projects to reduce emissions. These collaborations may encompass direct monetary assistance or alternative modes of contribution.
- **Offset Subscriptions:** Certain companies provide offset services through subscriptions, in which individuals or businesses make a recurring commitment



to purchase a specific quantity of carbon credits. This initiative offers continuous assistance to projects aimed at reducing emissions.

- **In-House Emission Reductions:** Organisations can apply internal measures to reduce their emissions, afterward utilizing the emissions reductions attained to generate their carbon credits.

**When procuring carbon credits, it is imperative to ascertain that the credits originate from reputable and validated emission reduction initiatives.** This method entails the selection of established carbon credit standards, performing thorough research on the quality of projects, and validating the authenticity of the credits through third-party verification procedures.

### **3.9.6 Credit Acquisition Methods in General**

- The process of acquiring carbon credits includes implementing plans and activities that result in measurable reductions in emissions or adopting sustainable practices. **Outlined below are many overarching tactics that organizations might implement to acquire carbon credits:**
- **Renewable Energy Projects:** Renewable Energy Projects are initiatives aimed at harnessing and utilizing sustainable energy sources. These projects focus on the development and implementation of technologies that generate power from renewable resources.
- **Energy Efficiency Improvements:** It is advisable to allocate resources towards investments in renewable energy sources such as solar, wind, hydro, or geothermal power generating.

One potential strategy to align energy use with clean energy generation is implementing Renewable Energy Certificates (RECs), which can be developed or purchased.

- **Enhancements in Energy Efficiency:** Using energy-efficient technologies, processes, and equipment is crucial to mitigate energy usage and subsequent emissions effectively.

Enhance the efficiency of lights, HVAC systems, insulation, and appliances by replacing them with more advanced models.

- **Waste Management and Recycling:** To mitigate the environmental impact of garbage disposal, it is recommended to institute waste reduction and recycling initiatives to divert waste from landfills and reduce methane emissions.
- **Afforestation and Reforestation:** One potential strategy for mitigating the accumulation of carbon dioxide in the atmosphere is the implementation of tree planting initiatives and forest restoration efforts. Engage in reforestation initiatives aimed at augmenting biodiversity and sequestering carbon.

- **Carbon Capture and Storage (CCS):** Carbon Capture and Storage (CCS) is a technology that involves the capture, transportation, and storage of carbon dioxide (CO<sub>2</sub>) emissions from various sources, including power plants and industrial facilities. The primary objective of CCS is to mitigate the release. Implement technology that effectively captures and securely stores industrial activities' carbon dioxide emissions. It is advisable to allocate resources towards investing in direct air capture devices designed to effectively extract carbon dioxide from the atmosphere.
- **Sustainable Agriculture Practices:** Sustainable agriculture practices refer to a set of methods and techniques employed in the cultivation of crops and raising of livestock that aim to minimize adverse environmental impacts, preserve natural resources, incorporate agricultural methodologies aimed at mitigating emissions derived from farming activities, including but not limited to no-till farming, crop rotation, and agroforestry.
- **Emission Reduction Initiatives:** Emission reduction initiatives refer to the various measures and actions undertaken to mitigate and decrease the release of harmful pollutants and greenhouse gases into the atmosphere. These initiatives are implemented to enhance transport and logistics operations to minimize fuel usage and emissions. To mitigate the environmental impact of travel, it is recommended to adopt telecommuting and remote work policies. By implementing these rules, organizations can effectively reduce emissions associated with travel.
- **The Construction of Sustainable Infrastructure:** The objective is to develop and fabricate structures including environmentally friendly features such as green roofs, adequate insulation, and energy-efficient lighting and appliances.
- **Advocating for the Advancement of Clean Technologies:** It is imperative to allocate resources and provide backing for advancing pioneering clean technology to mitigate emissions across diverse industrial sectors.
- **Participation in Emission Reduction Programs:** Engage in government-led programs or efforts to reduce emissions, which provide incentives for adopting sustainable practices.
- **Collaboration and Partnerships:** Engage in collaborative efforts with other organizations, non-governmental organizations (NGOs), and governmental entities to collectively embark on projects to reduce emissions.
- **Educational and Awareness Campaigns:** Educational and awareness campaigns are initiatives to disseminate knowledge and promote understanding among individuals. These campaigns are designed to raise awareness about specific issues or topics, aiming to educate the public and foster positive behaviour. The primary objective is to enhance consciousness regarding sustainable practices



within the organization and motivate employees to embrace environmentally conscious behaviours.

- **Carbon Offsetting:** Acquire carbon credits from certified projects to compensate for emissions that are not readily reducible.
- **Sustainable Supply Chains:** The concept of sustainable supply chains refers to integrating environmentally and socially responsible practices throughout the supply chain process. Collaborate with suppliers to enhance the sustainability of the complete supply chain, thereby decreasing emissions linked to manufacturing and transportation.
- **Innovation and Research:** It is recommended to allocate resources towards research and development endeavours to uncover novel potential for emission reduction and innovative solutions.

***Organizations should opt for tactics that are by their respective industry, operational practices, and sustainability objectives to efficiently acquire carbon credits. In addition, entities must adhere to established carbon credit protocols, diligently assess and validate emission reductions with precision, and actively participate in transparent reporting and verification procedures.***

## CHAPTER - 4

# Carbon Market & Regulation

### 4.1 Energy Conservation (Amendment) Bill, 2022

|                   |                    |                     |
|-------------------|--------------------|---------------------|
| <b>Introduced</b> | <b>passed</b>      | <b>passed</b>       |
| <b>Lok Sabha</b>  | <b>Lok Sabha</b>   | <b>Rajya Sabha</b>  |
| <b>Aug3, 2022</b> | <b>Aug 8, 2022</b> | <b>Dec 12, 2022</b> |

#### Key Features of the Legislation

The proposed legislation seeks to modify the Energy Conservation Act of 2001 to grant the central government the authority to establish a carbon credit trading scheme.

- It may be necessary for designated customers to fulfil a certain amount of their energy demands by utilizing non-fossil fuel sources.
- The Energy Conservation Code for buildings will also apply to office and residential buildings with a connected load of 100 kilowatts or above.

***Energy consumption guidelines can be established for both automobiles and ships.***

- **The primary concerns and examination**

- The primary objective of carbon credit trading is to mitigate carbon emissions and, thus, tackle the issue of climate change. The inquiry pertains to the suitability of the Ministry of Power as the regulatory authority for this particular plan. An additional investigation concerns including a designated market regulator for carbon credit trading within the legislative framework.
- The activity above has the potential to qualify for certificates related to renewable energy, energy conservation, and carbon credits. The Bill does not explicitly indicate whether there would be provisions for the interchangeability of these certificates.
- Designated users are required to fulfil specific obligations about utilizing non-fossil energy sources. Due to the restricted level of competition among distribution companies (discoms) within a particular region, consumers may have a lack of options when selecting their preferred energy mix.

- **The primary characteristics**

- **Carbon Trading Scheme:** The proposed legislation grants authority to the federal government to establish a carbon credit trading scheme. The concept of carbon credit refers to a transferable authorization that allows for producing a predetermined quantity of carbon dioxide or other greenhouse gas emissions. The central government or any authorized body



may issue carbon credit certificates to registered enterprises that comply with the plan. The entities will have the right to engage in the Trading of the certificates. Individuals have the option to get a carbon credit certificate voluntarily.

- **Obligation to use non-fossil energy sources: The Act grants the central government the authority to establish energy consumption requirements, imposing an obligation to utilize non-fossil energy sources.** The proposed legislation includes a provision that allows the government to mandate that selected consumers fulfil a specified proportion of their energy consumption using non-fossil fuel sources. Various consumption levels may be designated for distinct non-fossil sources and consumer classifications. The defined consumer categories include multiple industries such as mining, steel, cement, textile, chemicals, and petrochemicals, as well as the transport sector, including Railways and commercial buildings. These designations are outlined in the schedule. Non-compliance with this obligation can result in a maximum penalty of Rs 10 lakh. In addition, an additional penalty will be imposed, which may amount to twice the price of oil equivalent of energy utilized outside the prescribed norm.
- **Energy conservation code for buildings:** The legislation grants authority to the central government to establish a set of regulations known as the Energy Conservation Code for structures. The law establishes energy consumption standards based on the measurement of area. The proposed legislation seeks to modify the existing provisions to show an 'Energy Conservation and Sustainable Building Code.' The proposed code aims to set standards for energy efficiency and conservation, utilization of renewable energy sources, and additional criteria for environmentally sustainable structures. **According to the legislation, the energy conservation code applies to commercial buildings meeting two criteria:**
  - (i) **They were constructed after the announcement of the Code, and**
  - (ii) **They possess a minimum connected load of 100 kilowatts (kW) or a contract load of 120-kilo volt-ampere (kVA). According to the legislation, the office and residential structures that satisfy the conditions above will also be subject to the newly implemented Energy Conservation and Sustainable Building Code. The proposed legislation grants state governments the authority to reduce load standards.**
- **The legislation establishes criteria for automobiles and watercraft:** By the bill, energy consumption standards may be designated for machinery and devices that consume, generate, transfer, or provide energy. The proposed legislation broadens its applicability to encompass automobiles, as defined in the Motor Automobiles Act of 1988, and vessels, encompassing ships and boats. Non-compliance with established standards would result in a

maximum penalty of Rs 10 lakh. Failure to comply with regulations regarding containers will result in an additional liability of up to twice the monetary value of the energy consumed Over the specified standard. Vehicle makers found to be in non-compliance with fuel consumption regulations will be subject to a penalty of a maximum of Rs 50,000 per unit of vehicles supplied.

- **Composition of the governing council of BEE:** The composition of the governing board of BEE refers to the structure and membership of the committee responsible for overseeing and making decisions on implementing and managing BEE (Black Economic Empowerment) policies and initiatives. The legislation facilitates the establishment of the Bureau of Energy Efficiency (BEE). The Bureau is governed by a council consisting of a membership ranging from 20 to 26 individuals. The individuals involved in this process consist of three main groups: (i) the secretaries of six departments, (ii) officials from regulatory authorities such as the Central Electricity Authority and the Bureau of Indian Standards, and (iii) a maximum of four members who represent industry and consumers. The proposed legislation seeks to modify the existing provision by stipulating that the permissible range for the number of members must be limited to a minimum of 31 and a maximum of 37. The quantity of secretaries is enhanced to a total of twelve. Additionally, it allows for including a maximum of seven individuals who will serve as representatives for both industry and consumers.

## 4.2 Analysis and Key Issues

- **Regulation of carbon credit trading**

The Bill grants the federal government the authority to mandate a trading system for carbon credits. Carbon credits, sometimes called “credits for carbon,” are tradable permits allowing the holder to release a certain quantity of carbon dioxide or other greenhouse gases. Carbon credits can be obtained through activities that decrease emissions or establish carbon-absorbing sinks, such as tree planting. If a company produces more carbon dioxide than allowed, it can buy “carbon credits” to make up the difference. To combat climate change, carbon credit trading schemes are implemented to curb emissions of greenhouse gases. Below, we address several concerns regarding the Bill's provisions.

- **The question is which is the appropriate Ministry to regulate the carbon credit trading scheme.**
- The Act designates the Ministry of Power as the lead agency for scheme regulation and the Bureau of Energy Efficiency within the Ministry of Power as the lead agency for scheme implementation. According to the Government of India (Allocation of Business) Rules, 1961, the Ministry of Power is in charge of
- Energy conservation and energy efficiency in the power sector and



- matters connected to energy policy and coordination.
- In 2016, the energy sector accounted for over 75% of India's total greenhouse gas emissions.
- However, carbon credit trading may have applications outside the energy industry. **Table 1 on the following page shows the percentage of total emissions attributed to various human activities.** As a result of its ability to sequester carbon dioxide and other greenhouse gases, the land use, land-use change, and forestry sector is the primary sector providing a net carbon sink. In 2016, this industry took in almost 11% of the net greenhouse emissions released by all other sectors combined.

### Difficulties in transitioning to non-fossil energy sources

- The Bill also allows the government to mandate that specific categories of consumers obtain a particular percentage of their total energy needs from renewable resources. Different consumption thresholds might be set depending on the type of non-fossil fuel source and the type of customer. The industries of mining, steel, cement, textile, chemicals, and petrochemicals; the transportation sector, which includes railways; and the commercial construction sector are all designated customers. The maximum fine that can be imposed for noncompliance is Rs 10 lakh. Electricity is an essential source of energy for a wide variety of products. Most people probably can't choose which power plant supplies their electricity. Any one of (i) a power distribution firm (discom), (ii) a generator, or (iii) the consumer's captive generation (producing on their own) could provide the electricity a user requires.
- **Table 1: India's Total Emissions by Sector in 2016 (in Million Tonnes CO2 Equivalent)**

| Sector   | Amount       | % Share     |
|--|--------------|-------------|
| <b>Energy</b>                                    | <b>2,129</b> | <b>75%</b>  |
| <i>Of which Energy Industries</i>                | 1207         | 43%         |
| <i>Manufacturing Industries and Construction</i> | 398          | 14%         |
| <i>Transport</i>                                 | 274          | 10%         |
| <b>Agriculture</b>                               | <b>408</b>   | <b>14%</b>  |
| <b>Industrial Processes and Product Use</b>      | <b>226</b>   | <b>8%</b>   |
| <b>Waste</b>                                     | <b>75</b>    | <b>3%</b>   |
| <b>Total</b>                                     | <b>2,839</b> | <b>100%</b> |
| <b>Land Use, land-use change, and Forestry</b>   | <b>-308</b>  |             |
| <b>Net Total</b>                                 | <b>2,531</b> |             |

Source: Table 2.35, India's Total Emissions 2011-2016, Third Biennial Update Report to The United Nations Framework Convention on Climate Change 2021, Ministry of Environment, Forest and Climate Change; PRS.



### 4.3 Stakeholders in India's carbon market: gaining insight into the future.

- The announcement of a carbon credits market by the Indian government is ground-breaking. This declaration follows on the heels of several others that show India's leadership and ambition in the fight against climate change, such as the net-zero announcement. In this context, we evaluate the viewpoints of Indian stakeholders and analyse various alternatives to carbon markets in our issue brief. We focus on and provide context for two distinct carbon market approaches: cap-and-trade (or emissions trading scheme [ETS]) and the "offset market" (project-based). The two strategies are very different from one another.

#### **The key takeaways from the stakeholder discussion are:**

- The Indian experience is entirely about the offset/ project-based approach, and there is limited understanding of the ETS approach;
- There is a need for a sustained and deep engagement on the cap-and-trade or ETS approach;
- An India-specific taxonomy is required for various types of carbon credits;
- There is scope for clarifying the meaning of 'voluntary' in the carbon markets discourse;
- Exploring alternative approaches for providing value for unsold energy saving certificates (ESCerts) and renewable energy certificates (RECs), rather than making these fungible with carbon credits, would help provide greater clarity;
- The domestic carbon offset market might not be a channel for international finance unless it is linked with other similar international ETS programs, although it can be a significant source of domestic finance and
- All three alternative forms of carbon markets—those based on the United Nations Framework Convention on Climate Change (UNFCCC), voluntary, and India's domestic ETS—could eventually co-exist in the long term.

***Our primary recommendation is that India adopt an ETS modelled after the European Union's Emissions Trading Scheme (EU-ETS) and the Korean Emissions Trading Scheme (KEETS), two of the most widely used ETS systems in Asia and worldwide. While the Indian ETS can benefit from studying the practices of other ETS systems, it must be tailored to fit the country's unique demographics and economic makeup.***



#### **4.4 Carbon Market as per Energy Conservation(Amendment) Bill, 2022**

- Numerous nations across the globe are now investigating various approaches to establish price mechanisms for greenhouse gas (GHG) emissions, aiming to utilize this strategy to mitigate climate change. The global carbon market comprises many levels of operation, including international, supranational, national, and subnational markets (World Bank, 2022).
- Nevertheless, other methodologies can be employed to establish carbon markets, each exhibiting fundamental differences. To fully harness the potential of market-based instruments and uphold their integrity and quality, it is crucial to comprehend their essential characteristics and environmental limitations. The amendment to the Energy Conservation Act of 2001 has been enacted by the Government of India, resulting in

##### **The implementation of a carbon credit market in India, as proposed in The Energy Conservation (Amendment) Bill, 2022.**

- The amendment establishes a legally binding structure for a carbon market, aiming to create incentives for activities that reduce emissions. In the Indian carbon credit market, organizations can enroll as "Registered Entities" under the carbon credit trading system. The issuance of carbon credit certificates will be carried out by the central government, or any authorized agency designated by it. Additionally, ESCerts or carbon credit certificates may be acquired voluntarily by individuals or organizations other than the parties above. The BEE has not yet delineated the carbon markets' specific operational and technological aspects.
- This Guidance Note provides an overview of the various categories of carbon markets and other market-based mechanisms in India that are not directly linked to carbon dioxide emissions. Additionally, it addresses the concerns expressed by stakeholders regarding introducing the carbon credit market in India.
- Section 2 introduces many different forms of carbon markets, elucidating their fundamental properties.
- Section 3 provides a concise overview of the historical development of carbon markets under the framework of the United Nations.
- Section 4 provides an overview of the current emission mitigation market-based instruments in India and the specifics of the carbon credit market outlined in the proposed amendment to the Energy Conservation Act of 2001.



- Section 5 provides an overview of the main findings derived from a stakeholder engagement session, including industry leaders at the Council on Energy, Environment and Water (CEEW) and the suggested recommendations. **Our advice for the future course of action is outlined in Section 6.**

#### 4.5 Carbon markets, alternatives

- Carbon markets refer to markets in which a metric tonne of carbon dioxide equivalent (CO<sub>2</sub>e) is transformed into a tradable unit, typically in the form of an emission allowance given inside an emissions trading system (ETS).
- A confirmed emission reduction/removal credit, commonly referred to as an offset, is issued within the framework of a project-based offset system.
- The primary objective of carbon markets is to establish a pricing mechanism that incentivizes the reduction of greenhouse gas (GHG) emissions. **As previously stated, two distinct variations of carbon markets exist, namely offset and Emissions Trading Systems (ETS). These other forms may also exist concurrently within the same jurisdiction. This section describes the several alternate forms.**

#### 4.6 Project-based (offset) method

- The offset approach, alternatively referred to as the baseline-and-credit system, is a project-oriented mechanism in which emission reduction is quantified by comparing it to a baseline scenario. This baseline scenario is a hypothetical situation estimated on the premise that emissions would be higher if the proposed project did not come to fruition. In 2005, the cost of wind-based power generation in India was considerably high. The financial viability of wind-based power projects is limited due to the preference of power consumers for more cost-effective coal-based power sources. In the present context, the financial viability of wind-power projects was facilitated by utilizing offset credits obtained from the Clean Development Mechanism (CDM) market. The foundation for any wind-based project was a coal-power project that would have been implemented without financial assistance from carbon markets. Many wind-based projects in India received support under the Clean Development Mechanism (CDM) market. The offset system serves as a mechanism to secure money for projects to reduce or remove greenhouse gas emissions, hence functioning as a means to access climate finance. These investments play a crucial role in determining the supply of carbon credits. On the demand side, certain companies have established emission reduction objectives that they must achieve, either through voluntary initiatives or as a requirement for regulatory compliance. These corporations serve as purchasers of carbon credits. The amount of demand

and supply of emission reduction credits determines the price of carbon in offset markets.

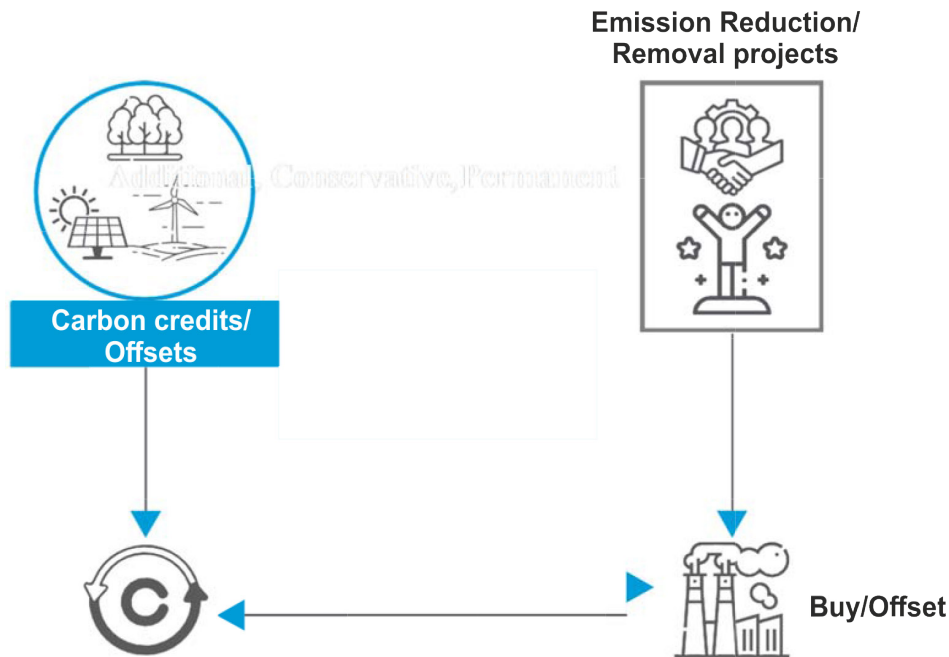


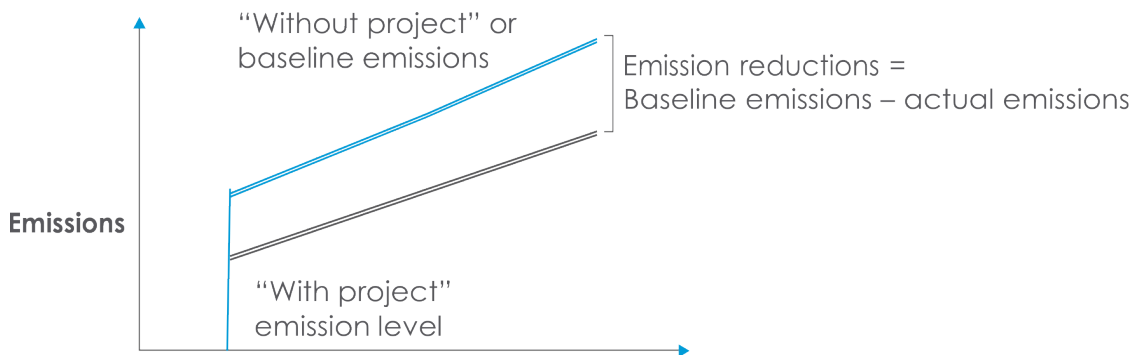
Figure 1 Project-based offset mechanism—generation and usage of offset/credits

### Potential buyers – organizations and individuals

**Source:** Singh, Nishtha and Vaibhav Chaturvedi. 2023. Understanding Carbon Markets: Prospects for India and Stakeholder Perspectives. New Delhi: Council on Energy, Environment and Water.

### Figure 2 Calculation of emission reduction for generation of credits

**Source:** Bayon, Hawn, and Hamilton, 2007.



The notions of baseline and additionally play a crucial role inside this framework. The basis for determining the amount of carbon credits awarded to a project developer is the contrast between the baseline level of emissions, which represents emissions in the absence of the proposed project, and the emissions in the scenario where the proposed project is operational (Figure 2). For instance, in the context of this strategy, if a project is put out for hydrogen-based steel manufacture, the developer of the project will be required to demonstrate that without financial assistance through this avenue, the conventional method of steel manufacturing using fossil fuels would result in a more excellent emissions trajectory (referred to as the baseline). Therefore, the suggested expenditure will result in a decrease in emissions compared to the baseline. The emission reduction calculation is based on a hypothetical baseline emission scenario that represents the emissions that would have occurred in the absence of the project.

**The issuance of carbon credits is a direct consequence of the disparity between actual and baseline emissions.** To obtain emission credits, it is imperative to undergo ex-post verification conducted by an officially acknowledged institution, commonly called a verifier, to assess the extent of reduction or removal achieved. People, businesses, or nations afterward acquire emission credits to voluntarily or mandatorily compensate for their greenhouse gas emissions.

### **The comprehension of carbon offsets**

Offsets, or project-based credits or carbon credits, are generated using the project-based mechanism. Suppose a project yields reduced or removed greenhouse gas (GHG) emissions. In that case, the developer of the said project can assert carbon credits, with each credit being claimed for every metric tonne of emissions that has been decreased or removed. The project developer can afterward market these credits to individuals or groups seeking to mitigate their emissions. Consequently, the emissions mitigated at the project site incentivize purchasers to release emissions in other locations. In principle, carbon credits are employed to counterbalance difficult-to-mitigate emissions. Consequently, **they should be employed to achieve equilibrium once an organization has exhausted all viable efforts to minimize its Scope 1, Scope 2, and Scope 3 emissions.**

Hence, the inherent characteristics of carbon credits necessitate a heightened level of inspection and an extended project timeline before the generation of credits. To uphold the environmental integrity and ensure the quality of recognition, it is imperative for the project developer to provide evidence of the following:

- The concept of additionally refers to the additional impact or benefit achieved due to a specific action or intervention. Demonstrating the



project's supplementary nature indicates that, without the carbon funds, the project would not have been realized within the conventional operational framework.

- The concept of a credit scheme refers to a system that allows individuals or organizations to obtain credit or financial assistance for various purposes. The significance of this idea lies in the fact that each retired credit permits the release of additional greenhouse gas (GHG) emissions into the environment. Suppose the reduction in emissions would have occurred otherwise, meaning they are not supplementary. In that case, their overall impact on the atmosphere is detrimental when they are utilized to compensate for other emissions. Moreover, the financial expenditure associated with the production of carbon credits might be rendered negligible or even advantageous if non-additional activities are deemed acceptable within the framework of the baseline-and-credit method.
- According to Betz et al. (2022), the outcome will involve project developers of non-additional activities engaging in the sale of credits at a price that sufficiently compensates for their transaction expenses. Over time, this phenomenon will lead to a rise in the overall amount of credit being extended and a decline in the cost of borrowing.
- **The authors Bayon, Hawn, and Hamilton (2007) have identified four additionality tests.**
- **Investment:** The developers must demonstrate financial additionality, substantiating that the project's economic viability heavily relies on the revenue earned from the sales of carbon credits.
- **Technology:** The developers are required to provide evidence demonstrating their exclusive utilization of a particular technology with the sole purpose of mitigating emissions. If an alternate technology had been employed, it would have increased emissions. The principal advantage associated with using this technology is the mitigation of emissions.
- **Regulatory:** The project must exhibit regulatory additionality by substantiating that the decrease in emissions exceeds the legally required minimum.
- **Conventional approach:** The developer must also provide evidence that the project effectively mitigates greenhouse gas (GHG) emissions compared to similar projects that adhere to conventional practices.
- The determination of baseline emissions is of utmost importance in safeguarding the environmental credibility of carbon credits. The quantity of credits produced is determined by calculating the disparity between the baseline emissions and the emissions after the execution of the project. The presence of inflated baseline emissions has the potential to produce

excess and compromised carbon credits. As an illustration, if a project presents a demonstration of baseline emissions amounting to 200 metric tons of carbon dioxide equivalent (CO<sub>2</sub>e) and receives recognition based on this value rather than the factual emissions of 100 metric tons of CO<sub>2</sub>e, the developer of the project will be granted 100 carbon credits that have been compromised. Thus, it is crucial to establish a more stringent baseline (Bayon, Hawn, and Hamilton, 2007).

- **Ensuring Permanence:** The project must provide a reliable and consistent approach to mitigating emissions throughout the designated timeframe. The significance of this aspect becomes crucial in projects with extended durations. For example, potential hazards associated with a reforestation project, such as fires, can impact the successful attainment and distribution of credits. By Bayon, Hawn, and Hamilton (2007), it is imperative for all sequestration initiatives to implement measures that guarantee the long-term retention of carbon within the soil or trees, thus preventing its eventual release into the atmosphere.
- **Leakage refers** to the phenomenon where a decrease in emissions at a specific location or point in time results in a subsequent increase in emissions at a different location or later. The project developer must take necessary measures to prevent any information leaking within the project. One instance of emission leakage occurs when a forest is safeguarded by implementing a carbon credit program that restricts logging activities inside its boundaries. In such cases, it is crucial to consider the potential occurrence of deforestation in alternative areas (Bayon, Hawn, and Hamilton, 2007).

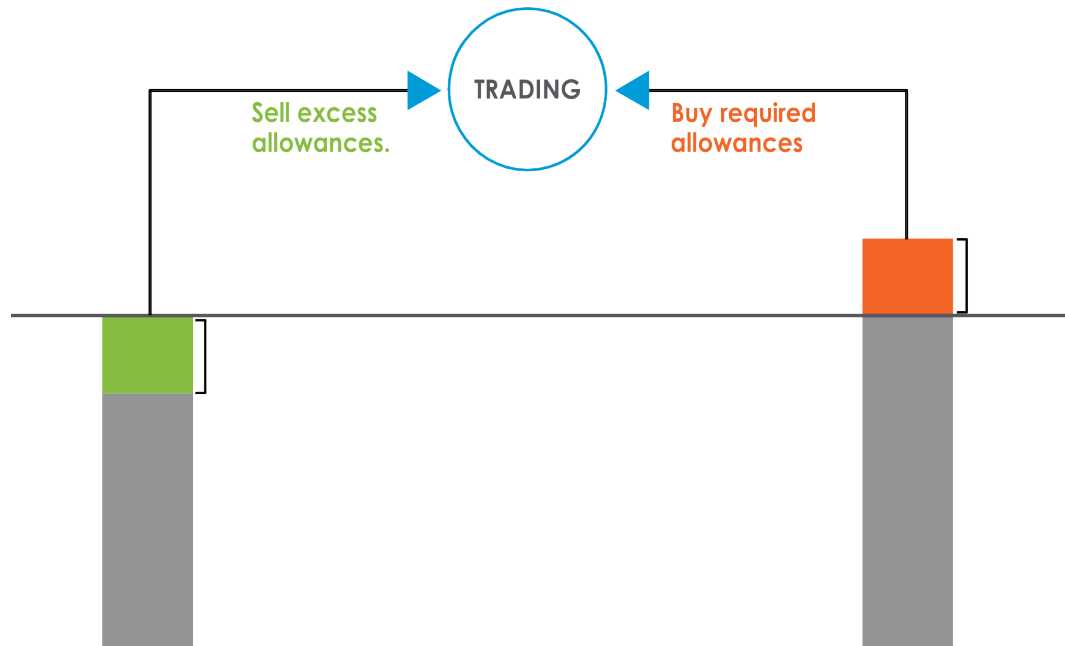
#### 4.7 The comparison between compliance and voluntary offset marketplaces

The categorization of the offset market's strategy can be further delineated into two distinct classifications:

- **Compliance-based and voluntary.** The compliance market suggests that regulatory measures mainly influence the need for reducing emissions. In contrast, the demand in the voluntary market is motivated by the individual company's voluntary commitments to showcase their efforts in reducing carbon emissions and promoting sustainability to their shareholders. **The compliance market relies on a comprehensive regulatory framework to assess and validate emission-reduction credits.** These credits are approved for projects that meet specific predetermined criteria. On the other hand, **in the voluntary market, private companies with established reputations in this field approve and verify credits.** These companies play a crucial role in the value chain by ensuring the credibility of the credits.

#### 4.8 The approach of an emissions trading program

Figure 3 Emissions trading scheme



Source: Singh, Nishtha and Vaibhav Chaturvedi. 2023. Understanding Carbon Markets: Prospects for India and Stakeholder Perspectives. New Delhi: Council on Energy, Environment and Water.

- **The Emissions Trading System (ETS) is a regulatory mechanism that operates on a quantity-based approach.** It involves establishing a predetermined maximum amount of greenhouse gas (GHG) emissions, sometimes called a “cap,” which applies to specific entities, such as corporations, countries, or institutions. The cap is, after that, partitioned into a discrete quantity of emission permits and allocated (preferably via an auction mechanism) among the businesses subject to regulation within the ETS. The entities subject to the law must submit a single allowance for every metric tonne of carbon dioxide equivalent released within the designated compliance period.
- **Several factors are crucial for an Emission Trading System (ETS), including but not limited to:**
- One of the ways that can be used in setting caps is the cap-setting strategy. The lid can be implemented using either a bottom-up or a top-down approach. In the bottom-up approach, the maximum level of emissions is determined based on the overall emissions factor of the covered installations, with the total allowable emissions varying depending on the output of these installations. On the other hand, the top-down approach

sets the maximum emissions level based on the total emissions allowed under the ETS without considering the output of covered installations. One instance of the methodology above can be observed in China's preliminary formulation of the national ETS. Examples of the latter include the European Union Emissions Trading System (EU-ETS), the Korean Emissions Trading System (K-ETS), and the California Cap-and-Trade Programme, among others. It is anticipated that China's national Emissions.

Trading System (ETS) would likewise shift towards the latter category, primarily driven by the enhanced economic efficiency and capacity to mitigate greenhouse gas (GHG) emissions associated with this approach.

- The "cap across sectors" concept refers to implementing a limit or restriction that applies uniformly across different industries or fields. Ideally, it is desirable to encompass numerous industries under a unified overarching emission limitation. As an illustration, it is plausible for the regulatory body to establish a uniform rule of X million tonnes of carbon dioxide equivalent (CO<sub>2</sub>e) emissions by 2025 for major industrial organizations engaged in India's steel, cement, electricity, and petrochemical sectors. Including sector-specific caps is unnecessary, although it is possible to consider the sector-specific potential for greenhouse gas (GHG) mitigation and associated costs when setting the overall cap and allocation amounts for organizations. For instance, this approach has been used in the case of the Korean Emissions Trading Scheme (K-ETS). Implementing a unified cap across all sectors facilitates the optimal utilization of the cost-efficiency inherent in an Emissions Trading System (ETS). This approach enables emissions reduction to occur in the most economically advantageous manner across all sectors that fall under the system's coverage (IEA, 2022).
- According to Kuo (2022), it is recommended that the regulator announces a cap trajectory for a significant duration to ensure policy certainty and facilitate effective long-term investment decision-making. This outcome can also be attained by establishing a distinct correlation between the magnitude of the Emissions Trading Scheme (ETS) cap and the National Determined Contribution (NDC) objective of the country, as exemplified by the K-ETS. As an illustration, the regulatory body has the potential to declare a trajectory for the imposition of a cap in the year 2019, which would delineate the limits on emissions from the year 2021 to 2030. The inclusion of a 10-year timeframe provides a level of assurance and predictability for individuals involved in the market.
- The regulated entities must submit a single allowance for every metric tonne of carbon dioxide equivalent emitted during the designated compliance period. In the beginning, emissions trading systems (ETSs) commonly allocate many free allowances, allowing for a gradual implementation



with little financial consequences. Considering that numerous organizations can transfer their carbon expenses to the prices of their products, there is a potential for generating excessive profits. To address this issue, the allocation of free carbon allowances is progressively diminished and substituted with auctioning. This approach enhances the effectiveness of the carbon pricing mechanism, encouraging reductions in greenhouse gas emissions. Moreover, the revenue generated from these auctions serves as a value. The allotment of free allowances continues to hold significance in preserving the international competitiveness of energy-intensive and trade-exposed industries and mitigating the risk of carbon leakage. The most favoured approach for allocating resources without charge is based on benchmarks of the intensity of greenhouse gas emissions.

- Monitoring, reporting, and verification (MRV) is crucial in various fields, including environmental studies, climate change mitigation, and international agreements. MRV involves systematically collecting, analysing, and documenting data to assess the progress, effectiveness, and compliance of certain activities or policies. In addition to delineating the cap and allocation particulars, a pivotal component of an Emissions Trading System (ETS) is the implementation of a rigorous Measurement, Reporting, and Verification (MRV) process to quantify greenhouse gas (GHG) emissions emanating from organizations falling under the cap (ICAP 2021). The significance of this matter is in the requirement for organizations to relinquish credits that align with their emissions after the compliance period. At this stage, it is crucial to prioritize the implementation of rigorous verification processes and promote transparency at the organizational level.
- **Complementary policies:** An emissions trading system (ETS) is most effective when implemented within a policy framework that promotes a competitive carbon price and offers incentives for both the sectors included in the ETS and those outside of it to mitigate their emissions. Complementary policies play a crucial role in enhancing the efficiency of the Emissions Trading System (ETS) by facilitating the development of supportive infrastructure, ensuring market stability, fostering innovation, and mitigating the inequitable and regressive effects of a carbon price. The ETS system does not encompass the entirety of emissions. The extent of coverage is constrained to.

Significant point sources due to the substantial administrative expenses associated with monitoring emissions from smaller, more widely dispersed sources. The European Union Emissions Trading System (EU-ETS) encompasses around 45 percent of the greenhouse gas (GHG) emissions produced inside the European Union. In contrast, the Korean Emissions Trading System (Korean ETS) addresses over 73 percent of the GHG emissions generated in Korea. The scope of emissions included within the Emissions Trading Scheme (ETS) is contingent upon several factors, including the economic structure, sector-specific emissions

profiles, and the proportion of principal and small industrial entities within the economy, among other relevant considerations.

- The power sector in India presently contributes to 50 percent of the country's carbon dioxide equivalent (CO<sub>2</sub>e) emissions, while the industrial sector is responsible for over a quarter of India's total emissions. Considering the presence of micro, small, and medium enterprises (MSMEs), it is conceivable that India's emissions trading system (ETS) may potentially encompass more than 50 percent of the country's carbon dioxide emissions. However, it is essential to note that the proportion of these emissions to the overall greenhouse gas (GHG) emissions will be lower. The remaining 50 percent will need to be addressed by specific and supplementary strategies within various sectors.
- Potential measures to promote energy efficiency and sustainability encompass several strategies, such as implementing labelling systems and standards for energy-efficient equipment and providing financial incentives specifically targeted towards electric vehicles, among other initiatives. Furthermore, integrating complementary policies such as Renewable Purchase Obligations (RPO) and feed-in-tariff mechanisms can interact with the Emissions Trading Scheme (ETS) and contribute to its effectiveness. Furthermore, it is possible to implement policies that pertain to the sectors encompassed by the Emissions Trading Scheme (ETS) to promote innovation or achieve other important policy objectives. The Emissions Trading System (ETS) holds significant potential as a critical mechanism for attaining long-term decarbonization objectives. However, it is crucial to underscore the significance of Supplementary policies, as highlighted by the International Energy Agency in 2022.
- An indicator used to measure or assess the level of success achieved. The carbon price is one of the most contentious elements inside an Emissions Trading System (ETS). The variable in question holds significant importance for numerous market participants, particularly financial institutions (Narasimhan, Gallagher, Koester, and Alejo 2017). The efficacy of an Emissions Trading System (ETS) is contingent upon the regulator's ability to effectively manage and regulate the collective emissions of the companies subject to regulation, ensuring they remain within the predetermined cap established and disclosed by the regulatory authority. The Emissions Trading System (ETS) serves as a mechanism to achieve the ultimate goal of mitigating emissions. The carbon price holds significance in incentivizing low-carbon initiatives and preventing the entrenchment of high-carbon investments. Consequently, the European Union (EU) has taken measures to establish the Market Stability Reserve to tackle the issue of historically low carbon prices within the EU Emissions Trading System (EU-ETS).



## 4.9 Finding a Fair Price

**The demand and supply of emission permits in a given jurisdiction determine the prices in an ETS. Carbon credit demand and supply can swing for a variety of reasons.**

### Finding prices for ETS

- Changes in the macro economy, technological innovations, or government policy shifts can affect supply and demand. Permits will be available according to how strict the cap is, but the need for them may shift in response to changes in the economy and technological advances. Reduced demand for products and services during a recession, for instance, means that production of such commodities and their accompanying emissions will be low (European Commission, 2010). Emission reductions are less in demand, which puts downward pressure on ETS pricing. The cost trend of the underlying technology is also a significant factor. If the price of renewable energy continues to drop at its current rate, then power sector mitigation should become more cost-effective. As a result, carbon prices in the ETS would be lowered since power sector companies would be more likely to make in-house investments in renewable energy to cut emissions rather than acquire emission reduction credits/allowances from the market. The ETS carbon pricing is highly dependent on macro factors and the cost trend of emerging technologies (IEA 2022).

### Offset market price discovery

- The compliance-driven offset system, in contrast to the ETS, may use either a business-to-business pre-purchase agreement or the spot market to determine prices. The project-based vehicle allows the developer to negotiate a price with potential buyers before the project is even finished being conceived or created. Both the buyer and the seller benefit from this method because it eliminates any price fluctuations in the future.
- In contrast to the offset market driven by regulations, the offset system in the voluntary market includes an extra perk. Unlike in the latter case, where a carbon credit always equals a tonne of carbon dioxide avoided, in the former case, there may be variation according to the type of project and the sustainable development value it provides (Trove Research 2022). Credits can come from various sources in a free market using an offset system. The cost of the credit is determined by the type of project that produced it (renewable energy, energy efficiency, nature-based solutions, etc.). Distinctions that aid in biodiversity preservation and the well-being of local populations, such as those based on afforestation, may command a higher price in the voluntary market. Voluntary buyers, including individuals and businesses, drive the demand for voluntary credits by seeking ways to reduce emissions and showcase their commitment to sustainability to their



constituents. Like with a project-based compliance system, the spot market for voluntary emission reduction credits or a pre-purchase agreement between businesses might determine the fundamental price of emission reduction credits in a voluntary market. (Trove Research 2022).

**The primary carbon market is established when the regulatory body issues allowances and credits. Then, participants in the spot market or an exchange trade these credits and subsidies. In this way, the secondary carbon market is created. Contracts must be standardized before they may be traded on an exchange.** On the other hand, Over the counter (OTC) transactions mediated by brokers provide more leeway in negotiating price and volume. Since the specifics of OTC deals are never made public, they are also more mysterious. The derivative market, which includes futures and options contracts, is another facet of carbon markets. These contracts can mitigate credit and emission allowance concerns (Betz et al., 2022).

**Table 1 Differences between offset based and ETS mechanisms.**

| Offset-based scheme   | Emissions trading scheme  |
|---|---|
| Baseline and credit system where emission reductions or removals compared to baseline generates tradeable credits   | Allocated tradeable allowances, which allow holders to emit a specific quantity of emissions  |
| Units are credits and are generated ex-post after verification (and certification)  | Units are allowances and allocated/auctioned ex-ante to regulated entities.   |
| Credits are heterogeneous   | Allowances are homogeneous at a jurisdictional level.   |
| Broad participation in unit generation and trade—project developer, verifier, and a wide range of buyers  | A tradeable surplus of units can only be created and traded between regulated entities.   |
| The system needs to be integrated and linked to other policies, such as an ETS system, carbon tax, or corporate or individual voluntary mitigation targets.   | The system needs implementation by the authorities but works on its design.   |
| Examples: Clean Development Mechanism, Joint Implementation, the Article 6.4 Mechanism under the Paris Agreement, Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), Voluntary carbon standards (e.g., Gold Standard, Verra) | Examples: Subnational, national, and supranational emissions trading systems (such as the Californian, the Swiss, or the South Korean systems, or the EU-ETS), International emissions trading under Article 17 of the Kyoto Protocol |

**Source:** Adapted from (Parappurathu et al. 2018)



#### 4.9.1 Market-based instruments that have emerged in India.

India has successfully implemented market-based tools to improve energy efficiency and increase the use of renewable sources. This section examines the Indian market-based mechanisms that are currently in use. Verification of Energy Efficiency: Programme of Action, Result, and Exchange (PAT)

The BEE introduced the Perform, Achieve, and Trade (PAT) scheme as part of the NAPCC's National Mission for Enhanced Energy Efficiency (NMEEE). By outlining energy reduction goals and facilitating the trading of energy reduction certificates, the PAT system hopes to improve industrial energy efficiency in India. Scheme details were revealed in 2008, and it went live in 2012. The PAT scheme is a technique for establishing energy efficiency goals based on the concept of entities. SEC (specific energy consumption) is defined as follows: SEC is a metric tonne of oil equivalent per unit of product used in this system to determine baseline and target energy efficiency.

- Following a comprehensive site audit, the PAT scheme determines the DC-specific rules and criteria for energy usage.
- When an audit is not possible, the average rate of SEC reduction across different sectors or a policy aim for the reduction of SEC is used to determine the norms and requirements for a DC.
- The BEE's PAT policy statement includes a detailed methodology for determining energy consumption and SEC across all industries.
- DCs are issued ESCerts after each three-year PAT cycle. A DC that falls short of its SEC goal must purchase ESCerts from an outperforming DC. Indian Energy Exchange (IEX) and Power Exchange India Limited (PXIL) provides the trading platforms.

#### 4.9.2 Certificate exchange for renewable energy

Renewable Purchase Obligations (RPOs) require Indian states to attain a designated proportion of renewable energy in their power generation. The Renewable Energy Certificate (REC) trading scheme was introduced in 2010 as a comprehensive market for exchanging renewable energy certificates among different states in India, aiming to meet their Renewable Purchase Obligations (RPOs). A Renewable Energy Certificate (REC) is measured in megawatt-hours (MWh) of renewable power generated. The Central Electricity Regulatory Commission (CERC) offers a specialized institutional framework for issuing Renewable Energy Certificates (RECs) to developing businesses. **These RECs can be traded on authorized dedicated trading platforms such as the Indian Energy Exchange (IEE) and Power Exchange India Limited (PXIL).** The Renewable Portfolio Standard (RPO) program enables governments lacking substantial renewable energy potential to include renewable energy (RE) into their procurement portfolio by purchasing Renewable Energy Certificates (RECs)

from developers located in states with more significant renewable energy potential.

#### 4.9.3 The proposed progression of the current Pollution Abatement Technology (PAT) scheme towards an Emissions Trading Scheme (ETS).

- **At the beginning of 2022, the Bureau of Energy Efficiency (BEE) released a white paper outlining a comprehensive, phased approach towards transitioning from a Perform, Achieve, and Trade (PAT) system to an Emissions Trading Scheme (ETS). The plan has been structured into three distinct phases.**
- **Phase 1** of this study focuses on the short-term objective of increasing demand in the voluntary carbon market. This proposal suggests the expansion of the Indian voluntary markets to include voluntary buyers alongside the currently designated consumers (DCs). This study aims to examine the fungibility of Emission Reduction Certificates (ESCs) and Renewable Energy Certificates (RECs) in the context of carbon offset trading.
- **Phase 2** of the proposed plan involves implementing strategies to augment the supply within the voluntary carbon market. This phase is expected to be executed over a medium-term timeframe. During this phase, it is suggested that the voluntary carbon market will expand its scope to include sellers beyond the designated countries. As an integral component of the proposal, a comprehensive procedure will be implemented to allocate carbon credits to the sellers, enabling subsequent trading activities.
- **Phase 3** involves transitioning towards an Emissions Trading Scheme (ETS) as a long-term solution. In the planned third phase, the system is suggested to transform into an Emissions Trading System (ETS). This entails determining an entity-specific greenhouse gas (GHG) emissions intensity factor, such as metric tonnes of CO<sub>2</sub> per megawatt-hour of electricity output or metric tonnes of CO<sub>2</sub> per metric tonne of aluminium, to reflect the prevailing circumstances. Subsequently, the projected expansion of each sector in the upcoming years will be employed to ascertain the baseline emissions, commonly referred to as 'business as usual (BAU) emissions, for the initial crediting period of the program as an initial benchmark. The use of an NDC-alignment coefficient (NAC) is proposed as a means to attain congruence with the Indian Nationally Determined Contributions (NDC).

#### 4.9.4 “The role of a cost accountant is well-suited for issuing renewable energy certificates, energy-saving certificates, or carbon credit certificates.” ----An Introspective analysis

Cost accountants have a vital skill set in evaluating the financial aspects of renewable energy projects, energy-saving programs, and carbon credit projects. **However, issuing certificates for these projects often involves various factors, including technical, environmental, and legal concerns. It is crucial to**



**acknowledge that acquiring renewable energy certificates (RECs), energy-saving certificates, and carbon credit certificates frequently necessitates a multidisciplinary strategy involving the collaboration of professionals from several sectors.**

There are several reasons why:

- ***In technical expertise, issuing certifications necessitates the meticulous verification of tangible reductions in emissions, energy consumption, or the creation of renewable energy. A comprehensive comprehension of the technical procedures employed for calculating these reductions may extend beyond the purview of conventional financial competence.***
- The carbon credit issuance process entails verifying the environmental advantages derived from projects aimed at reducing emissions. ***Proficiency in emission reduction strategies, greenhouse gas accounting, and adherence to pertinent standards is vital for this task.***
- Regulatory compliance is a crucial aspect of the renewable energy industry, particularly about renewable energy certificates and carbon credits. These instruments are frequently subject to regulatory frameworks and standards that govern their usage and ensure adherence to established guidelines. To ensure compliance, professionals engaged in the issuance process must comprehensively understand the relevant rules.
- The evaluation of projects holds significant importance in determining their credibility and additionality, as it mitigates the risk of “double counting” or the issuance of certificates for initiatives that would not have been undertaken without incentives. A comprehensive comprehension of project development and its associated environmental implications is necessary for this task.
- ***Verification of Expertise:*** Numerous credential programs require verification conducted by specialized third-party bodies to ascertain the precision and authenticity of the assertions made. Verification bodies generally possess expertise in particular technological and environmental domains.
- ***The involvement of Cost Accountants in the analysis of financial aspects and cost-effectiveness of projects is essential. However, it is crucial to collaborate with specialists in environmental science, engineering, sustainability, and regulatory compliance to verify the certifications’ legitimacy and accuracy.***
- ***It is recommended to assemble a multidisciplinary team of technological specialists, environmental consultants, engineers, and, if applicable, specialized verification organizations acknowledged by pertinent standards or authorities.*** Implementing this collaborative strategy guarantees that certifications are granted by precise data, validated processes, and

adherence to defined criteria, augmenting the integrity and credibility of the certificates within the market.

#### 4.9.5 Carbon Trading Exchange in India

India currently lacks a specialized national carbon trading exchange that facilitates the trading of carbon credits. Nevertheless, there have been deliberations and suggestions concerning implementing a carbon trading platform in India to facilitate the exchange of carbon credits and foster initiatives aimed at reducing emissions.

**Although there is no designated national exchange, it is essential to acknowledge the following:**

- **The Indian Energy Exchange (IEX):** The Indian Energy Exchange (IEX) is involved in the trading of Renewable Energy Certificates (RECs), although its primary focus is not limited to carbon credits. Renewable Energy Certificates (RECs) represent the environmental attributes associated with renewable energy generation and can be traded on the IEX platform.
- **Government Initiatives:** The Indian government has demonstrated a keen inclination towards investigating carbon markets and emission trading as integral components of its endeavours to address climate change. Deliberations about the implementation of a carbon market and the exploration of prospective trading platforms have been conducted.
- **International Mechanisms:** Indian companies actively engage in international mechanisms related to carbon credits, such as the **Verified Carbon Standard (VCS)** and **Clean Development Mechanism (CDM)** projects established under the United Nations Framework Convention on Climate Change (UNFCCC).
- **Private Initiatives:** In India, various private organizations and consulting firms may provide platforms or services facilitating the trading of carbon credits or offering related services.
- **Prospects for Future Advancements:** The carbon market landscape has the potential to undergo rapid evolution. There may have been advancements in carbon trading exchanges in India after my previous update.

#### 4.9.6 Indian Energy Exchange (IEX)

- The Indian Energy Exchange (IEX) is a prominent energy marketplace in India that offers a comprehensive automated trading platform for the efficient physical delivery of electricity, renewable energy, and certificates across the country. In recent times, IEX has taken the lead in advancing cross-border electricity trade, extending its power market beyond the borders of India.



This initiative aims to establish an integrated power market in the South Asian region. IEX utilizes advanced technology that is user-friendly and focused on meeting Customer needs. This technology enables effective determination of prices and streamlines the power procurement process.

- The IEX has an extensive network of over 7,300 participants in 29 States and 5 Union Territories. This network includes more than 55 distribution utilities, over 600 conventional generators, approximately 1,800 renewable energy generators, and obligated entities. Additionally, the power grid boasts a substantial customer base of over 4600 commercial and industrial entities. These encompass a wide range of industries, including but not limited to metal, food processing, textile, cement, ceramic, chemicals, automobiles, information technology, institutional, housing, real estate, and commercial sectors.
- IEX has obtained approval and is subject to regulation by the Central Electricity Regulatory Commission. It commenced operations on 27 June 2008 and has been listed as a publicly traded company on the National Stock Exchange and Bombay Stock Exchange since October 2017.
- Since August 2016, the Exchange has obtained ISO Certifications for quality, information security, and environmental management.

**IEX provides a range of appealing trading options, including the Electricity Market, Green Market, and Certificates.**

- **The electricity market refers to the economic system in which electricity is bought and sold, typically through a competitive process.**
- The Day Ahead Market refers to a market where electricity is traded for delivery the following day. On the other hand, the Term Ahead Market involves trading electricity contracts that have a duration of up to three months.
- **The Green Term Ahead Market refers to a financial market that allows participants to trade contracts for the future delivery of green energy.**
- **Green Day-Ahead Market and the Certificate Market.**
- **Renewable Energy Certificates (RECs)** are official documents that serve as proof of the generation and consumption of renewable energy. Regulatory bodies issue these certificates or
- **Energy saving certificates**, also known as energy efficiency certificates or white certificates, are a mechanism used to promote and incentivize energy efficiency improvements in various sectors.

#### **4.9.7 Indian Energy Exchange Becomes India's First Carbon Neutral Power Exchange- See Annexure on Press Release.**

#### **4.9.8 Power Exchange India Ltd (PXIL)**

Established in 2008, PXIL is a platform that enables the trade of electricity and other products inside the energy market of India. The platform facilitates a transparent and competitive marketplace whereby power can be bought and sold. This enables market participants to trade electricity contracts, considering the dynamics of demand and supply.

The salient characteristics and operational capabilities of Power Exchange India Ltd (PXIL) encompass:

- PXIL maintains an electronic platform that facilitates the trading of energy contracts, enabling the participation of many stakeholders such as buyers, sellers, distribution firms, industrial customers, and power generators.
- The Day-Ahead Market (DAM) is a component of the electricity market where electricity is bought and sold for delivery the following day.
- The Day-Ahead Market offered by PXIL facilitates energy trading among participants for future delivery on the following day. This reduces the ability of market participants to arrange their electricity procurement in advance strategically.
- The Term-Ahead Market (TAM) is a market mechanism that allows participants to trade electricity contracts for future delivery.
- The Term-Ahead Market offered by PXIL facilitates the trading of electricity contracts scheduled for delivery at a future date, with a time horizon ranging from one day to 11 days in advance.
- PXIL further enables the trading of Renewable Energy Certificates (RECs), which incentivize renewable energy production and ensure adherence to Renewable Purchase Obligations (RPOs).
- The demand response mechanism is a system that allows for adjusting electricity consumption in response to changes in supply and demand conditions.
- PXIL provides a Demand Response method that enables consumers to curtail their electricity usage during periods of high demand in return for monetary incentives.
- The exchange facilitates transparency in pricing by employing a competitive bidding process, thereby guaranteeing equitable price discovery for electricity contracts.
- PXIL functions within the regulatory framework established by the Central Electricity Regulatory Commission (CERC) and complies with the standards and regulations about power trading in India.



- The members of PXIL encompass a range of entities, such as power generators, distribution corporations, open-access users, and traders. This diversified composition contributes to the establishment of a competitive marketplace.
- Trading mechanisms refer to the various methods and systems that facilitate the buying and selling financial instruments, such as stocks, bonds, and derivatives. These mechanisms play a crucial role.
- PXIL provides a range of trading processes, such as Continuous Trading, Dutch Auction, and Market Coupling, to accommodate diverse players and their trading preferences.
- In the Indian energy market, PXIL assumes a pivotal role by facilitating electricity trading using a transparent, efficient, and competitive platform.
- This phenomenon has a role in facilitating the effective allocation of resources, determining market prices, and encouraging the development of renewable energy sources.
- The exchange plays a crucial role in enhancing market liquidity, optimizing the use of power resources, and assisting players in effectively managing their electricity procurement requirements.

#### **4.9.9 Draft Carbon Credit Trading Scheme (CCTS) by Ministry of Power - See Annexure also**

- **The draft Carbon Credit Trading Scheme (CCTS)** has recently been published by the Ministry of Power (MoP) to establish a comprehensive structure for India's carbon market, encompassing both voluntary trading and compliance activities. According to the proposed plan, the establishment of **the Indian Carbon Market Governing Board (ICMGB) will be responsible for supervising the administrative and regulatory operations of the carbon market. The administration of the Indian carbon market will be overseen by the Bureau of Energy Efficiency (BEE), with the Grid Controller of India Limited serving as the registry and the Central Electricity Regulatory Commission (CERC) acting as the regulator for trading activities.**
- **In retrospect, the Energy Conservation (Amendment) Act, 2022, officially announced in December 2022, conferred authority upon the central government to designate a Carbon Credit Trading Scheme (CCTS) to mitigate** carbon emissions. Additionally, it granted the central government or its authorized agency the ability to distribute carbon credit certificates (CCCs) to entities that have completed the registration process. These entities will be granted permission to acquire or dispose of Certified Carbon Credits (CCCs) to fulfil their objectives related to energy conservation. Moreover, individuals can voluntarily earn energy savings certificates or Cs. Significantly, these carbon credits will be prioritized domestically to fulfil the

country's nationally determined contributions. According to a special report on greenhouse gas emissions by S&P Global Commodity Insights, it is worth noting that India has issued a significant number of

- 278 million credits in the voluntary carbon market from 2010 to 2022. This figure represents approximately 17 percent of the global supply.

**The draft scheme encompasses several significant aspects.**

- According to the preliminary version of the Consumer Complaint Tracking System (CCTS), the compliance mechanism entails that obligated entities, which include designated consumers as periodically notified by the central government, shall proceed to register themselves for participation in the scheme. A comprehensive protocol will be established to implement the carbon market and its associated mechanisms effectively. This protocol will encompass specific guidelines for allocating Certified Carbon Credits (CCCs) to obligated entities that successfully reduce their greenhouse gas emissions per the prescribed emission standards. Additionally, this study will offer comprehensive information about the credibility of CCCs, and the floor and forbearance prices associated with these certificates.
- The proposed establishment of the Indian Carbon Market Governance Board (ICMGB) is outlined in the draft by the ministry. The chairperson of the board will be the secretary of the Ministry of Environment, Forest and Climate Change (MoEFCC). The primary purpose of the ICMGB will be to provide direct supervision over the administrative and regulatory operations of the Indian carbon market.
- The members of the ICMGB will consist of the secretary from the Ministry of Power (MoP), a joint secretary or higher-ranking official from the Ministry of Finance, NITI Aayog, MoP, MoEFCC, Ministry of New and Renewable Energy, Ministry of Steel, Ministry of Coal, and Ministry of Petroleum and Natural Gas. Additionally, the chairperson of the Central Electricity Authority, the chairman and managing director of Grid Controller of India Limited, and the director general of BEE will also be included.
- The ICMGB will propose protocols, guidelines, and policies for establishing and functioning the Indian carbon market, subject to the central government's approval. The components above encompass regulations and procedures about the operational framework of the carbon market in India, methodologies to be employed within the voluntary mechanism, and directives concerning the issuance and trade of Certified Carbon Credits (CCCs) beyond the borders of India.
- The International Committee on Mitigation of Greenhouse Gases (ICMGB) will approve projects operating within the voluntary mechanism. Additionally, the committee will establish the procedures and requirements for the



credit period, renewal, and retirement of Certified Carbon Credits (CCC). The International Conference on Molecular Genetics and Biotechnology (ICMGB) will convene every quarter of each calendar year.

- The proposed administrator for the Indian carbon market is the Bureau of Energy Efficiency (BEE), which will also serve as the secretariat for the Indian Carbon Market Governing Body (ICMGB). In its administrative capacity, BEE will be responsible for formulating standards, procedures, and methodologies for registering projects within the voluntary framework. Additionally, BEE will be tasked with devising the trajectory and targets applicable to entities operating under the compliance mechanism. Further, the organization will allocate Certified Carbon Credits (Cs) according to the International Carbon Market Governance Body (ICMGB) recommendations. Furthermore, it will establish a mechanism to ensure market stability for carbon credits.
- The Bureau of Energy Efficiency (BEE) will establish a comprehensive procedure outlining the eligibility criteria for accrediting agencies to operate as accredited carbon verifiers. This procedure will be subject to the International Carbon Market Governing Body (ICMGB) approval. Establishing one or more technical committees will be necessary to fulfil the compliance or voluntary mechanism requirements to implement the CCTS effectively.
- The recommendations of the technical committee will be submitted to the Bureau of Energy Efficiency (BEE). The Bureau of Energy Efficiency (BEE) will propose the appropriate fees to cover the expenses associated with implementing the scheme.
- These recommendations will be subject to approval by the Inter-Ministerial Committee on Market-Based Instruments for Energy Efficiency (ICMGB).
- Additionally, the BEE will collect fees from the registered entity. Furthermore, it will be responsible for the development and upkeep of the information technology infrastructure, as well as the knowledge platform necessary for the carbon market in India. Additionally, it will ensure the maintenance of a secure database, implementing all security protocols approved by the Indian Carbon Market Governing Body (ICMGB).
- The Grid Controller of India Limited has been designated as the registry for the carbon market in India. The proposed system will be responsible for registering both obligated and non-obligated entities. It will establish and maintain a secure database, implementing security protocols approved by the International Carbon Market Governing Body (ICMGB). Additionally, the system will be responsible for recording and storing all transactions. Furthermore, it will facilitate the sharing of transaction records with power exchanges and the administrator of the Indian carbon market. Additionally,

it will offer support in creating an information technology infrastructure for managing a comprehensive collection of certified clinical cases (CCCs). This infrastructure will also facilitate connections with other national and international registries, subject to the International Committee for Medical Genetics and Genomics (ICMGB) approval.

- The Central Electricity Regulatory Commission (CERC) has been designated as the regulatory authority responsible for overseeing trading operations within the carbon market in India. The commission will oversee and regulate the trading of Cs, ensuring the protection of the interests of both sellers and buyers. Additionally, it will control the frequency of Cs trading and exercise market oversight, taking appropriate corrective measures to prevent fraud or mistrust. The participation of power exchanges in the trading of the Indian

The Central Electricity Regulatory Commission (CERC) will also approve the carbon market.

- The development of a framework to implement the CCTS in the country is currently underway, which is anticipated to facilitate the emergence of the voluntary carbon trading market shortly. In the interim, the compliance market is expected to be implemented within two to three years, as it is necessary to establish specific targets and timelines for industries to adhere to. Moreover, reports suggest that the existing Perform, Achieve, and Trade (PAT) scheme will transition towards the compliance market.
- The power exchanges are also preparing to establish trading platforms for carbon credits. In December 2021, the Indian Energy Exchange established a wholly owned subsidiary, International Carbon Exchange Private Limited (ICX). This subsidiary was created to investigate potential business prospects within the voluntary carbon market. The ICX platform will provide participants with the opportunity to engage in the purchase and sale of voluntary carbon credits at competitive prices. This platform is characterized by its transparency and reliability and aims to facilitate the reduction of global greenhouse gas emissions.
- In general, implementing a carbon credit market within the nation represents a significant stride towards attaining the country's objectives of reducing greenhouse gas emissions. According to industry estimates, the projected annual global demand for voluntary carbon credits is anticipated to reach approximately 1.5 gigatonnes, with India expected to contribute about 200 million tonnes by 2030. Establishing a carbon credit market would significantly contribute to promoting actions to reduce emissions, thereby fostering more significant investments in clean energy and energy efficiency.
- Establishing a resilient and effective carbon credit market would facilitate the identification of dependable carbon credit providers for businesses,



thereby benefiting both purchasers and vendors and ultimately promoting the progression towards a low-carbon trajectory. The implementation of a carbon market in India would facilitate the achievement of carbon neutrality among Indian.

- Corporations and contributes to the decarbonization efforts in sectors that are challenging to reduce emissions.

#### **4.9.9.1 The significance of cost accountants in the Indian Energy Exchange market (IEX)**

- Cost accountants can contribute significantly to the Indian Energy Exchange (IEX) market, specifically in trading Renewable Energy Certificates (RECs) and other energy-related financial instruments. There are several avenues through which Cost Accountants can make valuable contributions.
- **Financial Analysis:** Cost Evaluation Accounting professionals possess the ability to conduct comprehensive analyses of the financial components associated with renewable energy initiatives, thereby evaluating the cost-efficiency of generating Renewable Energy Certificates (RECs). Assisting by these entities facilitates the comprehension of the financial feasibility of projects for both developers and investors.
- **Cost Management:** Cost management is crucial to organizational operations, particularly in renewable energy generation. In this regard, the expertise of cost accountants can prove invaluable. These professionals possess the necessary skills to effectively manage various cost components, such as operational expenses, maintenance costs, and capital investments, thereby aiding organizations in optimizing their financial resources in renewable energy.
- **Project Feasibility Studies:** The topic of discussion pertains to project feasibility studies, specifically focusing on cost. Accounting professionals possess the capacity to conduct comprehensive feasibility analyses for potential renewable energy initiatives, thereby ascertaining their financial viability and prospective investment gains.
- **Revenue Forecasting:** Revenue forecasting involves utilizing various factors such as energy generation, prices of Renewable Energy Certificates (RECs), and market trends by cost accountants to estimate the potential revenue from REC trading.
- **REC Accounting:** In accounting, the term “cost” refers to the monetary value of resources consumed or sacrificed to produce goods or services. It is an essential concept. Accounting professionals can guarantee precise accounting and reporting of Renewable Energy Certificates (RECs), ensuring adherence to regulatory mandates and established standards.



- **Financial Reporting:** Cost Analysis Accounting professionals possess the ability to compile comprehensive financial statements encompassing various economic indicators, such as revenue generated from Renewable Energy Certificates (RECs), costs incurred, and other pertinent metrics about renewable energy initiatives.
- **Risk Assessment:** Cost Analysis Accounting professionals possess the ability to evaluate the financial risks of Renewable Energy Certificate (REC) trading, encompassing factors such as price volatility and uncertainties within the market.
- **Economic Analysis:** Cost Evaluation Accounting professionals can perform economic analyses to assess and compare the financial advantages associated with producing renewable energy and trading Renewable Energy Certificates (RECs) about alternative investment opportunities.
- **Sustainability Reporting:** The inclusion of REC trading and renewable energy initiatives in sustainability reports can be facilitated by the involvement of Cost Accountants, thereby showcasing the organization's dedication to environmental stewardship.
- **Tax and Incentive Considerations:** Tax and incentive considerations are essential when evaluating renewable energy projects and REC trading. Cost accountants possess valuable knowledge and expertise in this area, they can offer insights into the tax benefits and incentives available for such projects.
- **Decision Support:** The involvement of cost accountants in decision-making processes about energy procurement, generation, and trading strategies is crucial, as they possess the necessary expertise in financial data and analysis.
- **Compliance and Auditing: The role of cost accountants** encompasses ensuring adherence to regulatory mandates and industry benchmarks for energy trading and renewable energy certificate (REC) transactions.
- **Risk Management:** Risk management is a crucial aspect of organizational decision-making, particularly when considering the financial implications. One key factor that must be considered is the cost of managing risks. Accounting professionals can make valuable contributions to risk management strategies by considering the financial risks inherent in REC trading and the fluctuations observed in the energy market.
- **Training and Education:** The topic of discussion pertains to training and education, specifically focusing on cost. Accounting professionals possess the ability to impart knowledge to organizations regarding the intricate financial dimensions of Renewable Energy Certificates (RECs), energy markets, and trading activities on the IEX platform.



**The responsibilities of Cost Accountants within the IEX market encompass a broader scope than solely financial analysis, as they also involve strategic decision-making, compliance, and sustainability considerations. Their specialized knowledge and skills can significantly optimize the economic and environmental advantages associated with renewable energy initiatives and the trading of Renewable Energy Certificates (RECs).**

#### **4.9.9.2 The integration of artificial intelligence (AI) and blockchain technology has proven to be instrumental in facilitating the establishment of a carbon credit trading scheme within the Indian Energy Exchange Market.**

Integrating AI and blockchain technologies can significantly impact and improve the efficiency, transparency, and effectiveness of a recently established carbon credit trading scheme within the Indian Energy Exchange (IEX) market. Artificial intelligence (AI) and blockchain technology have the potential to make significant contributions in various domains.

- **The Role of Artificial Intelligence (AI) :**
- **Data Analysis and Forecasting:** Artificial Intelligence (AI) can analyse past energy consumption and generation data to predict future energy demand, supply, and corresponding carbon emissions. The acquisition of this information is imperative to establish precise carbon credit objectives.
- **Estimation of Emission Reductions:** Artificial intelligence algorithms can estimate the potential reductions in emissions that can be achieved through renewable energy projects. This enables market participants to more effectively evaluate the impact of their investments.
- **Real-time Monitoring:** Monitoring systems driven by artificial intelligence can offer instantaneous data regarding energy production and consumption. This can assist traders in making well-informed decisions about carbon credit trading.
- **Automated Verification:** Artificial intelligence (AI) can streamline the process of verifying emission reduction projects by analysing real-time data and project documentation. This automation significantly diminishes the manual verification requirement, resulting in substantial savings in time and resources.
- **Carbon Credit Pricing:** The utilization of AI models enables the analysis of market trends, supply and demand dynamics, and regulatory changes, thereby facilitating the generation of optimal strategies for carbon credit pricing.
- **Market Intelligence:** Market intelligence refers to using artificial intelligence (AI) tools capable of collecting and analysing data from diverse sources. These tools offer valuable insights into the market, enabling individuals to make well-informed decisions regarding trading activities.



### The Role of Blockchain:

- **Transparency and Traceability:** Transparency and traceability are critical features facilitated by blockchain technology. The inherent characteristics of blockchain, such as its transparent and immutable ledger, guarantee the accurate and secure recording of all transactions related to carbon credit trading. Consequently, this ensures transparency for all participants involved in the process.
- **Fraud Prevention:** The inherent tamper-resistant properties of blockchain technology serve as an effective deterrent against fraudulent practices, including double-counting or counterfeit carbon credit issuance.
- **Smart Contracts:** Smart contracts are digital agreements that operate on blockchain technology. These contracts are designed to execute trading agreements once specific predetermined conditions are fulfilled automatically. By doing so, smart contracts eliminate the necessity for intermediaries, thereby streamlining the trading process.
- **Secure Data Sharing:** The secure sharing of verified emission reduction data on the blockchain enables participants to collaborate and make well-informed decisions.
- **Ownership and Provenance:** The implementation of blockchain technology guarantees the establishment of unambiguous ownership and provenance of carbon credits, thereby mitigating conflicts and enhancing the credibility of exchanged credits.
- **Instant Settlement:** Utilizing blockchain technology facilitates the immediate settlement of transactions, eliminating the requirement for intermediaries and thereby enhancing the efficiency of the trading process.
- **Accessibility and Inclusivity:** The decentralized nature of blockchain technology can enhance accessibility and inclusivity within the carbon credit market by enabling a more comprehensive array of participants, such as smaller businesses and individuals, to engage in this market.
- **Auditability and Compliance:** Utilizing blockchain technology facilitates the establishment of a traceable record of transactions, thereby simplifying the process of showcasing adherence to regulatory and reporting obligations.

***Through the utilization of artificial intelligence (AI) and blockchain technologies, the Indian Energy Exchange market has the potential to establish a carbon credit trading scheme that is characterized by enhanced resilience, efficiency, and credibility. These technologies can improve the precision of emissions data, streamline the verification procedures, and foster an equitable and transparent marketplace for all participants involved.***



## CHAPTER - 5

# Explanation of carbon practices: Measuring, managing, and mitigating carbon emissions

Carbon practices involve measuring, managing, and mitigating carbon emissions to address the pressing issue of climate change. Carbon emissions primarily refer to releasing carbon dioxide (CO<sub>2</sub>) and other greenhouse gases into the atmosphere, contributing to global warming and its associated impacts.

**Here's an explanation of each practice:**

### Measuring Carbon Emissions:

- Measuring carbon emissions involves quantifying the amount of greenhouse gases released into the atmosphere from various sources. This step is essential to understanding the scale of the emissions problem and identifying the major contributors. Carbon emissions can come from multiple sectors, including energy production, transportation, industry, agriculture, etc. Methods of measurement include direct measurements from emission sources and indirect estimation based on activity data and emission factors.
- Common greenhouse gases measured include carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), and fluorinated gases. These measurements can be reported in units like metric tons of CO<sub>2</sub>-equivalent (MT CO<sub>2</sub>e), aggregating the global warming potential of various gases into a single value.

### Managing Carbon Emissions:

- Once emissions are measured, organizations and governments can implement strategies to manage and reduce their carbon footprint. This involves identifying opportunities to improve efficiency, reduce waste, and adopt cleaner technologies and practices. **Some management strategies include:**
- **Energy Efficiency:** Implementing energy-saving technologies and practices to reduce energy consumption and emissions.
- **Renewable Energy:** Transitioning from fossil fuels to renewable energy sources like solar, wind, and hydropower to reduce emissions from electricity generation.
- **Sustainable Transportation:** Encouraging public transportation, electric vehicles, and active transportation methods to lower emissions from the transportation sector.
- **Carbon Accounting:** Tracking emissions from various activities and processes to identify high-emission areas and set reduction targets.
- **Supply Chain Optimization:** Evaluating and reducing emissions associated with the entire supply chain of goods and services.

### **Mitigating Carbon Emissions:**

Mitigation involves deliberate actions to reduce or offset carbon emissions to achieve net-zero or harmful emissions. Mitigation strategies go beyond managing emissions within a particular organization and may affect larger-scale efforts. **Some mitigation measures include:**

- **Afforestation and Reforestation:** Planting trees or restoring forests to absorb CO<sub>2</sub> from the atmosphere.
- **Carbon Capture and Storage (CCS):** Capturing CO<sub>2</sub> emissions from industrial processes or power plants and storing them underground.
- **Carbon Offsetting:** Investing in projects that reduce or remove emissions, such as renewable energy projects or methane capture initiatives, to compensate for remaining emissions.
- **Emission Reduction Targets:** Setting specific goals to reduce emissions over time, such as committing to a particular percentage reduction by a specific year.
- **Technological Innovations:** Developing and adopting new technologies with lower carbon footprints than traditional methods.

Measuring, managing, and mitigating carbon emissions is crucial for addressing climate change and transitioning to a more sustainable and environmentally responsible future. It requires collaboration among governments, industries, communities, and individuals to achieve meaningful results.

### **5.1 Relevance of carbon practices in reducing environmental impact and achieving sustainability goals**

#### **Global Shift towards Sustainable Business Practices:**

- The advent of the 21st century has presented unparalleled difficulties about climate change and its extensive ramifications. Governments, organizations, and individuals across the globe have increasingly recognized the pressing need to implement proactive strategies to mitigate the detrimental impacts of human activities on the environment. The recognition of this fact has prompted a substantial worldwide transition towards the adoption of sustainable business practices.
- In contemporary times, corporations are subject to assessment not just based on their financial success but also in consideration of their environmental and social ramifications. The transition above is seen in the rise of notions such as **Corporate Social Responsibility (CSR), Environmental, Social, and Governance (ESG) standards, and the United Nations' Sustainable Development Goals (SDGs)**. These frameworks promote a comprehensive approach to company



operations, necessitating organizations to synchronize their strategies with principles that prioritize the long-term sustainability of their operations.

- **The significance of carbon accounting, carbon audits, and environmental, social, and governance (ESG) reporting in the context of businesses:**

Carbon accounting, audits, and ESG reporting have emerged as imperative mechanisms for enterprises in striving for sustainability. These practices symbolize a company's dedication to sustainability and offer vital insights into its environmental effect and operational efficiency.

- **Carbon accounting** is the process of calculating and monitoring an organization's carbon emissions and identifying the specific sources of these emissions. Organizations may effectively identify areas needing improvement through a comprehensive carbon footprint analysis and establish measurable reduction objectives. This approach facilitates organizations in making well-informed decisions on allocating resources, enhancing energy efficiency, and implementing initiatives for reducing emissions.
- A **carbon audit** evaluates an organization's carbon emissions, energy use, and other data. Conducting a carbon audit enables firms to assess their performance on predetermined targets and benchmarks. **Additionally, it facilitates the identification of potential cost savings, the improvement of energy efficiency, and the guarantee of compliance with legislation.**
- **ESG reporting** is the comprehensive disclosure of a company's environmental, social, and governance performance. This report offers stakeholders, such as investors, consumers, employees, and regulatory agencies, information regarding the organization's sustainability practices. **Including carbon accounting and audit data in ESG reporting provides a holistic assessment of a company's environmental performance.**
- **In the Indian context**, the significance of carbon accounting, carbon audits, and ESG reporting is heightened due to the country's population size and economic growth, contributing to the pressing need for sustainable development. **This guidance note aims to comprehensively examine the carbon audit process and incorporate carbon practices into ESG reporting, explicitly focusing on the responsibilities of cost accountants in India.** Adopting this approach aims **to enable cost accountants to make meaningful contributions to the sustainability agenda and facilitate constructive transformations inside their organizations.**

## 5.2 Stages of Implementing Carbon Practice

### First Step: Measurement of Carbon Emissions

The first stage in implementing carbon practices is to accurately measure the quantity of greenhouse gas emissions produced by an organization's operations,

primarily carbon dioxide (CO<sub>2</sub>). This measurement considers not only the direct emissions that are produced during operations (known as Scope 1 emissions) but also the indirect emissions that are produced when energy is purchased (known as Scope 2 emissions), as well as any other activities that are associated with the value chain (known as Scope 3 emissions).

### **Second Step: Managing Carbon Emissions**

Once an organization has determined how much carbon dioxide it emits, it can successfully manage its carbon footprint. This involves creating targets for reducing emissions, initiating programs to improve energy efficiency, and adopting sustainable practices to reduce emissions. Another strategy component is incorporating carbon considerations into decision-making processes, such as selecting suppliers with low emissions or utilizing cleaner energy sources.

### **Third Step: Mitigating Emissions of Carbon:**

Mitigation methods entail implementing steps to either reduce or offset carbon emissions. This could include investing in renewable energy sources, boosting operational efficiency, optimizing transportation and logistics to minimize emissions, and deploying carbon capture and storage technology.

## **5.3 The relevance of Carbon Practices:**

The Importance of Carbon Practises in Lessening Our Effects on the Environment and Achieving Our Sustainability Objectives.

The importance of carbon practices can't be stressed when it comes to lessening our effect on the surrounding environment and making progress toward our sustainability goals. Because the industrial sector and human activities are responsible for a substantial portion of the world's carbon emissions, adopting carbon practices can result in several significant benefits, **including the following:**

### **Benefits of Carbon Practises:**

- **Reducing Environmental Impact:** Carbon practices immediately reduce greenhouse gas emissions, an essential aspect of the fight against climate change. Organizations play a crucial part in the conservation of ecosystems, the protection of biodiversity, and the mitigation of the adverse effects of climate-related events by reducing their emissions of greenhouse gases.
- **Efficiency in the Use of Resources:** Implementing carbon practices frequently requires optimizing the consumption of resources, which results in enhanced operational efficiency. This lowers emissions and helps conserve essential resources such as electricity, water, and raw materials.



- **Cost Savings:** Efforts to minimize carbon emissions frequently result in cost savings due to better energy efficiency and lower usage of resources. Businesses can improve their bottom line while contributing to achieving environmental objectives if they reduce waste and implement sustainable practices.

#### 5.4 The Importance of Carbon-Based Practises in Reducing Negative Environmental Impacts and Achieving Sustainability Goals

Their function highlights the relevance of carbon practices in reducing the adverse effects of human activities on the surrounding environment and conforming with more general sustainability goals. Carbon practices serve as major enablers in the **following areas as organizations work towards adopting sustainable business models and complying with international commitments such as the Paris Agreement:**

- **Setting Clear Goals:** Establishing Explicit Objectives Carbon practices enable businesses to establish measurable objectives for reducing emissions and track their progress over time. This transparency illustrates our commitment to stakeholders and our accountability to them.
- **Stakeholder Expectations:** Expectations on the Part of Stakeholders Customers, investors, regulators, and employees increasingly anticipate a responsible demonstration of environmental stewardship for enterprises. Meeting these expectations and enhancing one's reputation can be accomplished by implementing carbon practices in operational procedures.
- **Long-Term Resilience:** By incorporating carbon practices, organizations can future-proof themselves against regulatory changes, market upheavals, and physical threats connected with climate change.

#### 5.5 The Connection between Carbon Practises and the Performance of Environmental, Social, and Governance (ESG) Systems

The evaluation of an organization's influence on environmental sustainability, social responsibility, and governance standards is called ESG performance. Carbon practices are inextricably linked to ESG performance and play an essential role in this evaluation. **Carbon-intensive practices have a significant impact on each of these facets:**

- **Environmental Performance:** Performance about the Environment Carbon practices immediately address the problem of their impact on the environment by lowering emissions and saving resources. A positive contribution to an organization's overall environmental score within ESG assessments is made by carbon management, which is carried out effectively.
- **Social Responsibility:** Fostering a culture of responsibility towards communities and employees is frequently integral to adopting carbon practices. This may



## Guidance Note on Carbon Credit Mechanism, ESG Reporting... etc.

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involve promoting the use of sustainable energy, providing support for local projects, and improving the safety of the workplace.

- **Governance Standards: Using** efficient carbon practices demonstrates an organization's dedication to open governance, effective risk management, and comprehensive strategic planning over the long term. Sound governance principles can be implemented by incorporating carbon considerations into decision-making.

Carbon practices, in their most fundamental form, constitute a cornerstone of an all-**encompassing ESG strategy, which is aligned with the triple bottom line of people, planet, and profit. Carbon practices are crucial in pursuing positive ESG performance and contributing to a better future for all stakeholders as organizations try to achieve holistic sustainability.**



## CHAPTER - 6

# Accounting for Carbon

### 6.1 An Examination and Methodology for the Management of Carbon Emissions Utilising the Global Accounting Concept in the Context of International Implementation.

Carbon accounting has emerged as a crucial practice for businesses that want to quantify, control, and reduce their overall carbon emissions. This is because sustainability and environmental responsibility are becoming increasingly important today. It entails taking a systematic approach to estimating and keeping track of the numerous sources of carbon emissions created as a result of the actions of an organization. The overarching objective is to understand the organization's carbon footprint better so that decisions can be made more intelligently, targeted improvements can be made, and reduction goals can be established.

**One tonne of CO<sub>2</sub> prevented from entering the atmosphere equals one carbon credit unit, abbreviated as CER (Certified Emission Reduction). Carbon credits are a form of financial reward offered to commercial enterprises as an incentive for reducing their output of greenhouse gases (GHGs).** This can be accomplished in various ways, including converting to renewable energy sources like wind and solar power, regenerating forests, installing equipment with improved energy efficiency, capturing methane from landfills, and other similar activities.

**The entity is eligible for a credit in the form of a Certified Emission Reduction (CER) certificate if there is a reduction in the amount of emissions produced.** The CER can be traded, and the organization that holds it can give it to another organization needing carbon credits to help that organization improve from a less attractive position on carbon credits. The necessity for a system that can measure, and report carbon credits has given rise to the field of carbon accounting.

To put it more plainly, **carbon accounting is a technique that allows companies to account for and report on the greenhouse gas emissions that they produce. This accounting subfield deals with measuring, monitoring, comparing, and reporting on an organization's greenhouse gas, primarily carbon emissions, throughout a specific accounting period.**

- **Measurement and reporting of carbon credits are just two of the many domains that fall under the purview of carbon accounting.**
- Analysing the potential financial benefits of low-carbon investment plans.
- Guiding customers and employers regarding the most effective actions to adapt to climate change, including the likely investment costs and rewards resulting from such efforts.

- Increasing the amount of information disclosed in yearly reports and accounts about businesses' carbon and greenhouse gas emissions and the threats posed by climate change.
- **Carbon and greenhouse gas disclosures are subject to auditing and quality assurance.**

### Putting a Number on Carbon Emissions and Pinpointing Their Sources:

Carbon accounting is a method that entails the detailed collection of data relating to the numerous activities and processes within an organization that result in the emission of greenhouse gases, most notably carbon dioxide (CO<sub>2</sub>) and other relevant gases. **These emissions can be caused by a diverse range of factors, including, but not limited to, the following:**

- **Direct Emissions (Scope 1):** These emissions directly result from activities the organization controls. For example, the combustion of fossil fuels in business vehicles, heating systems, and on-site power generation are all examples of direct emissions.
- **Indirect Emissions (Scope 2):** These emissions are caused by the consumption of bought energy, such as electricity and heat, and fall within the second scope of emissions. They are not physically located on the premises but somehow connected to the organization's day-to-day operations.
- **Indirect Emissions (Scope 3):** This category encompasses a broader variety of emissions related to the organization's value chain, including activities such as business travel, transportation, procurement, and waste generation. Indirect emissions fall under the scope of this category.

Organizations can estimate their carbon emissions across these distinct scopes thanks to their meticulous data collection and calculating procedures. This procedure requires analysing consumption patterns, emission variables, and other pertinent information to arrive at precise data about emissions.

**Important Note for Cost Accountants: In the context of GHG emissions disclosures, IFRS S2 mandates that an organization must assess and publish its Scope 1, Scope 2, and Scope 3 GHG emissions in compliance with the GHG Protocol Corporate Standard, with specific allowances for transitional periods. (See Chapter IFRS NEW Standard (Effective from 1st January 2024): IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information and IFRS S2 Climate-related Disclosures)**

## 6.2 Leveraging Insights for Sustainable Decisions

It is not enough for an organization to assess its carbon footprint; this knowledge should be the basis for its strategic decision-making. **When organizations have a full view of the sources of emissions, they can:**



- **Identify Areas for Improvement:** Carbon accounting identifies places within the organization's operations responsible for considerable emissions. One can use this information to identify areas where improvements can be made. This knowledge helps locate particular processes or practices that can be optimized to reduce emissions and contribute to reducing those emissions.
- **Set Reduction Targets:** Establishing Realistic and Achievable Carbon Reduction Goals Armed with data, organizations can develop reduction goals that are both realistic and attainable. These targets act as yardsticks for measuring progress and propel an approach laser-focused on achieving sustainability.
- **Allocate Resources Effectively:** Make educated Decisions about Resource Allocation. Carbon accounting assists in making decisions that are educated about resource allocation. Businesses can prioritize their investments in energy-efficient technologies, renewable energy sources, and emission-reduction methods in those areas where these investments would have the most impact.
- **Enhance Energy Efficiency:** Improve Your Organization's Energy Efficiency Businesses can determine which activities use the most energy and then look for ways to make those processes more efficient. This results in cost savings and contributes to overall efforts to reduce our environmental impact.
- **Reporting and Transparency:** Reporting and showing Commitment to Environmental Responsibility and Sustainability Accurate carbon accounting enables organizations to disclose their emissions transparently to stakeholders, indicating their commitment to acting responsibly toward the environment.

**In conclusion**, carbon accounting is essential in an organization's process to become more environmentally conscious and sustainable. It enables organizations to turn data into actionable insights, allowing them to make strategic decisions that generate reductions in emissions, preserve resources, and positively contribute to global sustainability.

### 6.3 The accounting treatment of carbon offsets and credits by the International Financial Reporting Standards (IFRS®)

**Objects:** The prominence of carbon offsets and credits in global accounting difficulties is heightened by implementing net-zero initiatives and emissions reduction pledges.

**Message from the IFRS Institute-March2, 2023:**

*As more companies commit to reducing their carbon emissions or investing in renewable energy, questions about how to account for carbon offsets and credits are becoming more pressing. The complexity and variety of arrangements in rapidly developing voluntary markets raise questions about how IFRS Accounting*

**Standards apply, often involving more than one standard. Here, we level set on these offsets and credits and provide some critical accounting considerations for voluntary markets relevant under IFRS Accounting Standards, plus a comparison to US GAAP.**

**6.4 Lack of IFRS and US GAAP Accounting Standards for Carbon Offsets or Credits.( Applicable Up to December 2023. From Jan 24, IFRS S1 and S2 will be applicable--- See Chapter IFRS NEW Standard (Effective from 1st January 2024): IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information and IFRS S2 Climate-related Disclosures)**

- The accounting treatment of carbon offsets and credits is a topic that is currently gaining attention and has also been a subject of interest for international standard-setting organizations for a long time. Mandatory emissions trading programs have been in existence for some time. However, for organizations with pledges to achieve net-zero emissions or other emissions reduction goals, voluntary offsets and credits frequently play a significant role in shaping their strategic approach.
- Historically, the establishment of these schemes aimed to assist companies in meeting governmental emissions limits. However, they have now evolved into a catalyst for growth and innovation, motivating corporations to pursue developing and implementing cutting-edge renewable technologies actively.
- The diversity of these systems exhibits significant variation, with a notable upward trend in their quantity. The situation above has led to the resurgence of accounting concerns, which are now considered of utmost importance.

**6.5 The comparison between offsets, credits, and allowances:**

- Before delving into the realm of accounting, it is imperative to understand the inherent characteristics of the entity under consideration. There is a frequent conflation or lack of definition of terms such as carbon offsets, renewable energy credits or certificates (RECs), emissions permits or allowances, certified emissions reductions (CERs), and environmental credits. Furthermore, the ESG reporting proposals put forth by the International Sustainability Standards Board (ISSB), the Securities and Exchange Commission (SEC), and the European Financial Reporting Advisory Group (EFRAG) were not in agreement. The potential for alignment in the final standards has yet to be determined.

***In the realm of IFRS Accounting Standards, the phrase that has traditionally had the most prominence when discussing greenhouse gas (GHG) emissions is “emissions allowances,” particularly within the framework of emissions trading schemes (ETs).***

- An illustration can be found in a cap and trade scheme, wherein a corporation is granted permits that effectively permit it to release a specific quantity of



CO<sub>2</sub>. Companies can trade surplus allowances in established markets or get extra allowances to compensate for any shortfall. The European Union (EU) hosts the largest cap and trade scheme globally, encompassing slightly more than one-third of the EU's greenhouse gas (GHG) emissions.

- **Emission Trading Systems (ETs)** are implemented inside the United States at the state level, exemplified by the California Cap-and-Trade Programme.
- **This Guidance note primarily focuses on the emerging voluntary markets instead of the compliance markets mentioned before.** Within these particular markets, corporations procure and exchange carbon offsets or credits as a deliberate component of their strategies to mitigate greenhouse gas (GHG) emissions. **It is important to note that these actions are undertaken voluntarily by the companies involved rather than driven by any legislative mandates or obligations.**
- In the context of reducing GHG emissions, **the ISSB** proposed using the general term '**carbon offset**,' which it defined as:

***"An emissions unit issued by a carbon crediting program that represents an emission reduction or removal of a greenhouse gas emission. Carbon offsets are uniquely serialized, issued, tracked, and cancelled using an electronic registry."***

- Examples of emissions reductions include using wind, solar, and geothermal energy sources as alternatives to natural gas or coal power plants.
- Examples of GHG removals include planting forests to absorb GHG emissions and sequestering carbon in underground storage.
- In light of the inconsistent practices seen, the International Standards Setting Body (ISSB) has decided, during its revaluation process, to adopt the term '**carbon credits**' as a more encompassing and general phrase. This decision was influenced by input received, indicating that the term 'offset' more accurately reflected using **a carbon credit to address an entity's net emissions**. Henceforth, the subsequent sections of this Guidance Note pertain to the procurement or divestment of carbon credits.

## 6.6 The incorporation of carbon credits into the Books of Account

**Scenario 1- We examine the acquirer's perspective, precisely a corporation that procures carbon credits in the given scenario.**

The primary purpose of the following inquiries (which are not comprehensive) is to ascertain whether the organization has obtained an independent asset and, if so, the characteristics of that asset. The exploratory questions presented in this context are designed to be non-linear and allow for potential response overlap. It is important to note that these questions primarily focus on initial recognition.

Moreover, the inquiries presuppose the absence of financial instruments, such as derivatives, applicable in scenarios like a virtual power purchase agreement.

| <b>Illustrative inquiries</b>   | <b>The present text serves as a commentary</b>   |
|---|--|
| <p>What is the mechanism behind the arrangement?</p>  | <p>This query is foundational for comprehending carbon credits' structure and inherent characteristics. Addressing this inquiry necessitates learning the extent to which the firm asserts ownership over the carbon credits and the practical advantages it can get from such a request. In the discourse surrounding terminology, it is essential to acknowledge that the phrase 'carbon credit' can encompass a range of interpretations.</p>   |
| <p>Do carbon credits constitute a component of a broader contractual agreement?</p>               | <p>Including carbon credits inside a broader contractual agreement necessitates a comprehensive comprehension of the whole nature of the arrangement to ensure accurate accounting practices.</p> <p>For instance, upon careful examination of the facts and circumstances, it may be deduced that the carbon credits validate a more significant asset obtained as a 'green' widget, thus functioning as an attribute of said asset. Consequently, no distinct asset warrants recognition only for the carbon credits.</p>  |
| <p>What are the conditions associated with carbon credits? Are they tradable or exchangeable?</p> | <p>Carbon credits that can be transmitted to a third party likely indicate that the company has acquired a separate asset, as opposed to the credit being an attribute of another purchase (such as a 'green' gadget). However, the analysis may be less precise if the credits cannot be transferred, but the company can utilize them in another manner as part of its emissions reduction strategy.</p> <p>Moreover, suppose the company lacks title or other contractual rights to the carbon credits and cannot sell or exchange them. In that case, the carbon credits may be included in the cost of another asset because they are similar to 'green' credentials and are merely a characteristic of that asset.</p> |



| Illustrative inquiries  | The present text serves as a commentary   |
|---|---|
| <p>What purpose will the carbon credits serve?</p>                                    | <p>If it is determined that carbon credits are a separate unit of account, the following remarks apply.....</p> <p><b>If the carbon credits will be held for sale (or incorporated into products for sale), classification as inventory (or an inventory cost) under IAS 27 is likely the most appropriate treatment (or cost).</b></p> <p><b>If the carbon credits will be held for their use, IAS 38 suggests classifying them as an intangible asset.</b></p> <p>If the carbon credits will be promptly retired as part of the company's GHG emissions strategy, this may indicate that immediate profit or loss recognition is appropriate.</p> |
| <p>Is there a delay between the carbon credit payment and the receipt?</p>            | <p>There is often a delay between initiating a transaction to purchase carbon credits and receiving them. Any delay must be thoroughly evaluated to determine its effect on initial recognition.</p>  |
| <p>Can the company include carbon credits in its greenhouse gas (GHG) accounting?</p> | <p>Understanding whether the company will be able to use the carbon credits to mitigate its GHG emissions can assist in determining precisely what the company will receive.</p> <p>For instance, the proposed IFRS S2 would require a company to disclose information regarding the planned use of carbon offsets (now known as credits) in attaining emissions targets. Could the company's strategy incorporate these carbon credits?</p>  |
| <p>What does the CDP questionnaire for the company say?</p>                           | <p>If a company completes a CDP (or similar) questionnaire, the responses can be contrasted with information about the arrangement from other sources; this can be incredibly enlightening if the questionnaire is completed outside of the finance department. Evaluating a transaction in the context of a company's climate change strategy and intentions can be helpful (but not decisive) when considering the accounting.</p>  |



**Scenario 2 – Vendor perspective: The company incorporates carbon credits into revenue arrangements.**

Carbon credits could be incorporated into a revenue contract by transferring them to the customer when they purchase a 'widget' or by retiring carbon credits on the customer's behalf. In other instances, carbon credits may serve to credentialise or certify the 'widgets' being sold.

- **In applying IFRS 15**, the primary purpose of the following (non-exhaustive) questions is to determine whether the company has a discrete performance obligation associated with carbon credits. If the answer is 'yes,' the company allocates a portion of the transaction price to the carbon credits or related service (assuming control does not transition simultaneously) and records revenue when the performance obligation is satisfied. There may also be an effect on revenue recognition disclosures (such as revenue disaggregation).
- **The answers to these exploratory queries are not intended to be sequential and may overlap.**

| Illustrative inquiries                                    | The present text serves as a commentary  |
|---|--|
| How does the agreement function?                          | This is the first question to be answered to comprehend the arrangement and the nature of the carbon credits or related services (such as retiring carbon credits). As indicated in the preceding section on terminology, the term "carbon credit" can have multiple meanings.   |
| What does the client receive, and what can it do with it? | It is necessary to understand how the customer benefits from the carbon credits to determine whether they can be distinct (i.e., the customer can help) and specific in the arrangement context (separately identifiable). If these conditions are met, the vendor has a separate performance obligation about the carbon credits.             |
| Does a distinct market for carbon credits?                | Understanding whether the vendor sells carbon credits separately, whether the customer could purchase them separately from another vendor, and whether the customer could sell or exchange them individually in a transaction with other parties can assist in determining whether the arrangement contains a separate performance obligation. |



| Illustrative inquiries   | The present text serves as a commentary   |
|--|---|
| When is the carbon credit ownership transmitted to the customer?   | <p>Determining when the transfer of control occurs requires an analysis of the specific facts of the customer arrangement and the related carbon credits. Indicators of control transfer may differ between stand-alone carbon credit sales and deals in which carbon credits are bundled and sold with the widget.</p> <p>The following are example questions: When does the customer have a present obligation to pay for the credits? Are the credits pre-certified, and if so, does the jurisdiction recognize title over pre-certified credits? If not, when is the title transferred to the customer? How substantive is the certification process? What are the significant risks and rewards related to the credits (e.g., market price risk, certification risk), and when do they transfer? Are there any customer acceptance provisions?</p> |
| Are carbon credits retired by the agreement? How does this mechanism function?   | <p>If carbon credits are retired on behalf of the client, this may indicate that the customer is receiving a separate service.</p> <p>However, before concluding, it is essential to comprehend how the retirement mechanism operates and how it benefits the customer. This will aid in determining whether the customer is the recipient of the carbon credits, as opposed to it being a fictitious certification that credentializes the widget.</p>   |
| Is the vendor acting as an agent by providing a service of retiring or buying and retiring carbon credits on behalf of the customer? | This is another method for determining whether the company provides a service to the consumer (in addition to selling the widget).  |
| Can the client account for the carbon credits in its greenhouse gas (GHG) account?   | Determining precisely what the customer obtains can be aided by knowing whether the carbon credits can be used to offset the customer's greenhouse gas emissions.   |



| Illustrative inquiries  | The present text serves as a commentary  |
|---|--|
| Does the vendor have a 'green' commitment regarding the revenue contract? | In some cases, the revenue arrangement might trigger a separate action for the vendor – e.g., if it has agreed to undertake specific 'green' activities (such as sponsoring a tree planting) for each widget sold. |

### 6.7 Comparison to US GAAP

- Similar to IFRS Accounting Standards, no US GAAP is specific to carbon credits, although the FASB has an initiative planned (see below). The above concerns are equally relevant in determining the appropriate US GAAP accounting.
- **Perspective of an acquirer.** Although there are differences between the standards (ASC 330 for inventory and ASC 350-20 for intangible assets), the categories of questions applicable under US GAAP would be the same.
- **Supplier viewpoint.** Regarding analysis, we do not anticipate significant disparities between IFRS 15 and ASC 606.

### 6.8 The potential for future accounting advice

- IASB's newly created reserve list for IFRS Accounting Standards includes a project on pollutant pricing mechanisms (e.g., emission trading schemes). Although designated as a high priority, the IASB determined that there were projects in the pipeline with a higher focus, and the project will only be added to the work plan if capacity becomes available before its next consultation on its five-year agenda in 2026.
- In May 2022, the FASB added accounting for environmental credit programs to its active agenda. The Board acknowledged that the current proliferation of environmental credit trading markets necessitates providing accounting guidance to program participants. The new project addresses the recognition, measurement, presentation, and disclosure requirements applicable to participants in compliance and voluntary programs that generate environmental credits. In addition, the initiative includes financial reporting requirements for non-governmental organizations that create environmental credits. We expect the Board to continue discussing this initiative in the months ahead.

### 6.9 Important Takeaways:

There is a developing voluntary market for carbon credits with increasingly complex arrangements. Likewise, no specific accounting guidance or standardized terminology helps identify the nature of a carbon credit in a given circumstance. Therefore, it is essential to comprehend the nature of an arrangement before determining the proper accounting treatment.



### 6.9.1 Important Note for Cost Accountants in Service

There is a developing voluntary market for carbon credits with increasingly complex arrangements. Likewise, no specific accounting guidance or standardized terminology helps identify the nature of carbon credit in a given circumstance until December 2023. **Therefore, it is essential to comprehend the nature of an arrangement before determining the proper accounting treatment.** From January 2024, you need to follow IFRS S1 and IFRS S2 standards for reporting subject to approval by the appropriate authority. **Ask numerous questions and meticulously document your analysis. And begin the discussion with your auditors and other accounting advisors immediately.**

### 6.9.2 Carbon Accounting- India

In 2012, the Accounting Standards Board of The Institute of Chartered Accountants of India issued the Guidance Note on Accounting for Self-Generated Certified Emission Reductions (CERs).

The Guidance Note proposed the following accounting principles for the recognition, measurement, and disclosure of CERs generated by CDM:

- Certified Emission Reductions (CERs) are considered inventories of the entity that generates them since they are produced and kept for sale in the regular course of business. These CERs should be accounted for by the criteria of **Accounting Standard 2 (AS 2)**.
- By Accounting Standard 2 (AS 2), the value of inventories should be determined by taking the lower cost and the net realizable value. As a result, CERs ought to be evaluated on their expenses or net achievable values, whichever yields a lower total.
- Because CERs are counted as inventories, the company must use **Accounting Standard 9 (AS 9)** to account for revenue generated from the sale of CERs.
- There are several circumstances in which an organization might employ a tangible asset to cut emissions. The provisions of Accounting Standard 10 (Revised), Tangible Fixed Assets, will apply to the equipment above and gadgets, as they are considered tangible fixed assets.
- During the phase of research and development, the company that will generate CERs may create specific tangible and intangible assets that will count towards the generation of CERs. **The entity should apply Accounting Standard No. 26, "Intangible Assets,"** in regard to expenditures made on research and development.
- An organization is required to report certified emission rights as part of Inventories in the Balance Sheet. This information should be presented in a manner that is distinct from the presentation of other types of Inventories, such as Raw

Materials, Work-in-process, Finished Goods, and others.

- **In the financial accounts, an entity is required to provide the following information regarding certified emission rights:**
- The number of CERs held as inventory and the basis of valuation. The number of CERs that have been certified. The amount of money spent on depreciation and the costs of operating and maintaining emission reduction equipment during the year.

### 6.9.3 TAX ON INCOME FROM TRANSFER OF CARBON CREDITS

**History:** The revenue-tax Department has classified the revenue derived from the transfer of carbon credits as business income, subjecting it to a tax rate of 30%. Nevertheless, the courts have rendered varied rulings regarding the classification of money derived from the transfer of carbon credits as either a revenue receipt or a capital reception.

A recent amendment has been made to the Finance Bill 2017 to clarify the taxation of income derived from the transfer of carbon credits and promote environmental protection measures. A proposition has been introduced to introduce a new section, 115BBG, into the Income Tax Act of 1961. This proposed section aims to establish that if an individual's total income includes any income derived from the transfer of carbon credits, said income shall be subject to taxation at a reduced rate of ten percent (in addition to any applicable surcharge and cess) based on the gross amount of such income. The Act does not permit any expenditure or allowance to be claimed about such payment. The adjustment above becomes effective on April 1st, 2018, and applies to the assessment year 2018-19 and all subsequent years.

### 6.9.4 Section 115BBG of Income Tax Act

**115BBG. Tax on income from transfer of carbon credits. —**

- (1) *Where the total income of an assessee includes any income by way of transfer of carbon credits, the income tax payable shall be the aggregate of—*
  - (a) *the amount of income tax calculated on the income by way of transfer of carbon credits, at the rate of ten percent, and*
  - (b) *the amount of income tax with which the assessee would have been chargeable had his total income been reduced by the amount of income referred to in clause (a).*
- (2) *Notwithstanding anything contained in this Act, no deduction in respect of any expenditure or allowance shall be allowed to the assessee under any provision of this Act in computing his income referred to in clause (a) of sub-section (1).*



**Explanation.—For this section, “carbon credit” in respect of one unit shall mean the reduction of one tonne of carbon dioxide emissions or emissions of its equivalent gases, which is validated by the United Nations Framework on Climate Change, and which can be traded in the market at its prevailing market price.**

**In conclusion, it can be inferred that the information presented supports the idea.**

| Sr. No | Accounting Treatment | Accounting Standard | Rationale for Categorization   | The advantages are derived from the process of classification.   |
|--------|----------------------|---------------------|--|--|
| 1      | Inventory            | AS-2                | Like inventories, Certified Emission Reductions (CERs) can be acquired and traded in the market and are typically held to be sold as part of regular business operations.  | <ol style="list-style-type: none"> <li>1) The criterion for computation is determined by the lower value between cost and net realizable value (NRV).</li> <li>2) The sale of Certified Emission Reductions (CERs) will be regarded as a standard commercial transaction.</li> </ol> |
| 2      | Intangible Asset     | AS-26               | CERs refer to identified non-monetary assets that lack physical form and are retained to produce goods or services for rental to external parties.   | <ol style="list-style-type: none"> <li>1) The utilization of amortization can be advantageous.</li> <li>2) The tax advantage for the corporation is derived from its classification as an intangible asset.</li> </ol>   |
| 3      | Contingent Asset     | AS-29               | Certified Emission Reductions (CERs) shall be recognized as assets exclusively upon the certification of emission reductions by the United Nations Framework Convention on Climate Change (UNFCCC). Before accreditation, CERs may be regarded as contingent assets. | <ol style="list-style-type: none"> <li>1) The utilization of amortization might provide benefits.</li> <li>2) The tax advantage of categorizing the corporation as an intangible asset.</li> </ol>   |



| Sr. No | Accounting Treatment | Accounting Standard | Rationale for Categorization   | The advantages are derived from the process of classification.  |
|--------|----------------------|---------------------|--|---|
| 4      | Other Income         | AS-9                | The sale of Certified Emission Reductions (CERs) is not typically considered a regular component of corporate trading activity, and therefore, it should be regarded as income derived from alternative sources. | <ol style="list-style-type: none"> <li>1) One factor to consider is the level of computational simplicity.</li> <li>2) Incorporating this additional revenue stream will serve as a supplementary source of income for the company, apart from its regular operations that generate money.</li> </ol> |

#### 6.9.5 Guidance memorandum for professionals in the field of cost accounting about the appropriate accounting methodology for carbon-related transactions.

In conclusion, it is imperative to establish a consensus at national and international levels to reach a unified perspective on the numerous unresolved practical accounting matters pertaining to carbon credits. A global discourse and deliberation are underway over the methodologies for incorporating carbon credits into accounting frameworks. The increasing significance of carbon trading and markets, particularly in developing nations, has led to a recognized necessity for precise establishment.

Standards in carbon accounting. India is a significant exporter of carbon credits to industrialized nations, prompting the Government of India to undertake activities to promote the carbon market and carbon trading. This strategic approach is driven by the potential to generate substantial foreign exchange revenues. Adopting a distinct financial accounting standard is imperative to ensure the effective operation and advancement of carbon markets and carbon trading practices. **Therefore, it is essential that the National Financial Reporting Authority (NFRA), responsible for overseeing and enforcing adherence to accounting and auditing standards, takes the initiative to introduce a globally compatible carbon accounting standard that addresses all carbon accounting issues specific to the Indian context. Until then, it is recommended that Cost Accountants advise the Company to adhere to the principles set out by the International Financial Reporting Standards (IFRS). The rationale behind this recommendation should be provided by including explanatory notes within the Company's financial statements. International Financial Reporting Standards (IFRS) used for carbon handling are deemed more pragmatic and universally recognized by multinational corporations and professional accountants.**



## CHAPTER - 7

# Carbon Audit and Reporting

### 7.1 A Comprehensive Guide to the Carbon Audit Procedure for Cost Accountants

The carbon audit process encompasses assessing and examining an organization's carbon emissions and their corresponding environmental consequences. The present guideline publication provides a comprehensive overview of the fundamental procedures and factors associated with the execution of a carbon audit, with a particular focus on the significant contribution of cost accountants in the precise evaluation and effective administration of the financial consequences stemming from carbon emissions. By incorporating environmental considerations into cost accounting methodologies, organizations can make well-informed decisions that advance sustainability objectives and optimize financial performance.

The growing focus on environmental sustainability has compelled organizations to evaluate and address their carbon emissions and ecological footprint. This guideline emphasizes the importance of the involvement of cost accountants in the carbon audit process since it provides a comprehensive overview of the approach.

### 7.2 Overview of Carbon Audits:

#### Definition and Importance:

- A carbon audit, a carbon footprint assessment or accounting, pertains to the systematic procedure of quantifying and assessing the greenhouse gas emissions (GHG) linked to an organization's activities, products, or services. **The principal aim is to quantify the organization's carbon emissions and other environmental impacts, including energy usage and trash production.** This assessment facilitates organizations in obtaining a comprehensive understanding of their environmental performance, discerning the sources of emissions, and establishing a fundamental reference point for future enhancements.
- **The significance of carbon auditing is in its capacity to advance environmental sustainability and foster responsible corporate citizenship.** Organizations can actively participate in mitigating climate change by evaluating and controlling carbon emissions. This proactive approach not only aids in reducing their environmental impact but also ensures compliance with legislative obligations. Additionally, such efforts can enhance their standing among stakeholders that prioritize sustainability.

### 7.3 Scope and Objectives

The extent of a carbon audit may differ based on factors such as the organization's scale, sector, and goals. Comprehensively, the process entails the assessment of both direct and indirect emissions along the entirety of the value chain. This encompasses a range of activities, including but not limited to manufacturing, transportation, energy utilization, waste handling, and staff commuting.

#### **The primary goals of a carbon audit may encompass:**

- The process of measuring and quantifying greenhouse gas emissions from different emission sources.
- The objective is to ascertain regions characterized by elevated levels of carbon emissions and consequential environmental ramifications.
- The establishment of a baseline is crucial for monitoring growth and advancements over some time.
- Establishing reduction targets that are by sustainability objectives.
- This study assesses the financial ramifications of emissions and their corresponding expenditures.
- Improving openness and accountability via the practice of reporting.

### 7.4 Benefits of Integrating Carbon Audits and Cost Accounting

Integrating carbon audits with cost accounting practices presents numerous advantages for organizations.

- **Cost Reduction:** The analysis of carbon emissions frequently uncovers inefficiencies that have the potential to result in financial savings. Organizations can effectively minimize resource consumption and associated costs by identifying energy-intensive operations and waste creation sources and implementing focused interventions.
- **Operational efficiency:** Operational efficiency can be enhanced through carbon audits, as they offer valuable insights into areas of operational inefficiency. These audits encourage identifying opportunities for process optimization and resource management improvements, ultimately benefiting the organization's financial performance.
- **Risk mitigation:** Risk mitigation is the proactive identification and timely resolution of environmental concerns, thereby averting potential consequences such as regulatory penalties, legal obligations, and harm to reputation. These repercussions can have substantial financial ramifications.
- **Strategic Decision Making:** Integrating carbon-related data into cost accounting facilitates strategic decision-making for organizations, allowing



them to make well-informed choices about investments, resource allocation, and product/service offers. This integration emphasizes both sustainability and profitability as critical considerations.

- **Stakeholder Engagement:** In contemporary business practices, there is a growing expectation from investors, customers, and regulators for organizations to exhibit transparency regarding their environmental performance. Including carbon audits and reporting in financial disclosures bolsters stakeholder trust and fosters more engagement.
- **Innovation and Competitive Advantage:** Organisations that place a high priority on sustainability frequently engage in innovation as a means to address emission reduction objectives, thereby enhancing their competitive advantage. These technological advancements have the potential to

Generate additional sources of income and confer a distinct advantage in the marketplace.

- **Long-term sustainability:** Long-term sustainability is achieved by systematically mitigating carbon emissions by organizations. This proactive approach not only contributes to creating a sustainable future but also serves as a tangible demonstration of their unwavering dedication to environmental responsibility. This commitment to environmental stewardship is paramount for ensuring these organizations' long-term viability and success.

In conclusion, integrating carbon audits with cost accounting enables organizations to oversee their financial and environmental performance comprehensively. This integration aligns with the increasing global focus on sustainability and offers a means to achieve operational efficiency and responsible business behaviour.

## **7.5 Carbon Audit Procedure**

### **Pre-audit Readiness**

- **Formation of Audit Team and Assignment of Roles**

Establishing a meticulously organized audit team is crucial for achieving favourable outcomes in the carbon audit process. The team's composition should consist of persons with pertinent knowledge in the fields of environmental science, data analysis, operations, and finance. It is imperative to provide explicit definitions of the roles and duties of team members. Typical jobs encompass:

- **Project Manager:** The role of the Project Manager encompasses supervising the complete audit process, ensuring effective coordination among all team members, and maintaining project timeframes.
- **Environmental Expert:** The environmental expert possesses specialized knowledge in comprehending the origins of emissions, employing

methodologies for data collecting, and utilizing emission components to ensure precise computations.

- **Data Analyst:** The role of a data analyst involves the management and analysis of gathered data, as well as the execution of calculations and the generation of reports.
- **Cost Accountant:** The role of a Cost Accountant involves assessing the financial consequences of emissions, facilitating the incorporation of environmental expenses into economic evaluations, and providing support in the decision-making process.
- **Operations Specialist:** The Operations Specialist engages in collaborative efforts to identify sources of emissions and proposes operational enhancements.

### **Defining Audit Boundaries and Scope**

- The establishment of precise parameters and the extent of the audit guarantees that the evaluation is thorough and feasible. Several factors should be considered, such as:
- **Organisational Boundaries:** Determining organizational boundaries is crucial in determining the scope of the audit, as it involves deciding whether the audit will encompass the entirety of the organization or be limited to specific facilities, departments, or product lines.
- **Operational Boundaries:** Operational boundaries encompass the delineation of operations subject to audit, including but not limited to manufacturing, transportation, energy utilization, waste production, and employee travel.
- **Geographical Boundaries:** Please clarify whether the audit will encompass emissions from all geographical locations or concentrate on specific regions.
- **Temporal Boundaries:** Temporal boundaries refer to establishing a defined time frame for data collection and assessment. This may involve specifying a particular, fiscal year or reporting period during which the relevant data is gathered and evaluated.

### **The process of gathering organizational data**

The establishment of a robust carbon audit relies upon the acquisition of precise and all-encompassing data. A diverse range of data is required.

- **Emission Data:** The emission data collection involves acquiring information about direct emissions (Scope 1) originating from activities such as fuel combustion and the utilization of owned vehicles, as well as indirect emissions (Scope 2) from energy procurement.



- **Energy Consumption:** Researching Energy Sources and Consumption for Electricity, Heat, and Cooling.
- **Waste Data:** This analysis aims to discern the many methods employed for generating and disposing of solid, liquid, and hazardous waste.
- **Travel and Commuting Data:** This study aims to collect comprehensive data on employee commuting patterns and business travel activities, encompassing both air travel and road transportation.
- **Operational Data:** Operational data encompasses all aspects of a company's operations, including production output, process specifics, and other pertinent operational information.

To uphold the correctness and dependability of data, it is imperative to adhere to consistent measurement standards, rely on credible sources, and contemplate utilizing specialized software for data management.

**The initial phase of pre-audit preparation serves as a crucial step in ensuring the effectiveness of a carbon audit.** This phase involves the formation of an appropriate team, the establishment of the audit scope, and the collection of precise and reliable data. The successful implementation of a thorough preparatory phase establishes the foundation for efficient data analysis and well-informed decision-making in the later stages of the carbon audit procedure.

## 7.6 Data Collection and Analysis:

- **The process of identifying emission sources:**

Identifying emission sources entails classifying activities, processes, and equipment within the organizational framework responsible for releasing greenhouse gases. **The emissions are commonly categorized into three scopes.**
- **Scope 1 emissions** refer to the direct emissions originating from sources owned or under the organization's control. These emissions primarily result from the combustion of fossil fuels within on-site facilities, company-owned cars, and equipment.
- **Scope 2 emissions** refer to the indirect emissions from the consumption of purchased electricity, heating, and cooling within an organization.
- **Scope 3 emissions** encompass the indirect emissions arising from actions beyond the organization's direct control. These emissions include those associated with the supply chain, business travel, staff commuting, and trash disposal.

Analyse the gathered data to quantify the emissions associated with each scope, employing suitable emission factors and methodologies.



**Note to Cost Accountants: Scope 1, Scope 2, Scope 3 is most important. IFRS Sustainability S2 standard deals with these three scope.**

- **Collecting Energy Consumption Data**

The collection of energy consumption data plays a crucial role in evaluating emissions associated with the utilization of power, heating, and cooling systems. Gather empirical data about various energy sources, including but not limited to grid electricity, natural gas, and renewable sources, specifically focusing on the quantities of energy consumed. This information can be compiled using utility bills, energy meters, and invoices.

To determine the emissions related to energy consumption, it is necessary to multiply the energy consumption by the emission factors specific to each energy source.

- **Examining the Generation and Management of Waste**

The evaluation of waste creation necessitates a comprehensive comprehension of the various categories and quantities of waste generated due to an organization's operational endeavours. Gather empirical evidence on the disposal of solid, liquid, and hazardous waste. The data above can be acquired by examining trash disposal records, waste management contracts, and waste audit reports.

This study assesses waste management practices, encompassing recycling, composting, and disposal options. Evaluate the emissions associated with waste management procedures, including the transportation and emissions generated from landfills.

- **Evaluating Alternative Environmental Impact Metrics**

While the primary emphasis lies on carbon emissions, evaluating additional environmental impact indicators, including water consumption, air pollutants, and resource use, such as raw materials, is advisable. These measurements offer a more holistic perspective on the organization's endeavours toward sustainability.

Examine the indicators above concerning the organization's operational activities and compute the relevant environmental ramifications. This comprehensive evaluation has the potential to generate valuable insights regarding functional enhancements that extend beyond the scope of carbon reduction.

- **The process of analysing and calculating data.**

Once the data about emission sources, energy consumption, trash creation, and other relevant metrics has been gathered, it should be analysed using



suitable techniques and software. Determine each category's emissions and scope using established emission factors and computation procedures. It is imperative to maintain uniformity in the usage of units and the execution of conversions.

By conducting a comparison between the calculated emissions and industry benchmarks or historical data, it becomes possible to identify.

Specific areas that require improvement and establish targets for emission reduction.

***The phase of data gathering, and analysis holds significant importance in constructing a precise depiction of the organization's environmental impact. The provided information forms the foundation for formulating strategies to mitigate emissions, enhance operational efficiency, and align sustainability objectives with cost accounting methodologies.***

## 7.7 Quantification and Reporting

The process of quantification and reporting involves the measurement and documentation of data in a systematic and structured manner.

### Quantifying Greenhouse Gas Emissions

***To quantify greenhouse gas emissions, it is necessary to adhere to the following procedural guidelines:***

- Using standardized emission factors is recommended for quantifying emissions associated with various activities, fuels, and energy sources. These parameters facilitate the conversion of energy consumption or activity data into CO<sub>2</sub> emissions equivalents.
- **Emissions Calculation:** Perform individual calculations for each scope, namely Scope 1, Scope 2, and Scope 3. To obtain the total emissions, it is necessary to aggregate them from many sources within each scope.
- **Conversion:** The conversion process involves transforming emissions from various greenhouse gases, such as methane and nitrous oxide, into comparable carbon dioxide (CO<sub>2</sub>) emissions. This conversion is achieved by utilizing global warming potentials (GWP), which provide a standardized measure of the warming potential of each greenhouse gas relative to CO<sub>2</sub>.
- **Validation:** Validate the correctness and consistency of calculations. The credibility of a subject can be enhanced by the external verification process conducted by a third-party auditor.
- **Developing a Carbon Footprint Report**

A carbon footprint report consolidates the quantified emissions and offers valuable perspectives on an entity's ecological ramifications.

**The information ought to encompass the following components:**

- **Introduction and executive summary of the document.**  
It provides a brief overview of the content and key findings presented in the subsequent sections.
- **Methodology:** Elucidating data sources, emission factors, and computational approaches employed.
- **Scope-wise Emissions:** Comprehensive analysis of emissions categorized into Scope 1, 2, and 3, accompanied by meticulous computations.
- **Sources of Emissions:** This inquiry pertains to the comprehensive examination of significant sources of emissions and their corresponding contributions.
- **Comparison:** This analysis assesses and contrasts emissions from past years, industry benchmarks, or established sustainability targets.
- **Strategies for Emission Reduction:** Suggestions for Emission Reduction Strategies and their Potential Impact.
- **Visualisation:** Visualisation refers to using various graphical representations, such as graphs, charts, and tables, to convey data effectively.

In conclusion, the findings of this study provide valuable insights into the topic at hand. The results indicate a significant correlation between X and Y, suggesting a potential causal relationship. These findings contribute to the

An effectively organized carbon footprint report serves as a means of conveying an organization's endeavours and advancements in mitigating its carbon emissions.

**The financial ramifications associated with carbon emissions.**

Comprehending the financial consequences of carbon emissions necessitates amalgamating emission data with cost accounting methodologies. The process involves the following steps:

- **Monetary Valuation:** The process of assigning monetary values to emissions is facilitated via internal or external pricing mechanisms, such as carbon pricing or the social cost of carbon.
- **Carbon Cost Allocation:** Carbon cost allocation aims to assign carbon costs to the appropriate departments, initiatives, or goods. This aids in the identification of regions with high emissions and potential avenues for achieving cost reductions.
- **Cost-Benefit Analysis:** This study aims to assess and contrast the expenses associated with emission reduction measures against the potential financial gains, encompassing energy savings, improvements in operational efficiency, and advantages in regulatory compliance.



- **Budgeting and Investment:** Integrating Emission Reduction Initiatives into Budgeting and Investment Decisions It is recommended to prioritize projects that align with sustainability objectives and provide favourable financial outcomes.

Organizations can align with environmental and financial objectives by measuring the financial repercussions of carbon emissions, enabling them to make educated decisions.

The measurement and reporting phase is crucial in facilitating transparent communication of an organization's carbon emissions, establishing reduction objectives, and formulating strategies to promote a more sustainable future. Furthermore, it enables the incorporation of environmental considerations into implementing cost accounting methodologies, facilitating a comprehensive approach to decision-making.

## 7.8 Identifying Reduction Opportunities:

### Establishing Reduction Targets

Establishing reduction targets is crucial in ensuring an organization's environmental objectives align with its operational and financial aims.

#### The following instructions outline the process:

- **Baseline Comparison:** Utilise the carbon footprint report to build a foundational reference point for the existing level of emissions. This baseline should be compared to industry norms, regulatory requirements, and internal sustainability goals.
- **SMART Targets:** SMART targets refer to establishing reduction targets that are Specific, Measurable, Achievable, Relevant, and Time-bound. For instance, set a precise target for reducing emissions by a designated year.
- **Scope-Based Targets:** It is advisable to establish individual targets for each emission scope (Scope 1, 2, and 3) to effectively address the organization's value chain.
- **Continuous Improvement:** Develop a strategic plan for the progressive reduction of emissions over several years to adopt a sustainable strategy.

### Strategies for Mitigation that are economically efficient.

This study identifies and prioritizes options for mitigating carbon emissions, considering their respective financial implications. **Several effective tactics can be employed.**

- **Energy Efficiency:** Energy-efficient technology, equipment upgrades, and process optimization can mitigate energy consumption and emissions.

- **Renewable Energy:** Adopting renewable energy sources such as solar, wind, and hydroelectric power is advocated to reduce Scope 2 emissions.
- **Transportation Optimisation:** This study aims to enhance the efficiency of logistics and transportation routes to minimize emissions generated by company-owned vehicles and those inside the supply chain.
- **Waste Reduction:** To mitigate emissions resulting from waste disposal, it is imperative to establish and execute waste reduction and recycling initiatives.
- **Employee Engagement:** The objective is to enhance staff engagement by fostering a sense of sustainability consciousness and promoting energy-saving behaviours.

Evaluate the probable implications of each option on emissions and costs. It is advisable to prioritize techniques that effectively balance reducing emissions and yielding financial advantages.

### **The Incorporation of Budgeting and Financial Planning**

Incorporate emission reduction techniques into budgeting and financial planning processes.

- **Budget Allocation:** Appropriately distribute financial resources to support programs to reduce emissions by predetermined reduction targets.
- **ROI Evaluation:** Determine the Return on Investment (ROI) for any emission reduction initiative. This analysis assesses how much the anticipated financial gains surpass the associated expenses.
- **Long-term planning:** Incorporating emission reduction programs into long-term financial planning is essential for maintaining a constant commitment and allocation of resources.
- **Performance indicators:** This section aims to provide a comprehensive definition of financial and non-financial indicators that can be utilized to monitor the advancement and effectiveness of emission reduction projects.
- **Risk Assessment:** This analysis evaluates the potential risks and uncertainties of emission reduction programs, considering regulatory changes and technological improvements.

Organizations can enhance the support and alignment of sustainability programs with their overall company objectives by incorporating emission reduction plans into their budgeting and financial planning processes.

Identifying reduction opportunities plays a crucial role in converting the insights from a carbon audit into practical measures that effectively decrease emissions, lower expenses, and contribute to establishing a more sustainable organization.



## 7.9 Monitoring and Continuous Improvement

### Implementation of Tracking Mechanisms

Tracking methods are crucial to effectively monitor the progress towards achieving emission reduction targets and assure continuous advancements in this area. The following section outlines the steps to create a robust tracking system.

- **Data Collection system:** The implementation of data collection systems is crucial for the constant gathering and maintenance of emission-related data, encompassing many aspects such as energy consumption, waste creation, and other pertinent metrics.
- **Automated Monitoring:** It is advisable to utilize software solutions that facilitate the automation of data gathering, processing, and reporting processes. Implementing automation systems has been shown to minimize errors and effectively guarantee timely updates.
- **Key Performance Indicators (KPI):** Key Performance Indicators (KPIs) are quantifiable metrics used to evaluate an organization's or individual's performance and progress towards achieving their goals. KPIs serve as benchmarks that enable the measurement of success. "Key Performance Indicators (KPIs)" refers to quantifiable metrics used to assess and evaluate progress toward achieving reduction targets. Key performance indicators (KPIs) include emissions per production unit, energy intensity, and waste reduction rates.
- **Regular Audits:** It is advisable to perform routine internal audits to verify the precision of data, detect any potential problems, and resolve any inconsistencies that may arise.

### Regular Reporting and review:

Reporting and review play a crucial role in ensuring the effectiveness and efficiency of academic processes.

Regular reporting and review processes play a crucial role in upholding transparency, fostering stakeholder engagement, and pinpointing potential areas that require enhancement.

- **Reporting Frequency:** The reporting frequency should be determined by establishing the regularity with which progress will be reported, such as on a quarterly, semi-annual, or annual basis. Ensure that reporting is synchronized with the financial reporting cycles of the organization.
- **Stakeholder Engagement:** Disseminate progress reports to stakeholders, encompassing employees, investors, customers, and regulators. This promotes a higher level of responsibility and transparency.

- **Comparative Analysis:** This analysis aims to compare the actual emissions with the reduction targets, focusing on identifying areas where progress is being made as planned and where modifications are required.
- **Lessons Derived:** Communicate accomplishments, obstacles, and insights acquired during the reduction process. This practice facilitates the dissemination of knowledge and promotes ongoing enhancement.

### Modifying Strategies for Enhancement

Flexibility and adaptability are crucial in facilitating the successful implementation of continuous improvement strategies.

- **Feedback mechanisms:** Feedback mechanisms are implemented to promote the active participation of employees and stakeholders in identifying operational difficulties and exploring potential solutions.
- **Performance Evaluation:** It is imperative to evaluate the efficacy of adopted reduction techniques consistently. If a strategy fails to yield anticipated outcomes, it is advisable to contemplate adjustments or alternative methodologies.
- **Technological Advancements:** Staying abreast of technical breakthroughs is crucial to remain informed about potential innovations that may contribute to enhancing emission reduction efforts. Assess novel solutions and adapt strategy accordingly.
- **Monitoring Regulatory Changes:** It is essential to be informed about the dynamic nature of environmental rules that can potentially influence emissions. Adapt strategies to maintain compliance and take advantage of regulatory incentives.
- **Innovation:** Promote a conducive environment for fostering innovation and experimentation to uncover novel emission reduction and operational optimization approaches.

The monitoring and continual improvement phase is essential to maintain the dynamism and alignment of emission reduction efforts with the organization's aims. Organizations can achieve continuing environmental improvements and optimize financial performance by employing a systematic approach that involves measuring progress, reviewing outcomes, and altering methods.

**7.9.1 Role of Cost Accountants:** Cost accountants analyse and report the financial costs of a company's operations. They are responsible for collecting and analysing data on producing goods or services and identifying areas where costs can be reduced.

**Emissions Cost Allocation:** Cost accountants are pivotal in allocating emissions-related expenses across the entire organization. **This entails:**



- **Emission Cost Identification:** Identifying emission costs involves collaborating with the audit team to ascertain direct and indirect emissions charges. This includes evaluating energy costs, waste management expenditures, and costs incurred for compliance purposes.
- **Activity-Based Costing:** The utilization of activity-based costing principles is employed to assign costs associated with emissions to appropriate cost centres, departments, goods, or projects.
- **Scope Differentiation:** Differentiate between costs associated with Scope 1, 2, and 3 emissions, allowing for more accurate cost allocation and analysis.
- **Transparent Reporting:** The objective is to guarantee the inclusion of emission-related costs in financial statements and management reports transparently.

### **Analysis of Financial Reduction Strategies**

Cost accountants play a crucial role in offering financial analysis and evaluating the efficacy of emission reduction initiatives.

- **Cost Benefit Analysis:** The proposed approach involves engaging in a cost-benefit analysis by collaborating with environmental experts to assess the economic implications and advantages of different techniques aimed at reducing emissions. Evaluate the financial consequences in both the immediate and extended time frames.
- **ROI Calculation:** This analysis aims to compute the Return on Investment (ROI) for various techniques to ascertain the most financially advantageous efforts that contribute to emissions reduction.
- **Payback period:** The payback period refers to the duration required for emission reduction projects to recoup the initial investment through cost savings.
- **Risk Assessment:** This study assesses the financial risks of various tactics, encompassing legislative alterations, market volatilities, and technological uncertainties.

### **The Process of Budgeting and Making Investment Decisions**

Cost accountants are vital in integrating emission reduction initiatives into budgeting and investment choices.

- **Budget Allocation:** Engage in collaborative efforts with cross-functional teams to allocate resources for initiatives to reduce emissions, employing financial analysis and adhering to specified reduction targets.
- **Project Prioritisation:** The objective of this exercise is to assess and assign a relative ranking to emission reduction initiatives, taking into consideration their financial feasibility, impact on emissions, and alignment with the organization's overarching strategic goals.

- **Resource Allocation:** Resource allocation is crucial to effectively managing projects aligned with emission reduction targets. It is imperative to ensure that both financial and non-financial resources are distributed in a manner that adequately supports these initiatives.
- **Performance Tracking:** Develop a set of financial performance indicators to monitor the advancement and results of emission reduction projects effectively. This study analyses the disparities between actual economic outcomes and anticipated estimations.

***Cost accountants are crucial in aligning environmental objectives with financial decision-making processes. Organizations can achieve a harmonious equilibrium between sustainability and profitability by including emission-related costs and strategies in their economic analysis, planning, and investment decisions. This enables them to make well-informed choices.***

### 7.9.2 Challenges and Considerations

#### Data Accuracy and Availability

Data accuracy and availability are fundamental to the success of a carbon audit. Challenges include:

- **Incomplete Data:** Some data may be missing or incomplete, especially when dealing with historical records or complex supply chains.
- **Data Quality:** Inaccuracies in data collection, conversion factors, and unit measurements can lead to flawed calculations and misleading results.
- **Reliability:** Reliance on data from various sources may lead to discrepancies or uncertainties in emissions calculations.

Organizations must establish robust data collection processes to mitigate these challenges, invest in data management tools, and implement quality control measures.

#### Integration of Environmental and Financial Data

Integrating environmental and financial data poses challenges due to differences in measurement units, reporting structures, and organizational silos. Considerations include:

- **Data Compatibility:** Financial and environmental data often reside in different systems. Ensuring compatibility and seamless integration is crucial.
- **Cross-functional collaboration:** Effective integration requires cooperation between environmental experts, cost accountants, and other relevant teams.
- **Standardization:** Establish standardized metrics and reporting formats, bridging the financial and environmental reporting gap.



Organizations can bridge the gap between environmental and financial data by fostering cross-functional communication and investing in data integration tools.

### **Regulatory Compliance and Reporting**

Navigating complex and evolving environmental regulations can be challenging:

- **Reporting Requirements:** Different jurisdictions have varying reporting requirements for emissions, making compliance complex.
- **Changing Regulations:** Regulations may change, requiring organizations to adapt their reporting practices continuously.
- **Penalties and Liabilities:** Non-compliance with regulations can lead to financial penalties, legal liabilities, and reputational damage.

To address these challenges, organizations should stay updated on relevant regulations, engage legal experts, and implement robust reporting mechanisms that ensure compliance.

Addressing these challenges and considerations requires careful planning, coordination, and a commitment to transparency and accuracy. Organizations that successfully navigate these challenges can achieve meaningful carbon reduction and improve operational efficiency and financial performance while demonstrating environmental responsibility.

#### **7.9.3 Why is the job of the cost accountant so vital in the carbon audit? And what makes a cost accountant superior to other types of financial accountants?**

Incorporating carbon audits into cost accounting practices is a powerful method that ties environmental sustainability with financial performance. This alignment is essential for a variety of reasons. In this process, the function that cost accountants play is of the utmost importance since they serve as a bridge between ecological responsibility and economic considerations. Companies can proactively address their carbon emissions and their impact on the environment while optimizing their financial operations by following the detailed protocol for conducting carbon audits **discussed in this guideline Book.**

Cost accountants play a crucial role in accurately estimating the financial implications of carbon emissions. They offer insights that lead to the creation of successful methods for reduction. Thus, they must do their jobs well. They were able to simplify the process of locating sources of emissions, determining total emissions, and conducting a cost-benefit analysis of potential mitigation strategies through collaborative efforts with environmental specialists. Through this partnership, organizations can make informed decisions that balance the imperative of sustainability and the economy's viability.

The carbon audit technique that has been outlined provides organizations with an organized structure that they should follow. The process begins with developing

a pre-audit, continues with the collection, analysis, and reporting of data, and then.

Concludes with the quantification of emissions. This establishes a strong foundation for the succeeding processes. **Cost accountants contribute to cost-efficient strategies that yield environmental and financial gains as their organizations identify reduction opportunities and set targets.** This integration extends to budgeting and investment decisions, which helps to ensure that actions to reduce emissions are incorporated into long-term financial planning.

During the period of monitoring and continuous improvement, it will be ensured that the organization's efforts will continue to be fluid and adaptive. A cycle of progress that is in sync with the ever-evolving environmental and financial goals can be fostered through consistent reporting, active participation from stakeholders, and revisions to the strategic plan.

**Organizations can go beyond their typical confines if they adopt this all-encompassing method for conducting carbon audits and involve cost accountants as essential partners.** Not only do they manage the environmental imprint that they leave behind, but **they also pave the way for innovation, increased operational efficiency, and the realization of a sustainable future.** Combining carbon audits and cost accounting is a proactive strategy that contributing to global well-being and organizational performance. This is because environmental issues are continuing to shape the corporate landscape.



## CHAPTER - 8

### Case Studies

#### 8.1 Effective Implementation of Carbon Practises and Environmental, Social, and Governance (ESG) Reporting in an Indian Manufacturing Company

##### The background information is as follows:

ABC Manufacturing Ltd., a prominent Indian manufacturing company, acknowledged the increasing significance of environmental sustainability and the imperative to harmonize its operations with internationally recognized benchmarks. The organization sought to diminish carbon emissions, improve its environmental, social, and governance (ESG) metrics, and demonstrate its dedication to ethical business conduct.

- **Challenges:**

One of the primary obstacles faced in this study is the lack of available data—additionally, The absence of a comprehensive framework for carbon accounting.

The user is restricted in comprehending the reporting obligations about environmental, social, and governance (ESG) factors.

The imperative of fostering cross-functional collaboration to propel sustainability initiatives.

Achieving a harmonious integration of sustainability objectives with operational efficiency and financial profitability.

- **Approach:**

ABC Manufacturing Ltd. implemented a strategic approach to incorporate carbon practices and Environmental, Social, and Governance (ESG) reporting into its operational framework.

##### The implementation of a Carbon Accounting Framework:

- Engaged in collaborative efforts with external subject matter experts to establish a comprehensive and resilient framework for carbon accounting.
- The organization successfully deployed data collection and measurement systems to assess carbon emissions throughout its various operational activities quantitatively.

##### The identification of environmental, social, and governance (ESG) metrics.

- Performed a comprehensive evaluation of environmental, social, and governance (ESG) metrics pertinent to the manufacturing sector.
- The user has established key performance indicators (KPIs) about environmental, social, and governance dimensions.

- **Cross-functional teams are a collaborative work approach involving individuals from different functional areas within an organization.** These teams are formed to address.
- Established specialized cross-functional teams consisting of individuals from various departments, including operations, finance, human resources, and sustainability.
- Ensured the congruence of sustainability initiatives with the overarching business objectives.
- **The incorporation of technology** into various aspects of education and learning processes is commonly referred to as technology integration.
- Implemented technology-based solutions to facilitate the real-time monitoring of energy consumption, emissions, and resource utilization.
- **The utilization of Internet of Things (IoT) sensors and analytics tools** have been employed to monitor and enhance energy efficiency.
- **Employee engagement refers to the level of commitment, motivation,** and involvement that employees have toward their work and the organization in which they are a part.
- Implemented awareness campaigns aimed at educating employees about carbon practices and sustainability.
- Promoted and fostered employee engagement in energy-conservation endeavours.
- **The act of collaborating with suppliers** is an essential aspect of business operations.
- Engaged in collaborative efforts with suppliers to promote sustainable sourcing practices and mitigate the environmental impact of supply chain emissions.
- Promoted the adoption of comparable carbon reduction strategies among suppliers.

**Results:**

- ABC Manufacturing substantially decreased carbon emissions by implementing energy optimization strategies and energy-efficient technologies.
- The company experienced enhancements in its environmental, social, and governance (ESG) performance, leading to favourable outcomes regarding its reputation and relationships with stakeholders.
- The implementation of energy-saving initiatives led to significant financial savings in terms of reduced utility expenses.



- ABC Manufacturing demonstrated regulatory compliance by adhering to emerging environmental regulations, establishing itself as a conscientious participant within the industry.
- **Innovation:** *The company's incorporation of the Internet of Things (IoT) and analytics technologies resulted in advancements in process efficiency and decreased wastage.*

#### Key Takeaways:

- The commitment of leadership is crucial in driving sustainability initiatives throughout the organization.
- The utilization of a data-driven approach involves the systematic collection and analysis of data, facilitating the acquisition of valuable insights that can inform and guide decision-making processes.
- The involvement of multiple departments in cross-functional collaboration ensures a comprehensive implementation of carbon practices and environmental, social, and governance (ESG) reporting.
- The involvement of employees, suppliers, and stakeholders is instrumental in augmenting the efficacy of sustainability endeavours through stakeholder engagement.

#### In conclusion,

***The effective adoption of carbon practices and ESG reporting by ABC Manufacturing Ltd. resulted in a notable reduction in its environmental footprint and enhanced operational efficiency and stakeholder confidence. The present case study elucidates the favourable consequences of implementing a systematic strategy for incorporating sustainability practices within the manufacturing industry.***

### 8.2 Case Study 2: The Dilemmas Encountered by a Service Sector Enterprise in the Integration of Carbon Practises and the Mitigation of Environmental, Social, and Governance (ESG) Concerns

- **Background:** XYZ Services Pvt. Ltd., a prominent entity in the service sector, has acknowledged the significance of addressing carbon emissions and environmental, social, and governance (ESG) concerns to conform to the changing sustainability expectations. Nevertheless, as a company prioritizing service delivery, it encountered distinct obstacles when implementing carbon practices and environmental, social, and governance (ESG) mitigation strategies.

#### Challenges:

- **Emission Attribution:** Identifying and Assigning Carbon Emissions in a Service-Centric Business Model.



- **Tangible Impact:** This study assesses the tangible impact of emissions reduction and environmental, social, and governance (ESG) contributions compared to manufacturing firms.
- **Employee Engagement:** The topic of discussion pertains to employee engagement, specifically focusing on the involvement of a diverse workforce in sustainability initiatives across a range of service offerings.
- **Resource Limitations:** Navigating budget constraints and resource limitations in the context of sustainability investments.

#### **Approach:**

To effectively tackle the unique challenges faced by the service sector, XYZ Services Pvt. Ltd. adopted a strategic approach.

#### **The methodology for measuring emissions:**

- Collaborated with experts to develop a methodology for calculating carbon emissions specific to the nature of service offerings.
- Determined factors such as energy consumption, travel, and technology usage contributing to emissions.
- This study examines various factors contributing to emissions, including energy consumption, travel patterns, and technology usage.

#### **Enhancing Participation via Educational Approaches:**

- Implemented awareness campaigns to educate employees about the organization's dedication to carbon reduction and environmental, social, and governance (ESG) principles.
- The employees were given the authority to identify opportunities for reducing emissions within their roles.

#### **Innovative Technologies:**

- Utilised digital solutions in a leveraged manner to mitigate the necessity of travel and minimize reliance on paper-based processes.
- The organization has introduced remote work alternatives as a means to mitigate emissions associated with commuting.

#### **Partnerships and Collaborations:**

- Engaged in collaborative efforts with clients to collectively investigate strategies to reduce emissions in pursuit of mutually agreed-upon objectives.
- Collaborated with technology providers to devise innovative solutions to monitor and mitigate the environmental impact of digital activities.



### **Tailoring ESG Reporting to Service-Specific Contexts:**

- The task involves the development of environmental, social, and governance (ESG) reporting frameworks that specifically emphasize the distinctive contributions and challenges encountered by entities operating within the service sector.

### **Outcomes:**

***XYZ Services Pvt. Ltd. has successfully achieved significant reductions in emissions by implementing remote work practices, embracing digitalization, and optimizing travel strategies.***

***Employee engagement was observed as employees actively embraced sustainability as an integral aspect of the company's culture, offering innovative ideas to reduce emissions.***

- **Client Engagement:** *Implementing collaborative emission reduction initiatives with clients has enhanced client relationships and demonstrated a mutual commitment to sustainability.*
- **The implementation of digitalization initiatives** *resulted in enhanced operational efficiency by streamlining processes and reducing resource utilization.*

### **The Acquisition of Knowledge: Reflections and Insights**

- A personalized approach: To effectively tackle the distinct challenges encountered in the service sector, developing strategies specifically tailored to address these issues is necessary.
- The role of employees as champions of sustainability becomes evident when they possess a comprehensive understanding of the company's objectives and their contributions towards attaining them.
- Establishing shared goals through client collaboration can lead to collective emissions reduction efforts.
- The digital transformation process encompasses implementing digital technologies, which enhances operational efficiency and contributes to reducing carbon emissions.

### **In conclusion, it can be inferred that**

*The above study of XYZ Services Pvt. Ltd. highlights service sector organizations' intricate challenges when attempting to incorporate carbon practices and address environmental, social, and governance (ESG) issues. By employing inventive approaches, fostering collaboration, and actively involving employees, the organization effectively showcased that service-oriented enterprises can substantially contribute to reducing emissions and adopting sustainable practices. **This case study provides insights into the distinctive obstacles and prospects encountered during the sustainability journey of the service sector.***

## CHAPTER - 9

# Role of Cost Accountants in ESG Reporting

### 9.1 Cost Accountants enable precise carbon accounting and environmental, social, and governance (ESG) reporting.

**Cost accountants** enable precise carbon accounting and efficient Environmental, Social, and Governance (ESG) reporting within organizations. With their proficiency in financial analysis, data management, and strategic decision-making, they possess a distinctive ability to make valuable contributions to these essential facets of sustainability. **The following is a step-by-step guide on how to accomplish this task:**

- **Data Collection and Analysis:** Professionals in cost accounting possess expertise in acquiring, examining, and interpreting financial data. This aptitude exhibits a high degree of applicability in gathering and evaluating data about carbon emissions, energy usage, waste production, and other environmental indicators. Ensuring precise measurement and comprehensive reporting of these factors is imperative for establishing dependable carbon accounting.
- **Cost-Benefit Analysis:** The evaluation of costs and benefits. Accounting professionals can evaluate the financial ramifications associated with diverse sustainability endeavours. One can assess the financial implications of implementing emission reduction projects, energy efficiency measures, and sustainable practices by comparing the associated costs with the potential savings and benefits. The present analysis facilitates decision-making by discerning projects with optimal financial and environmental benefits.
- **Emission Calculation and Reporting:** Cost accountants can collaborate with technical experts to calculate carbon emissions from various operational activities. One way in which they can guarantee the accuracy, consistency, and adherence to pertinent standards of emission calculations is by implementing measures to ensure these outcomes. Furthermore, they can generate comprehensive reports that effectively convey emissions data to various stakeholders, both within and outside the organization, in a manner that is easily understandable and readily accessible.
- **Compliance and Regulation:** ESG reporting frequently necessitates adhering to various regulations and standards. Cost accountants ensure that an organization's carbon accounting practices and environmental, social, and governance (ESG) reporting are by applicable laws and industry standards. By doing so, they effectively mitigate the risk of non-compliance.
- **Evaluation Criteria and Standards:** Cost Analysis Accounting professionals possess the capability to develop performance metrics and benchmarks



about sustainability. Organizations can establish key performance indicators (KPIs) that monitor and measure progress in reducing emissions, enhancing energy efficiency, minimizing waste, and achieving other sustainability objectives. These metrics facilitate the assessment of progress and the identification of areas that require improvement.

- **Financial Integration:** The implementation of sustainability initiatives necessitates the allocation of financial resources. The topic of cost will be discussed in the following analysis. Accounting professionals can incorporate sustainability budgets, expenditures, and savings within the broader economic structure of an organization. This practice guarantees that sustainability initiatives are held to financial responsibility and maintain high transparency.
- **Communication with Stakeholders:** Cost Accountants can effectively communicate the financial ramifications of sustainability endeavours to internal and external stakeholders. The authors can elucidate how emission reductions and other enhancements in the environmental domain contribute to attaining long-term cost savings and creating value.
- **Alignment of Business Strategy:** Cost Accounting professionals possess the ability to effectively harmonize sustainability objectives with the broader framework of corporate strategy. Organizations can discern projects and initiatives that mitigate environmental harm and blend with the entity's strategic goals and financial aspirations.

***In the context of a dynamic and ever-changing business environment, where incorporating sustainability factors is increasingly crucial for achieving success, the role of Cost Accountants assumes significant importance. Cost Accountant professionals serve as essential intermediaries, facilitating the connection between financial information and the pursuit of sustainability goals. The individuals' capacity to quantify, analyse, and effectively communicate the economic consequences of sustainability initiatives renders them indispensable participants in inaccurate carbon accounting and ESG reporting.***

## 9.2 The requisite skillset for cost accountants to flourish in carbon audit and environmental, social, and governance (ESG) reporting.

Cost accountants must have many skills to succeed in carbon audit and ESG reporting responsibilities, including understanding finance, sustainability, data analysis, and communication. **Here is a comprehensive analysis of the core competencies required to excel in various settings:**

- **Sense for money:** Expertise in financial concepts, accounting practices, and cost apportionment techniques. Knowledgeable in calculating the monetary value of sustainability programs and emission reduction measures.
- **Learning about Sustainability:** In-depth familiarity with topics related to environmental sustainability, such as carbon emissions, energy efficiency,

waste management, and sustainable methods. The ability to understand and **apply ESG frameworks, reporting standards (such as GRI and SASB), IFRS Sustainability S1 and S2 Standards**, and applicable laws and policies.

- **Analysing and interpreting the data:** Experience working with and analysing massive datasets containing information about greenhouse gas emissions, energy use, and other sustainability indicators. Capacity to use data analysis skills such as trend spotting and pattern recognition to make sound judgments.
- **Knowledgeable in the Field:** Knowledge of emission factors, conversion factors, and calculating methods for carbon emissions. Ability to use the necessary carbon accounting and ESG reporting software.
- **IT Expertise:** Familiarity with databases, spreadsheet programs, and sustainability reporting applications. Capacity to appropriately alter and present data to provide insightful reports.
- **Ability to Express Oneself:** Ability to correctly and concisely present complicated environmental and financial information in writing and verbally. Power to compile thorough sustainability reports that meet ESG reporting requirements.
- **Paying Close Attention:** Accurate carbon accounting and ESG disclosures need meticulous data collection, analysis, and reporting.
- **Involvement of Stakeholders:** Capacity to work with others and actively seek knowledge from peers, technical experts, external partners, and stakeholders to advance sustainability efforts.
- **Consciousness of Regulations: Familiarity** with environmental reporting and disclosure laws, both domestically and globally. Understanding how sustainability goals fit into the organization's larger business plan and financial goals is the tenth component of business strategy alignment.
- **Ethical Considerations:** Awareness of ethical considerations associated with ESG decisions and responsible business practices' significance. Ability to analyse a situation and develop workable solutions to problems, such as emission reduction, sustainability objectives, and ESG performance.
- **Flexibility:** - A commitment to keeping up with the latest developments in carbon accounting methods, ESG reporting systems, and best practices in the field. Ability to lead sustainability efforts and effect good change within the organization.
- **Leadership and Teamwork:** Dedicated to lifelong education and professional development in carbon accounting, sustainability, and ESG reporting.

For cost accountants to succeed in carbon audit and ESG reporting jobs, they need a varied skill set that includes financial acumen, sustainability understanding, data management abilities, and good communication.



These abilities can help businesses achieve sustainability goals and improve their environmental impact.

### 9.3 Establishing collaborative efforts with several departments is crucial to achieving complete reporting.

***In the context of environmental, social, and governance (ESG) reporting and carbon accounting, the formation of coordinated efforts across several departments is critical to delivering comprehensive and accurate reporting.***

To guarantee that all relevant information is gathered and integrated into the reporting process, cross-functional collaboration is essential for sustainability programs and ESG reporting, which touch on many areas of an organization's activities. **Why working together is so important.**

- **Accurate and complete data collection:** The records for pollution, energy use, garbage disposal, social effects, and more are scattered throughout various departments. Working with these divisions guarantees that no critical information is missed.
- **The Big Picture:** When reporting on environmental, social, and governance factors, businesses must take a comprehensive approach. Working together improves the overall presentation.
- **Participation of Stakeholders:** By working together, the interests and concerns of all parties may be considered, resulting in more insightful and valuable reporting.
- **Competence across Disciplines:** There is specialized knowledge in each department. Working together allows this knowledge to be combined for more complete reporting.
- **Recognising Potential Benefits and Dangers:** Prospects, hazards, and improvement prospects in sustainability that may not be obvious within a single department can be uncovered through collaboration.
- **Consistency with the Overarching Plan:** A more strategic approach to sustainability can be fostered by incorporating input from multiple departments into a single report.
- **Involvement of Workers:** The participation and ownership of sustainability goals is increased when employees from different departments are included in the reporting process.
- **Reducing Redundant Steps:** By working together, teams can more easily spot areas where data is lacking, or processes might be streamlined.
- **Openness and Responsibility:** Collaboration increases responsibility for sustainability objectives by fostering openness in data gathering and reporting.



- **Integrated Initiatives:** - Through teamwork, sustainable programs can be designed to draw on several different divisions' expertise.
- **Creativity:** - Working collaboratively across departments to solve problems related to sustainability fosters creative and original approaches.
- **Regulatory Compliance** - Many legislation and standards necessitate reporting across a broad spectrum of business activities. Working together guarantees conformity. Data from different divisions facilitates well-informed decision-making regarding sustainability programs and targets.

**In conclusion, obtaining reliable information for ESG reporting and carbon accounting requires teamwork across several divisions. This method improves the company's capacity to comprehensively assess its sustainability performance and promote positive outcomes through data-informed decision-making.**

#### **9.4 Reasons why cost accountants make the most sense for reporting and certifying on ESG, carbon, and CSR initiatives:**

Due to their specialized knowledge, financial savvy, and cross-functional viewpoint, cost accountants are ideally suited to take the lead in reporting and certifying ESG, carbon, and CSR efforts. **The following are some of the many areas in which cost accountants excel:**

- **Knowledge of Finances:** The ability to assess the monetary consequences of sustainability projects and to calculate their costs and benefits requires a thorough knowledge of financial concepts, which cost accountants have in abundance.
- **Competence in Data Management:** Compiling, analysing, and reporting ESG, carbon, and CSR statistics can benefit significantly from a cost accountant's expertise in handling and analysing massive datasets.
- **Benefit-cost analysis:** They might perform in-depth cost-benefit studies to determine how a company's sustainability efforts affect its bottom line.
- **Compatibility with Financial Statements:** Cost accountants may easily incorporate sustainability data into financial reports, giving stakeholders a complete picture of an organization's performance.
- **Interdepartmental Cooperation:** Multi-departmental reporting is required for ESG, carbon, and CSR efforts. The ability to work together across departments is a crucial skill for cost accountants, and it guarantees thorough reporting.
- **Sixthly, Rules and Laws:** They know the significance of conforming to rules and can guarantee that reports follow ESG guidelines, carbon accounting standards, and CSR policies.
- **Metrics That Can Be Numbered:** Environmental and social performance can be defined and measured with the help of cost accountants, allowing for



more objective assessment and comparison.

- **Evaluating What Matters:** By analysing the monetary effect of ESG issues, they can help identify the most material ones, allowing reporting to centre on the most critical matters.
- **Evaluation of Dangers:** To help with risk management, cost accountants can assess the monetary dangers of ESG and CSR issues.
- **Disclosing Financial Information:** They are experts at transforming data into actionable insights for the financial sector, facilitating the dissemination of ESG, carbon, and CSR data.
- **Analysis of Performance against Benchmarks:** Because of their analytical prowess, they can compare their company's results to those of similar businesses in the same field, revealing potential weak spots.
- Cost accountants can establish systems to track the development of sustainability targets and produce reports at regular intervals for internal and external stakeholders.
- **ESG, carbon, and CSR efforts** can all be aligned with business goals with the help of cost accountants by connecting them to the company's entire strategy.
- **Ethics:** They are aware of the moral weight that must be placed on sustainability decisions and may ensure that the company's reporting reflects its dedication to ethical trade.
- Cost accountants contribute to the reporting and certifying ESG, carbon, and CSR efforts with their financial rigor, data management abilities, and holistic viewpoint. Because of their unique skill set, they are an invaluable asset to any company interested in responsible growth and environmental responsibility.

**Another factor is that the typical Cost Accountant client is a factory or manufacturing company. A cost accountant keeps a careful eye on operations, stays in touch with workers and other stakeholders, and is intimately acquainted with their daily routines, living conditions, and actual issues. Cost accountants are not just familiar with the workers in a location but also with the surrounding community. Most manufacturing facilities are located in suburban and peri-urban areas, where CSR funds should be allocated. Hence, cost accountants are the most well-connected to the many parties interested in CSR and ESG. Corporate headquarters is not a suitable location for producing CSR and ESG reports. Stakeholder participation is crucial for creating a high-quality CSR and ESG report. I need to empathize with their regular struggles, etc. Cost accountants are the most qualified candidates for this position compared to other financial accountants, secretaries, and city-based CSR consultants.**

## CHAPTER - 10

# Sustainability standard of Global Reporting Initiative (GRI) / Sustainability Accounting Standards Board (SASB)

### 10.1 Overview of the GRI Sustainability Standards

The Global Reporting Initiative (GRI) Sustainability Standards offer a comprehensive framework for organizations to disclose and document their sustainability performance. The standards above encompass various environmental, social, and governance (ESG) subjects. **The following is a comprehensive summary of the GRI Sustainability Standards.**

- **“GRI 101: Foundation” serves as an introductory module to the Global Reporting Initiative (GRI):** This document presents the fundamental ideas and underlying framework of the GRI Standards while elucidating the organizational structure of the reporting process.

- **“GRI 200 standard”: Economic pertains to the economic aspects of sustainability reporting.** The primary emphasis lies in evaluating financial performance, encompassing the disclosure of economic repercussions, market presence, and indirect economic effects.

- **“GRI 300” Standard: Environmental**

This study encompasses a range of environmental dimensions, such as energy use, emissions, water resources, biodiversity conservation, and material utilization. The classification comprises six distinct subcategories: Materials, Energy, Water, Biodiversity, Emissions, and Effluents and waste.

- **“GRI 400” Standard: focuses on the social aspects.**

This study examines the social ramifications and employment policies encompassing several aspects such as diversity, human rights, labour conditions, occupational health and safety, training, and employee involvement.

- **“GRI 500” standard: focuses on the topic of human rights.**

This study centres on human rights subjects, specifically non-discrimination, freedom of association, child labour, forced labour, and indigenous rights.

- **“GRI 600” Standard: pertains to the societal aspects of sustainability reporting.**

This encompasses the broader societal effects that extend beyond the immediate operational scope of an organization, encompassing aspects such as community involvement, instances of corruption, public policy implications, and anti-competitive conduct.



- **The “GRI 700” standard pertains to product responsibility.**  
This paper examines several aspects of products and services, encompassing concerns such as labelling, consumer well-being and security, marketing strategies, and adherence to established standards.
- **The “GRI 800” standard pertains to the disclosure of management approaches.**  
This paper recommends disclosing an organization's strategy for effectively managing material environmental, social, and governance (ESG) concerns.
- **“GRI 900” standard: explicitly focusing on general disclosures.**  
This section provides an overview of the overarching disclosures that pertain to the sustainability report. It encompasses details regarding the reporting period, the organizational profile, the governance structure, and the engagement of stakeholders.

**The GRI Sustainability Standards** encompass a range of reporting standards, indicators, and recommendations that enable organizations to effectively assess, control, and communicate their **environmental, social, and governance (ESG) performance**. Organizations can select the appropriate standards that align with their specific operational requirements, industry context, and sustainability objectives.

It is imperative to acknowledge that GRI periodically revises its criteria to correspond with the ever-changing demands of sustainability and worldwide advancements. Hence, Cost Accountants and organizations should consult the official GRI website to access the latest standards and implementation information.

## 10.2 Overview of the SASB Sustainability Standards

**The Sustainability Accounting Standards Board (SASB)** offers a comprehensive collection of industry-specific standards prioritizing financially significant sustainability subjects. These guidelines aim to assist organizations across diverse industries in effectively communicate their sustainability performance to investors and stakeholders in a pertinent and meaningful manner.

**The following is a comprehensive summary of the SASB Sustainability Standards.**

- **SASB Standards by Industry:** The Sustainability Accounting Standards Board (SASB) provides industry-specific standards for several sectors, such as Agriculture, Apparel and footwear, Financials, Healthcare, Technology, and communications, among others.
- **SASB Codification Structure:** The SASB Codification Structure is a framework that organizes the Sustainable Accounting Standards Board's (SASB) standards and guidance into a systematic and coherent system. Every standard specific



- to an industry adheres to a codification framework consisting of disclosure subjects, measurements, and technological protocols.
- **Disclosure Topics:** The guidelines delineate distinct disclosure subjects deemed financially significant for every sector. The issues above encompass several environmental, societal, and government themes (ESG).
  - **Metrics and Technical Protocols:** SASB establishes measurements and technical procedures for each disclosure issue, which serve as guidelines for organizations to quantify and publish pertinent data effectively. Metrics are created to ensure comparability among organizations operating within the same industry.
  - **Materiality Focus:** The primary objective of SASB standards is to concentrate on financially significant information and to offer investors a deeper understanding of the potential risks and opportunities that arise from environmental, social, and governance (ESG) aspects and their impact on an organization's financial performance.
  - **Alignment with Financial Reporting:** The SASB standards have been specifically developed to align with an organization's financial reporting practices, thereby augmenting the comparability and use of sustainability data for investors.
  - **Industry Relevance:** The Sustainability Accounting Standards Board (SASB) acknowledges the inherent variability of material challenges among different businesses. Consequently, their standards tackle the distinct sustainability issues and opportunities encountered within various sectors.
  - **Reporting Framework:** The SASB standards offer a comprehensive reporting structure that facilitates organizations' identification, quantification, and disclosure of financially significant sustainability data.
  - **Continuous Improvement:** Continuous improvement refers to enhancing and refining various aspects of an organization or system. It involves systematically identifying and implementing measures to optimize efficiency and effectiveness. The SASB conducts periodic evaluations and revisions of its standards to ensure their continued relevance and alignment with evolving stakeholder expectations and industry advancements.
  - **Investor Orientation:** - The prioritization of materiality and investor requirements by SASB enables organizations to provide ESG information that holds significance for capital markets.

Organizations that embrace the SASB guidelines customize their sustainability reporting to align with the unique characteristics of their business and the financial significance of environmental, social, and governance (ESG) matters. This methodology guarantees that organizations furnish investors with pertinent and comparable information that underscores the potential influence of sustainability

concerns on financial performance. It is imperative to consult the official website of the Sustainability Accounting Standards Board (SASB) to access the latest information regarding the standards and their implementation across diverse industries.

### **10.3 Overview of some essential ISO sustainability standards**

**The International Organisation for Standardisation (ISO)** has established several sustainability and social responsibility standards. These standards offer guidance and structures for organizations to incorporate sustainable practices into their operations and improve their social and environmental performance.

**Presented below is a comprehensive review of some significant ISO sustainability standards:**

- **ISO 14001: Environmental Management Systems (EMS):** This framework offers organizations a structured approach to establishing an efficient environmental management system, effectively identifying and managing ecological consequences, and consistently enhancing environmental performance.
- **ISO 26000: Guidance on Social Responsibility:** This resource guides the incorporation of social responsibility into an organization's operational framework. It encompasses several aspects, such as human rights, labour practices, environmental stewardship, fair operating practices, consumer concerns, and community engagement.
- **ISO 20400: Sustainable Procurement:** This guidance aims to facilitate incorporating sustainability issues into procurement procedures, assisting organizations in making conscientious purchase decisions that yield favourable social and environmental outcomes.
- **ISO 45001: Occupational Health and Safety Management Systems:** The primary objective is prioritizing the well-being and security of employees and others involved in the organization. Although its main focus is on occupational safety, it also corresponds to broader sustainability objectives through supporting the well-being of employees.
- **ISO 50001: Energy Management Systems:** This paper presents a comprehensive framework that enables organizations to effectively implement energy management systems, enhance energy efficiency, and mitigate financial and environmental impacts associated with energy consumption.
- **ISO 20121: Event Sustainability Management Systems:** This study centres on effectively managing sustainability consequences associated with events, encompassing the social, economic, and environmental aspects of event design and implementation.



- **ISO 14064: Greenhouse Gas Accounting and Verification:** The document consists of three sections that offer principles for quantifying, monitoring, and verifying an entity's greenhouse gas emissions and removals.
- **ISO 22301: Business Continuity Management:** This study examines the capacity of organizations to sustain their operations against various interruptions, encompassing those arising from environmental and social variables.
- **ISO 14046: Water Footprint:** This document offers a set of principles and recommendations for evaluating and disclosing the water footprint associated with various entities such as products, processes, and organizations.
- **ISO 20400: Sustainable Procurement:** Standardisation 20400 is a framework focusing on sustainable procurement practices. This resource assists in incorporating sustainability factors into procurement procedures, aiding organizations in making conscientious procurement choices that yield favourable social and environmental outcomes.

ISO standards, among others, offer organizations the means to harmonize their activities with sustainability principles, effectively handle environmental and social consequences, and actively participate in conscientious and ethical corporate conduct. Every standard focuses on distinct elements of sustainability and can be implemented according to an organization's preferences, sectors, and objectives. It is imperative to go to the International Organisation for Standardisation (ISO)'s official website to access the most up-to-date versions and comprehensive information regarding these standards.

#### **10.4 The United States, United Kingdom, and other developed countries adhere to sustainability standards:**

Developed nations, such as the United States and the United Kingdom, commonly adopt global and domestic sustainability standards and frameworks to guide organizations in pursuing sustainability. Although a generally observed standard does not exist, several countries typically adopt many internationally recognized frameworks and projects.

- **The GRI Standards, or the Global Reporting Initiative,** refer to guidelines and principles widely recognized and utilized for sustainability reporting by organizations worldwide. Sustainability reporting is extensively employed on a worldwide scale, encompassing both industrialized nations and other regions. The Global Reporting Initiative (GRI) offers comprehensive rules for reporting environmental, social, and governance (ESG) performance.
- **The SASB Standards, also known as the Sustainability Accounting Standards Board,** refer to a set of guidelines and principles used to assess and report on the sustainability performance of companies. SASB's industry-specific



standards have garnered significant attention, particularly in the United States. These standards prioritize financial material, environmental, social, and governance (ESG) concerns, making them pertinent for investors and stakeholders.

- **The ISO Standards, established by the International Organisation for Standardisation**, are guidelines and specifications that ensure consistency and quality in various industries and sectors. ISO 14001 for environmental management systems and ISO 26000 for social responsibility are frequently observed as integral components of sustainability initiatives.
- **CDP (formerly Carbon Disclosure Project)**: Commonly employed to expose carbon emissions, climate hazards, and mitigation methods. Investors and companies trying to tackle climate-related challenges hold this particular solution in high regard.
- **TCFD (Task Force on Climate-related Financial Disclosures)**: The Task Force on Climate-related Financial Disclosures (TCFD) is an initiative focused on enhancing the transparency and consistency of climate-related financial information organizations provide. This standard offers suggestions for disclosing climate-related financial risks, focusing on harmonizing these disclosures with financial reporting practices to promote greater openness.
- **UN Global Compact**: The UN Global Compact is an initiative established by the United Nations to encourage businesses and organizations to adopt sustainable and socially responsible practices. This initiative promotes adopting sustainable and socially responsible policies and practices among enterprises. It emphasizes the importance of aligning strategy with the Ten Principles, encompassing several areas such as human rights, labour, environment, and anti-corruption.
- **UK Modern Slavery Act**: The UK Modern Slavery Act is a legislative measure enacted in the United Kingdom. Mandates the disclosure of criteria specific enterprises use to mitigate contemporary slavery and human trafficking within their operational frameworks and supply networks.
- **UK Companies Act 2006 (Strategic Report and Directors' Report) Regulations**: The regulations of the UK Companies Act of 2006, including those concerning the Strategic Report and Directors' Report. Including environmental, social, and governance (ESG) information in the strategy reports of significant firms in the United Kingdom is mandated, thereby augmenting levels of transparency and accountability.
- **EU Non-Financial Reporting Directive**: The EU Non-Financial Reporting Directive is a regulatory framework established by the European Union. The European Union mandates that major enterprises within its jurisdiction disclose non-



## **Guidance Note on Carbon Credit Mechanism, ESG Reporting... etc.**

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financial information encompassing environmental, social, and governance (ESG) concerns. This requirement aims to furnish investors and stakeholders with pertinent data.

- **Sustainability Indices:** Sustainability indices are a measurement tool used to assess and evaluate the sustainability performance of companies, industries, or regions. Stock market indices such as the Dow Jones Sustainability Index and FTSE4Good Index incorporate corporations that satisfy specific environmental, social, and governance (ESG) standards, exerting an impact on the sustainability endeavours of these organizations.

The above standards and activities indicate the increasing focus on sustainability, transparency, and accountability within industrialized nations. Organizations frequently opt for the most pertinent standards by considering factors such as their industry, operational practices, and the expectations of their stakeholders. It is crucial to acknowledge that the landscape is constantly changing, and companies in these nations may opt to adhere to multiple standards to showcase their dedication to ethical and environmentally friendly company operations.



## CHAPTER - 11

# Sustainability Standard on India Perspective and SEBI BSR Code

### 11.1 India's Adherence to a Sustainable Practises Standard

In the Indian context, it is common for organizations to adopt a combination of international and domestic sustainability standards and frameworks to direct their sustainability initiatives. **The following are specific sustainability standards that are widely adhered to in India:**

- **GRI Standards (Global Reporting Initiative):** The GRI rules are extensively utilized by Indian firms for sustainability reporting. The recommendations presented below encompass a variety of environmental, social, and governance (ESG) dimensions.
- **National Voluntary Guidelines on Social, Environmental, and Economic Responsibilities of Business (NVGs):** The National Voluntary Guidelines on Social, Environmental, and Economic Responsibilities of Business (NVGs) are a set of guidelines that outline the recommended practices for businesses in terms of their social, environmental, and economic responsibilities. These recommendations, which the Ministry of Corporate Affairs issues under the Government of India, establish a comprehensive framework for implementing responsible business practices and reporting sustainability in the Indian context.
- **CDP (formerly Carbon Disclosure Project):** CDP is an organization that focuses on collecting and disseminating information related to carbon emissions and climate change. Numerous Indian corporations actively engage in CDP's carbon and water disclosure initiatives, hence facilitating the assessment and regulation of their ecological footprints.
- **BSE's Greenex and NSE's Nifty 50 ESG Index:** The stock market indices encompass corporations with robust environmental, social, and governance performance, promoting a heightened emphasis on ESG factors among enterprises.
- **Sustainable Development Goals (SDGs):** The Sustainable Development Goals (SDGs) refer to a set of global objectives established by the United Nations (UN) to address various social, economic, and environmental challenges. Indian organizations strategically link their sustainability programs with the United Nations' 17 Sustainable Development Goals (SDGs) to effectively tackle a range of pressing global concerns, including but not limited to poverty, inequality, and climate change.

- **ISO 14001 and ISO 26000:** ISO 14001 and ISO 26000 are two prominent international standards that pertain to environmental management and social responsibility, respectively. **In India, using ISO standards is prevalent to establish environmental management systems and incorporate social responsibility within company operations.**
- **SEBI Listing Regulations (SEBI LODR Regulations):** The SEBI Listing Regulations, also known as the SEBI LODR Regulations, refer to the regulatory framework established by the Securities and Exchange Board of India (SEBI) for companies listed on Indian stock exchanges. The Securities and Exchange Board of India (SEBI) has implemented a requirement for the top 1,000 listed businesses in India to include reporting on their Environmental, Social, and Governance (ESG) performance in their annual reports.

| Financial Year BRSR Core Applicability to the largest publicly traded companies (based on market capitalization). | Applicability of BRSR Core to top listed entities (by market capitalization) |
|---|--|
| 2023-24   | Top 150 Listed Entities  |
| 2024-25   | Top 250 Listed Entities  |
| 2025-26   | Top 500 Listed Entities  |
| 2026-27   | Top 1000 Listed entities   |

- **Indian Companies Act 2013:** The Indian Companies Act of 2013 is a significant legislation in the Indian corporate sector. According to Section 135 of the Act, specific corporations must allocate a portion of their income towards Corporate Social Responsibility (CSR) endeavours and provide a comprehensive account of their CSR undertakings.
- **India Responsible Business Index (IRBI):** The India Responsible Business Index (IRBI) is a comprehensive assessment tool that evaluates the responsible business practices of companies operating in India. The project above assesses Indian enterprises based on their responsible business practices and sustainability performance, therefore assigning them a ranking.
- **GRIHA (Green Rating for Integrated Habitat Assessment):** GRIHA, also known as Green Rating for Integrated Habitat Assessment, is a rating system that evaluates the environmental performance of buildings and habitats. The Indian green building grading system is designed to foster the development of sustainable and environmentally friendly buildings and habitats inside the country.



**Indian organizations frequently opt for standards that align with their industries, business objectives, and stakeholders' expectations. The realm of sustainability reporting and standards in India is transforming, with an increasing focus on transparency, responsible corporate conduct, and environmental and social issues mitigation.**

## 11.2 New BRSR Core for ESG Disclosures from SEBI

**On July 12, 2023, SEBI issued Circular No. SEBI/HO/CFD-SEC-2** To ensure that companies are aware of how they are integrating their value chain into the sustainability and ESG policies of their organization, SEBI has introduced the BRSR Core Framework for assurance and ESG disclosures for the top 1,000 companies over the next three fiscal years.

**Applicability:** Listed entities must implement reasonable assurance of the BRSR Core by the glide path outlined in the table below.

| <b>Financial Year BRSR Core Applicability to the largest publicly traded companies (based on market capitalization).</b> | <b>Applicability of BRSR Core to top listed entities (by market capitalization)</b> |
|--|---|
| 2023-24  | Top 150 Listed Entities   |
| 2024-25  | Top 250 Listed Entities   |
| 2025-26  | Top 500 Listed Entities   |
| 2026-27  | Top 1000 Listed entities  |

## CHAPTER - 12

# Cost Audit in India via a Social, Environmental, and Governance (ESG) Lens

### 12.1 What role may an ESG lens play in an Indian cost audit?

When examining cost audit in India via a social, environmental, and governance (ESG) lens, the process entails evaluating an entity's cost accounting records and methodologies to consider its effects on society, the environment, and its governance procedures. This technique expands upon the conventional scope of cost audit by integrating sustainability and responsible business practices. **This Guideline note discusses integrating an environmental, social, and governance (ESG) perspective into cost audits in India.**

- **Social Perspective:** The social perspective is a theoretical framework that examines human behaviour and societal dynamics through social interactions, cultural norms, and structural factors. It seeks to understand how individuals assess the organization's dedication to equitable labour practices, employee well-being, and community involvement. Evaluate the execution of ethical and diversity policies to guarantee the fair treatment of personnel and foster a constructive organizational environment.
- **Examine the impact of the organization's corporate social responsibility (CSR) initiatives on social development.**
- **Environmental Perspective:** The environmental perspective is a viewpoint that focuses on the interactions between human activities and the natural environment. It considers the impact of human actions on ecosystems, biodiversity, and the overall.
- This Guideline aims to analyse the organization's resource use, waste output, and carbon emissions.
- This guideline aims to assess the effectiveness of resource utilization and find potential avenues for optimizing resource allocation and minimizing waste.
- **Evaluate the organization's endeavours to mitigate its environmental impact by implementing energy-efficient strategies, embracing renewable energy sources, and adopting sustainable practices in supply chain management.**
- **Governance Perspective:** The governance perspective is a theoretical framework that studies and analyses how power is exercised, and decisions are made within a given system or organization. **It examines the structures.**
- Evaluate the governance framework, composition of the board, and mechanisms for decision-making inside the organization.



- **Evaluate the organization's compliance with corporate governance standards and ethical business practices as a third-party CSR Audit report verifier or through a separate CSR Audit.**
- **Assess the organization's transparency, accountability, and risk management practices about environmental, social, and governance (ESG) concerns.**
- **Integration of ESG Factors:** Incorporate environmental, social, and governance (ESG) issues into the cost analysis process to gain insights into the financial consequences associated with adopting sustainable practices.
- **Evaluate the possible financial savings and advantages of implementing ecologically sustainable and socially responsible practices.**
- **Reporting and Disclosure:** Assess the ESG reporting practices of the organization, encompassing the disclosure of ESG-related risks, opportunities, and performance indicators.
- **It is imperative to ensure that the ESG reporting of the organization is by relevant frameworks and standards.**
- **Stakeholder Engagement:** Stakeholder engagement refers to actively involving individuals or groups with a vested interest or is affected by a particular project, decision, or organization.

**Evaluate the extent to which the organization has actively involved stakeholders concerning environmental, social, and governance (ESG) concerns, including employees, local communities, and investors.**

- **Compliance and Risk Management:** Compliance and risk management are essential in several industries and sectors. It involves implementing strategies and measures to ensure adherence to legal and regulatory requirements and identifying and mitigating potential risks that may impact an organization.
- Assess the organization's adherence to legislation and requirements about environmental, social, and governance (ESG) factors.

**Evaluate the organization's ability to identify and effectively manage environmental, social, and governance (ESG) risks that have the potential to influence its financial performance.**

- **Continuous Improvement:** Continuous improvement refers to enhancing and refining various aspects of an organization or system.
- **Advocate for the organization's commitment to ongoing enhancement and innovation of its Environmental, Social, and Governance (ESG) practices.**

**Training and Awareness:**

- *Deliver comprehensive training sessions to Cost Accountants and cost auditors from The Institute of Cost Accountants of India or collaboration with various management Institute like the Indian Institute of Management, i.e., IIM Calcutta, IIM Ahmedabad, etc., or Collaboration with AICPA (USA) or CIMA(UK) like the organization to access their CPD program or various updated materials for training to Cost Accountants or Cost Auditor to enhance their comprehension of the Environmental, Social, and Governance (ESG) perspective, so enabling them to evaluate its ramifications on cost management proficiently.*

Integrating an Environmental, Social, and Governance (ESG) perspective into cost audit practices is the prevailing worldwide movement towards responsible corporate behaviour and promoting sustainable development.

***The growing recognition of the significance of environmental, social, and governance (ESG) elements in generating long-term value has led organizations to acknowledge the potential of cost audits in fostering transparency, accountability, and sustainable practices inside Indian firms.***



## CHAPTER - 13

# Prospects for the Future

### 13.1 The potential regulatory modifications and their ramifications for enterprises in India.

The potential implications of sustainability legislation in India on firms are substantial and could have far-reaching consequences for the future. With the increasing global significance of sustainability and environmental, social, and governance (ESG) issues, it is anticipated that regulators in India will implement regulatory revisions to conform to international trends and tackle domestic challenges.

The following are specific prospective regulation revisions and their potential implications for firms operating in India:

#### **The Implementation of Strengthened Environmental, Social, and Governance Reporting Obligations:**

- **Implications:** Organisations must furnish more comprehensive and transparent disclosures about environmental, social, and governance (ESG) factors, showcasing their dedication to sustainable business operations. This has the potential to attract investments from responsible parties and benefit the level of trust held by stakeholders.
- **The implementation of mandatory carbon disclosure requirements.**
- **Implications:** Corporations must reveal their carbon emissions and methods for reducing them. This can incentivize corporations to embrace energy-efficient methodologies and allocate resources toward developing and using renewable energy sources.

#### **Enhanced Corporate Social Responsibility (CSR) Responsibilities:**

- **Implications:** *Organisations could encounter more stringent requirements regarding Corporate Social Responsibility (CSR), resulting in elevated expenditures on social and environmental endeavours.*
- **Mandatory Carbon Disclosure:** Climate change adaptation policies refer to the strategies and measures implemented by governments and organizations to mitigate the adverse effects of climate change and enhance resilience to its impacts. These policies aim to address the challenges of climate change, such as rising temperatures and sea-level rise.
- **Implications:** Companies working in industries susceptible to climate change, such as agriculture and water-intensive sectors, may be required to modify their operations to adhere to laws aimed at mitigating and adapting to climate change. ***The International Financial Reporting Standards (IFRS) will implement the new sustainability standards, S1 and S2, globally starting January 24th. Please consult Chapter 14 of this Guidance Note.***



### Green Finance and Tax Incentives:

- The potential consequences of implementing regulatory incentives for green finance and providing tax breaks for sustainable practices include that **firms may be motivated to allocate resources towards investments in renewable energy, energy efficiency, and sustainable technologies.**
- **Supply Chain Sustainability:** Supply chain sustainability refers to integrating environmentally and socially responsible practices throughout the supply chain process.
- The potential consequences of this situation include that businesses may be obligated to prioritize sustainability within their supply chains, **encouraging the adoption of responsible sourcing methods and mitigating the risks associated with suppliers that do not adhere to sustainable practices.**

### Environmental Clearances and Compliance:

- Implementing more rigorous environmental clearance procedures and regulatory compliance measures may result in heightened scrutiny of industries with significant environmental footprints, thereby compelling them to embrace cleaner technology.
- **Circular Economy Initiatives:** Circular Economy Initiatives refer to strategies and practices to promote sustainable resource management and reduce waste generation. **These initiatives prioritize a closed-loop system, where resources are continuously reused and recycled.**
- **The adoption of a circular economy will incentivize enterprises to reduce waste and enhance resource efficiency.**

### Mandatory ESG Risk Assessment:

- **Implications:** Organisations must evaluate and communicate any environmental, social, and governance (ESG) risks associated with their activities, promoting a proactive approach to risk mitigation.

### Stakeholder Engagement and Reporting:

- **Implications:** Regulatory bodies may prioritize stakeholder involvement and participative decision-making processes, fostering greater corporate operations transparency and inclusivity.

### Green Labelling and Product Certification:

- **Implications:** Companies who manufacture environmentally friendly items may experience advantages due to consumer preferences for products that are certified as ecologically sustainable.



**Organizations that actively adjust their operations in response to these prospective legislative changes can obtain a competitive edge, strengthen their brand reputation, and gain access to ethical financial resources. Autonomous vehicles possess the capacity to foster innovation, mitigate risks, and make valuable contributions towards the attainment of sustainable development goals. Organizations that perceive sustainability as an intrinsic component of their corporate strategy will be more adequately equipped to adapt to legislative modifications and strategically positioned to embrace a future characterized by enhanced sustainability and resilience.**

### **13.2 The evolution of the job of cost accountants in the journey towards sustainability.**

*The function of cost accountants has undergone substantial changes in the pursuit of sustainability, indicating the increasing significance of environmental, social, and governance (ESG) factors in corporate activities. The work of cost accountants has expanded beyond their traditional concentration on financial analysis and cost management, as they now play a pivotal role in integrating sustainability concepts throughout different organizational functions.*

**The evolution of their position can be delineated as follows:**

- **Traditional Cost Management:**

Cost accountants initially focused on managing costs and financial efficiency within organizations.

- **Integration of ESG Factors:**

With the rise of sustainability awareness, cost accountants began incorporating ESG factors into cost analysis. They started assessing the financial implications of environmental initiatives, social responsibility, and governance practices.

- **ESG Reporting and Disclosure:**

As transparency became vital, cost accountants started collaborating with sustainability professionals to compile ESG data and report on non-financial performance.

- **ESG Risk Management:**

Cost accountants began assessing the financial risks associated with ESG issues, helping organizations manage regulatory, reputational, and operational risks.

- **Sustainability Metrics and KPIs:**

Cost accountants developed ESG-related metrics and key performance indicators (KPIs) that enable organizations to measure and monitor their sustainability performance alongside financial performance.



- **Life Cycle Costing:**

Adopting life cycle costing allowed cost accountants to consider the environmental impact of products and services throughout their life cycle, from raw material extraction to disposal.

- **Environmental and Energy Auditing:**

Cost accountants ventured into environmental and energy auditing, identifying cost-effective ways to reduce resource consumption and emissions.

**Carbon Accounting and Foot printing:**

- With increased focus on climate change, cost accountants started calculating carbon footprints and analysing the financial impact of carbon emissions reduction strategies.

- **ESG Integration in Investment Decisions:**

Cost accountants played a role in assessing the financial implications of ESG factors for investment decisions, attracting responsible investors.

- **Sustainable Supply Chain Management:**

Cost accountants collaborated with supply chain professionals to evaluate the financial impact of sustainable sourcing and supplier engagement.

- **Assurance and Verification:**

Cost accountants must begin providing assurance and verification services for sustainability reports, enhancing credibility and transparency.

- **Strategy and Innovation:**

Cost accountants contributed to developing sustainability strategies, assessing the costs and benefits of sustainable initiatives, and driving innovation in resource efficiency.

- **ESG Advocacy and Governance:**

Cost accountants participated in governance structures, ensuring that ESG considerations were integrated into decision-making processes.

***The evolution of cost accountants' roles reflects the integration of sustainability into business practices, indicating their critical role in driving responsible and financially viable strategies. As sustainability becomes a strategic imperative, cost accountants continue to expand their skill set to navigate complex ESG challenges and contribute to a more sustainable and resilient future.***



## CHAPTER - 14

# IFRS NEW Standard (Effective from 1st January 2024): IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information and IFRS S2 Climate-related Disclosures.

### 14.1 IFRS Sustainability Disclosure Standards have been released.

#### The Standards

- The International Sustainability Standards Board (ISSB) issued its first two sustainability standards **on Friday, 26 June 2023**.
- The objective is to issue standards that provide a comprehensive global baseline for consistent, comparable sustainability reporting to meet investor needs.
- The ISSB Sustainability Standards, notably IFRS S1, aim to capture business practices' environmental and social dimensions. Social considerations include, but are not limited to, diversity and inclusion, modern slavery, worker safety, occupational health and safety issues, and product safety.
- The standards adopt a four-pillar core content framework, which requires an entity to disclose its approach to sustainability-related considerations through its governance, strategy, risk management, and metrics and targets.
- IFRS S1 deals with general requirements for disclosing material information about significant sustainability-related risks and opportunities across an entity's value chain.
- IFRS S2 deals with climate-related disclosures and builds on the four content areas.
- IFRS S2 also sets out disclosure requirements about climate-related risks and opportunities, transition plans, and scenario analysis that will facilitate users assessing the impact of these risks and options on the entity's: – financial position, performance, and cash flows and, – strategy and business model.
- IFRS S1 is designed to be applied alongside future industry or topic-specific standards, with IFRS S2, which deals with climate, being the first such topic.

### 14.2 Key Points of IFRS S1 and S2 sustainability standard

- **General Requirements for Disclosure of Sustainability-related Financial Information (IFRS S1), the core framework for disclosing material information about sustainability-related risks and opportunities across an entity's value chain.**
- **Climate-related Disclosures (IFRS S2), the first thematic standard issued, sets out requirements for entities to disclose climate-related risks and opportunities.**

### 14.3 Important Question and Answer for IFRS S1 and S2 sustainability standard

#### What is the matter at hand?

- The primary objective of the ISSB™ is to create and distribute a complete set of sustainability reporting standards known as the IFRS Sustainability Disclosure Standards. These standards aim to ensure that sustainability reporting is conducted in a consistent, comparable, and high-quality manner, with the specific purpose of meeting the information requirements of investors. The initial issuance **of IFRS S1 and IFRS S2 marks the introduction of these standards.**
- The IFRS Sustainability Disclosure Standards are organized based on the four-pillar methodology proposed by the Task Force on **Climate-Related Financial Disclosures**. These pillars include **governance, strategy, risk management, metrics, and targets.**
- **The International Financial Reporting Standards (IFRS) Standard 1 (S1)** mandates that organizations provide relevant information regarding sustainability-related risks and opportunities. This information is intended to assist primary users of general-purpose financial reporting in making informed decisions regarding allocating resources to the business. To achieve this purpose, entities must comprehensively comprehend the resources upon which they depend and the interconnections within their value chain. The interconnectedness of an entity's relationships and interactions with stakeholders, society, the economy, and the natural environment along its value chain is crucial to its capacity to generate cash flows in the short, medium, or long term, among other outcomes.
- The cash flows, access to finance, and cost of capital for a company can be influenced by sustainability-related risks and opportunities in the short, medium, or long term, both in terms of current and anticipated effects.
- **International Financial Reporting Standard (IFRS) S1 offers guidelines on identifying risks and opportunities connected to sustainability and the appropriate disclosures to be made regarding these sustainability-related risks and opportunities.** To accomplish this goal, *International Financial Reporting Standards (IFRS) S1 mandates that businesses adhere to a two-step procedure to ascertain and disclose all significant sustainability-related risks and opportunities that affect the entity's prospects.*
- **The initial step involves identifying risks and opportunities associated with sustainability that can impact an organization's future prospects in the short, medium, and long term.**
- **The second part of the process involves determining the appropriate disclosures to be provided regarding the sustainability-related risks and opportunities identified in the first step.**



## The International Financial Reporting Standards (IFRS) Standard 1 (S2)

- **IFRS S2 is a standard with a thematic focus that expands upon the provisions of IFRS S1, specifically targeting disclosures connected to climate considerations. The International Financial Reporting Standard (IFRS) S2 necessitates that an organization must identify and disclose climate-related risks and opportunities that have the potential to impact the organization's prospects in the short, medium, and long term.** To accomplish this goal, an organization must consult and consider the relevance of disclosure themes specific to the industry, as outlined in the Industry-Based Guidance for implementing International Financial Reporting Standards (IFRS) S2.
- **Moreover, according to IFRS S2, entities are obligated to consider various industry-specific metrics as well as seven metrics that are applicable across industries when disclosing both qualitative and quantitative aspects of how the entity utilizes metrics and targets to assess, oversee, and handle significant climate-related risks and opportunities.** The cross-industry metrics encompass several elements, such as the reporting **of greenhouse gas (GHG) emissions, the identification of transition risks and physical risks associated with climate change, the recognition of climate-related opportunities, the allocation of capital, the implementation of internal carbon pricing mechanisms, and the payment practices inside organizations.**
- **For instance, in the context of GHG emissions disclosures, IFRS S2 mandates that an organization must assess and publish its Scope 1, Scope 2, and Scope 3 GHG emissions in compliance with the GHG Protocol Corporate Standard, with specific allowances for transitional periods.**

At what point in time does it become applicable?

- **The International Financial Reporting Standards (IFRS) S1 and IFRS S2 will be applicable for annual reporting periods commencing on or after 1 January 2024, allowing for the possibility of early adoption. Local jurisdictions' approval of the standards is a determining factor in this matter.**
- **Several transition reliefs are available when the standards are initially implemented. These encompass the option to exclusively disclose climate-related risks and opportunities by IFRS S2 during the initial year of implementation, in addition to complying with the pertinent provisions in IFRS S1 that pertain to the divulgence of climate-related information.**

### 14.4 General requirements (IFRS S1)

The primary aim of the General Requirements Standard is to mandate the disclosure of information about an entity's sustainability-related risks and opportunities. This disclosure is intended to benefit the primary users of general-purpose financial reporting (GPFR) as they assess the allocation of resources to the entity. The reporting entity is obligated to disclose significant information regarding the risks and opportunities related to sustainability that it is exposed to.

**The General Requirements Standard incorporates a structure consisting of four fundamental content pillars. These pillars necessitate that an institution discloses information about governance, strategy, risk management, measurements, and targets.**

| Content Foundation  | Tells about  |
|---------------------|--|
| Governance          | The organization's governance processes, controls, and procedures are used to monitor and handle risks and opportunities linked to sustainability and climate change.                |
| Strategy            | The plan for dealing with sustainability- and climate-related risks and opportunities that could affect the entity's business model and strategy in the short, medium, and long run. |
| Risk Management     | How the entity finds, evaluates, and handles risks connected to sustainability and climate change  |
| Metrics and targets | The entity uses information to measure, manage, and track its performance about risks and opportunities linked to sustainability and climate change.                                 |

The picture below shows how the core content of the four pillars and the framework of disclosures in the Climate Standard and future topics fit together.

**Framework for sustainability - related disclosures**



Here are some of the other general needs: It should be mentioned that many of these rules will be applied differently depending on where you live.

**For this reason, you should read these rules along with what local standard-setting bodies say.**



**Question: Who has to give a report?**

- Answer: It was suggested that these reporting requirements apply to big companies and financial institutions and that more organizations will be added to this list over the next few years.

IFRS S2 is talked about in more detail later in this briefing paper.

**Question: What do “risks and opportunities related to sustainability” mean?**

- Answer: Entities have to share all necessary information about “sustainability-related risks and opportunities,” which come from how

Dependent they are on resources and how they affect those resources. They have to explain where in their “value chain” the most critical sustainability-related risks and possibilities are. “Value chain” is a broad term that refers to the whole span of a product or service and the business that makes it.

**Here are some examples:**

- the entity's and its suppliers' hiring practices, the amount of waste caused by the way its goods are packaged, or events that could disrupt its supply chain;
- the things it owns, like factories that use scarce resources to make things;
- the investments it controls, including its investments in partners and joint ventures, such as financing a greenhouse gas-emitting activity through a joint venture; and

- **When do we say something is material?**

- Answer: Sustainability-related financial information is essential if omitting, misstating, or hiding it could be expected to change the choices of the prominent NGOs and others who use this sustainability report.

There are emotional and quantitative things to consider when deciding what is essential. Some of the information that IFRS Sustainability Disclosure Standards require is likely necessary because of an aesthetic factor.

For example, all entities exposed to a significant risk linked to climate would likely think that information about how that risk is managed is essential.

IFRS Practise Statement 2: Making Materiality Judgements has more information about this topic.

**Question: To whom should this be revealed?**

- Answer: It is understood that the position of such disclosures may vary according to regulation and other jurisdictional requirements; however, the standard mandates disclosures needed by IFRS Sustainability Disclosure Standards as part of its general purpose financial reporting.

Disclosures may be included in the MD&A section of the annual report, or a separate sustainability report mentioned in the annual report, as is the practice of many

businesses currently making voluntary disclosures.

**Question: How can one effectively manage and address the challenges of estimating uncertainty?**

- Answer: The guideline recognizes the importance of using reasonable estimations in formulating sustainability-related disclosures and defining indicators. Furthermore, it is acknowledged that the aforementioned does not diminish the value of the information as long as the estimates are accurately depicted and elucidated.

Despite a significant degree of measurement uncertainty, it is essential to note that such an estimate might still yield valuable insights and information. An organization must identify metrics that exhibit substantial uncertainty in estimation. Furthermore, the entity should disclose the origins and characteristics of such estimation uncertainties and the variables that contribute to the level of uncertainty.

**Question: Is it necessary to provide a statement of compliance?**

- Answer: An organization that adheres to the pertinent criteria of IFRS Sustainability Disclosure Standards in its financial reports about sustainability would be obligated to incorporate an unequivocal declaration of conformity.

**Question: What assurances, if any, are necessary?**

- Answer: Considering the need for reliable and comprehensive data, it is essential to highlight the significance of audit and assurance in validating the information organizations present.

Efforts are being made to establish a comprehensive global standard for sustainability-related disclosures. The International Accounting and Assurance Standards Board is actively developing ISSA 5000, intended to serve as the universal foundation for obtaining assurance on sustainability-related disclosures.

We are also aware of the Treasury's proposition to gradually implement assurance requirements to mitigate the resource challenges that assurance providers would encounter.

**Question: What is the correlation between the General Requirements Standard and the Climate and any forthcoming standards?**

- Answer: The General Requirements and Climate Standards have been formulated to be jointly implemented with forthcoming industry or subject-specific standards.

The adopted standards adhere to a typical structure consisting of four pillars: governance, strategy, risk management, and measurements and targets. These pillars necessitate entities to disclose relevant information about each area.



## CHAPTER - 15

# The Double Materiality Concept in Sustainability Reporting

### 15.1 Introduction

The practice of sustainability reporting has seen substantial development throughout time, progressing from a simple disclosure of environmental and social effects to a crucial element of corporate openness and responsibility. The notion of “double materiality” has become increasingly prominent in the realm of sustainability reporting in recent years. This concept signifies a departure from the conventional emphasis on financial materiality towards a more comprehensive approach that covers both financial and non-financial factors. The aforementioned concept possesses the capacity to fundamentally transform the manner in which organisations evaluate, disclose, and oversee their sustainability effects and vulnerabilities.

The discipline of accounting and auditing norms and conventions, which encompasses the reporting frameworks utilised by both non-financial and financial organisations, is frequently regarded as a specialised and rather esoteric domain primarily accessible to experts. Indeed, the aforementioned norms and conventions serve as indicators of more comprehensive perspectives on a global scale and mirror the societal values that hold significance within a certain epoch. Hence, it is unsurprising that these entities have consistently undergone transformations, exerting influence on and mirroring the wider socioeconomic milieu (Colasse and Déjean, 2022; Ferré and Zarka, 2020). Given the current imperative to undertake a profound overhaul of our socioeconomic systems with the aim of effectively tackling various but interrelated ecological issues such as climate change and biodiversity loss, there is a growing chorus of voices advocating for a revaluation of accounting and auditing standards and practices. At the macroeconomic level, there are several initiatives underway to reassess national accounts with the aim of incorporating the significance of nature as a facilitator of economic activity (Dasgupta, 2021). Similarly, at the microeconomic level, there is an increasing demand for financial and non-financial corporations to systematically incorporate environmental, social, and governance (ESG) factors into their decision-making processes and reporting frameworks.

*Within this context, a significant discourse has emerged about the notion of double materiality, aiming to reassess and broaden the current accounting and auditing standards of materiality. The latter proposition posits that the accounting and reporting framework of an organisation, such as a corporation, should encompass all pertinent information that has the potential to impact the decisions made by the users of the entity's financial statements, including its investors (IFRS, 2018). When considering matters such as climate change, it is imperative for both non-*

financial and financial organisations to reveal their susceptibility to climate-related occurrences, encompassing physical and transition risks. This also includes the consideration of liability risks, which are occasionally examined independently. *Expanding upon this notion, advocates of the concept of double materiality contend that materiality extends beyond the effects of detrimental environmental occurrences on the organisation, encompassing the effects of the organisation on the environment as well (European Commission, 2019a, 2019b).* Therefore, it is imperative for both financial and non-financial firms to disclose these implications. Furthermore, it is possible for monetary and financial authorities to connect their policies and practices with this idea. This can be achieved by taking into account the environmental consequences of their own operations and/or the organisations under their supervision.

*The concept of double materiality is currently a topic of debate among various countries, including those in opposition and support of it, such as the European Union. Additionally, there are differing opinions between investors and regulators. Despite this ongoing discussion, there is still uncertainty regarding the specific extent and implementation of double materiality. Furthermore, the potential implications of double materiality for monetary and prudential policies, as well as broader financial policies, may be subject to varying interpretations. According to Täger (2021), the concept of double materiality requires further development and implementation.*

*To provide further clarity about the ongoing debates, we have identified three primary techniques that might be employed to effectively operationalize the concept of double materiality. These approaches offer a diverse variety of policy proposals. **The initial method takes into account the concept of twofold materiality within the context of a corporation, particularly financial institutions, and primarily focuses on addressing unique risks.***

***The second Perspective evaluates the concept of twofold materiality within the context of the financial system and emphasises the importance of addressing systematic or potentially systemic financial risks.***

***The third approach uses the concept as a starting point for a profound reformation of the mechanisms through which the financial system operates, with the aim of actively facilitating the ecological transition.***

While maintaining a neutral stance, it is contended that each method possesses distinct implications for monetary and financial policies and presents unique obstacles, as extensively described in this Guideline for Cost Accountants and other stakeholders.

## 15.2 The Evolution of Materiality in Accounting: A Shift towards Double Materiality What is the concept of financial materiality?

Prior to discussing double materiality, it is crucial to introduce the accounting and

reporting concept, commonly referred to as materiality, upon which it is based. **The definition of the International Accounting Standards Board (IASB), which has been adopted by several entities, including the European Commission (2019a), is as follows:**

***According to the International Financial Reporting Standards (IFRS) of 2018, information is considered substantial when its omission, misstatement, or obscuration might reasonably be anticipated to impact the choices made by the key users of general purpose financial statements based on those statements.***

***In a similar vein, the United States Securities and Exchange Commission (SEC) asserts that the concept of materiality pertains to the importance of an item to individuals who use the financial statements of a registrant. According to the United States Securities and Exchange Commission (SEC) in 1999, a matter is deemed 'material' if there exists a significant probability that an average individual would see it as significant.***

The utilisation of the notion of materiality has experienced a growing trend in its application to financial risks associated with the environment, particularly in the context of climate-related financial hazards. **The objective of the Task Force on Climate-related Financial Disclosures (TCFD, 2017) was to enhance and expand the disclosure of financially significant climate-related information by both non-financial and financial firms.**

***In accordance with these guidelines, the assessment of the financial significance of climate and other environmental risks is typically categorised within a spectrum that encompasses both widely recognised physical risks, such as the escalation of extreme climate-related incidents, and transition risks, such as the implementation of new climate-related regulations and taxes (e.g., NGFS, 2019; 2021a; Bolton et al., 2020a). Liability risks, which are occasionally examined independently, are also encompassed within this classification.***

### **15.3 The concept of “double materiality” is on the rise.**

The idea of “double materiality” goes beyond the limited scope of “financial materiality” by recognising that financial and non-financial factors are interdependent when judging an entity’s overall performance and value creation. The statement recognises that sustainability concerns, encompassing environmental and social ramifications, can possess financial significance, hence influencing an organisation’s enduring financial sustainability.

***Double materiality is a theoretical framework that suggests organisations should take into account two aspects of materiality.***

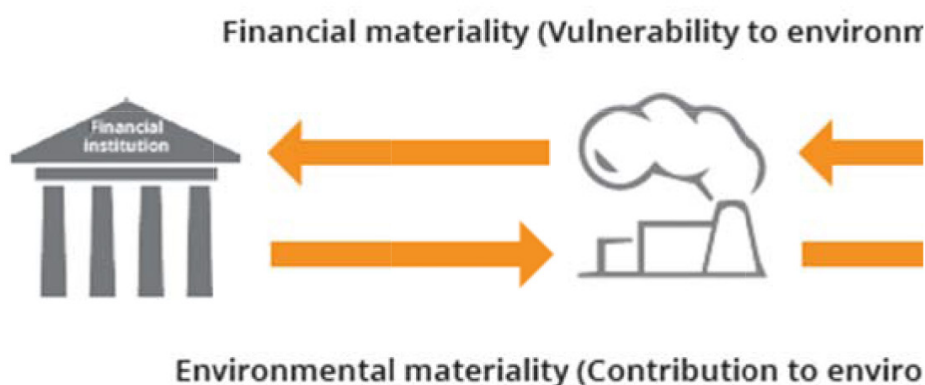
***Financial materiality*** refers to a factor that is firmly grounded in conventional financial reporting. It centres on assessing the financial consequences of sustainability-related risks and opportunities on a company’s overall financial performance. The process entails evaluating the financial significance of particular

sustainability concerns for the organisation.

**The component of societal materiality** encompasses the examination of the wider societal consequences resulting from the operations, goods, and services of an organisation. The process entails evaluating the extent to which the actions and decisions made by the organisation have a significant impact on society as a whole, extending beyond their mere financial implications.

The concept of double materiality extends the notion of materiality beyond solely evaluating the climate-related effects on a firm. It recognises that the impacts of a corporation on the climate, as well as other dimensions of sustainability, can also be material (Täger, 2021). To clarify, and as illustrated in Figure 1 presented subsequently, the concept of double materiality aims to concurrently evaluate the susceptibility of non-financial corporations and financial institutions to environmental risks (as previously defined as financial materiality) and the extent to which these entities contribute to said risks (referred to as environmental materiality).

**Figure 1. Double materiality**



*Source: Adapted from Oman and Svartzman (2021).*

The concept of double materiality extends the aforementioned notion by considering not only the materiality of climate-related impacts on a company but also the materiality of a company's impacts on the climate, as well as other dimensions of sustainability, often encompassed within the environmental, social, and governance (ESG) framework.

The concept of materiality is already included in the European Union's recently implemented sustainable finance disclosure regulation for both financial institutions and corporations. Furthermore, Mark Carney, who previously served as the Chair of the Financial Stability Board (FSB), currently holds the position of UN Special



Envoy for Climate Action and Finance. In this capacity, he is advocating for the implementation of obligatory climate disclosure on a global scale in anticipation of the COP26 climate summit.

***This initiative aims to emphasise the significance of the notion of double materiality as a matter of utmost importance at the international level.***

The concepts of 'outside-in' materiality and 'inside-out' materiality have frequently gaining momentum in sustainability reporting.

The notion of double materiality, despite lacking universal acceptance across jurisdictions, has experienced increasing recognition in recent years. The European Commission's rules on the reporting of climate-related information adopt a dual materiality perspective. These guidelines necessitate that corporations disclose information on both financial materiality and environmental and social materiality pertaining to climate change (European Commission, 2019b). Nevertheless, there is still a lack of clarity regarding the methods by which double materiality should be implemented.

#### 15.4 Delving deeper into the significance

Although there is general consensus on the fundamental idea of two fold materiality, there remains ongoing scholarly discourse regarding its precise interpretation.

Indeed, the potential effects of a company or portfolio on the climate or broader environment can be significant. However, it remains a challenge to precisely determine what constitutes a meaningful influence.

***The response to this inquiry primarily hinges on an individual's perspective on the underlying rationale for considering information pertaining to environmental impacts relevant.***

***The inclusion of environmental impacts in financial considerations can lead to potential financial risks, such as legal liabilities or damage to a company's reputation. This perspective, known as a weak conception of double materiality, recognises the connection between environmental factors and financial outcomes.***

***Additionally, a strong conception of double materiality suggests that information may be considered material by a "reasonable person" for reasons beyond direct financial consequences.***

When considering the latter view, there are indeed numerous arguments to support this assertion.

For example, an investor may desire to adhere to a particular investment policy that includes provisions pertaining to environmental consequences. Investors possessing extended time horizons or those classified as universal owners may

opt to derive their investment choices from the concept of prudence, with the intention of abstaining from actions that could potentially disrupt the stability of the climate system.

Such disruptions, if realised, would subsequently lead to the destabilisation of the financial system. The inquiry into the concept of twofold materiality ultimately revolves around the identification of the “reasonable person” and their respective interests, which consequently determine the criteria for determining what is considered material, or significant, to them.

### 15.5 To whom is the disclosure intended?

In recent decades, there has been a predominant emphasis on financial disclosure norms that prioritise the perceived information requirements of a hypothetical ideal investor while neglecting the potential and existing information demands of other stakeholders. The emergence of two-fold materiality offers a potential avenue for rectifying this inherent design limitation. Financial disclosures have the potential to regain their usefulness for an increasing number of investors who aim to link their investment strategies with climate change or broader sustainability objectives. This may be driven by particular mission statements or the recognition that there is no financial advantage in a world devoid of environmental viability.

***It is also crucial to address the informational requirements of many stakeholders in financial statements, including but not limited to employees, labour unions, local communities, and authorities. These essential stakeholders are all actively involved in making substantial expenditures in organisations, either in terms of time or infrastructure outlay. As a result, they are considered relevant user groups.***

***The failure of market governance is evident when investors and key stakeholders are required to sift through lengthy and non-standardised sustainability reports while being presented with a fictional investor persona that is accompanied by high-quality, audited information.***

### 15.6 Three different ways to look at double materiality

- There are three distinct approaches that might be employed to address the concept of double materiality.
- **Inside-Out Approach:** The inside-out approach is characterised by an initial examination of an organisation's financial materiality, followed by a subsequent evaluation of the societal implications arising from its activities. This study evaluates the potential financial hazards or opportunities that can arise from sustainability challenges, as well as the reciprocal impact of an organisation's financial performance on society.
- **Outside-In Approach:** The outside-in strategy, in contrast, initiates by assessing the societal materiality of an organisation's actions and afterwards investigating the manner in which these societal concerns can attain financial



significance. The formulation of an organisation's sustainability plan takes into account stakeholder perspectives and societal expectations.

- **Integrated Approach:** The integrated method aims to effectively integrate financial and societal materiality factors into an organisation's reporting and decision-making procedures in a cohesive manner. Recognition is given to the fact that sustainability issues possess a range of complex effects, and the objective is to establish a comprehensive structure for evaluating and documenting these effects.

### **15.7 The advantages of using the concept of double-materiality**

The implementation of the concept of double materiality in the context of sustainability reporting has been found to contribute to the improvement of stakeholder involvement (Puroila and Mäkelä, 2019).

In order to obtain a comprehensive understanding of materially sustainable topics in complex corporate settings, it is necessary to engage a broader range of stakeholders directly. This is because different stakeholders hold varying and occasionally conflicting perspectives on what is considered material. This viewpoint is supported by scholars such as Brown (2009), Brown and Dillard (2013), Brown and Tregidga (2017), and Puroila and Mäkelä (2019).

The implementation of a double-materiality analysis necessitates an increased level of stakeholder engagement, which in turn fosters a variety of reciprocal accountability relationships among organisations, their stakeholders, and the broader society.

This enhanced engagement facilitates meaningful discussions and evaluations pertaining to sustainable development (Cooper and Morgan, 2013; Brown and Dillard, 2015; Puroila and Mäkelä, 2019).

According to Carpenter et al. (1994) and Lai et al. (2017), materiality is primarily a socio-economic and political concept rather than a technical one. According to Brown and Dillard (2014) and Puroila and Mäkelä (2019), it affects how society as a whole perceives sustainable development through corporate communication.

Organisations engage in an ongoing process of defining, managing, and communicating their identities, activities, and impacts in relation to sustainability through the use of double-materiality analysis. This process contributes to the gradual shaping and reshaping of the conception of sustainable development (Puroila and Mäkelä, 2019; Tregidga and Milne, 2006).

According to Oh and Chang (2011), the initial expenses associated with investing in sustainability may be significant, but such investments might yield long-term advantages for businesses. The use of materiality analysis can contribute to the process of making investment decisions by identifying significant stakeholders, sustainability concerns, and pertinent risks and opportunities.

According to Khan et al. (2016), empirical evidence suggests that allocating resources towards material sustainability concerns can potentially improve a firm's financial performance. Conversely, investing in nonmaterial issues does not appear to have any significant influence on a firm's financial success. Several studies (Khan et al., 2016; Grewal et al., 2020; Martinez, 2016; van Heijningen, 2019) have been done to look at how materiality in sustainability reporting affects things like the accuracy of analyst forecasts, financial performance, and the usefulness of stock prices. Martinez (2016) utilised the Global Reporting Initiative (GRI) principles as a structural framework for the purpose of identifying pertinent social and environmental issues.

These issues were subsequently examined to assess their influence on the accuracy of analyst forecasts. This Guidelines findings indicate that analysts view sustainability disclosures pertaining to significant matters as an indication of favourable performance in environmental and social domains. This perception is associated with increased transparency, reduced uncertainty, and improved accuracy in forecasting.

The study by Grewal et al. (2020) found that material sustainability information has value-relevance and is unique to individual enterprises. These studies demonstrate the significance of recognising and revealing significant sustainability concerns from the standpoint of various stakeholder groups. An exclusive emphasis on investors could potentially hinder the objectives of improving investor returns.

### **15.8 The challenges associated with the use of the concept of double-materiality**

Researchers have found a number of problems with the way double materiality is used. These include a lack of information about how important sustainability problems are picked; differences in how different companies use the GRI and other concept of "materiality;" and stakeholder pressure. Engagement is used to control risks and increase transparency and accountability.

***By lowering the importance of reporting information, organisations often don't have the skills to apply materiality to sustainability issues.***

***Materiality assessment also tends to favour short-term financial interests, and the process of assessing materiality is often outside the scope of sustainability assurance engagements.***

Research shows that there isn't enough information about how important sustainability problems are. This makes it hard to believe sustainability reports and can lead to an inaccurate picture of sustainability success. (Adams, 2004; Guix et al., 2018; Knebel et al., 2015; Machado et al., 2020; Moneva et al., 2006).

***Companies usually talk about their good performance and don't talk about their bad performance. They also tend to twist the science and use sustainability reports to justify their actions and even fool the people who care about them.***



**Adams (2004), Beske et al. (2010), and Knebel et al. (2015) all say this.**

Machado et al. (2020) looked at 140 sustainability reports and found that the materiality assessment method was not clear and didn't make sense. So, reporting organisations have room to change the order in which they put sustainability problems on their list of priorities based on their values and political priorities (Machado et al., 2020; Unerman and Zappettini, 2014).

**When Guix et al. (2018) looked at the sustainability reports from the 50 biggest hotel chains in the world in 2015, they found that most of them had never done a materiality analysis before and that there were different meanings, rules, and ways of using materiality.**

Also, Puroila and Makela (2019) found that when organisations do a materiality assessment, they tend to put money problems ahead of sustainability issues.

**Disclosure Puroila and Makela (2019) say that the GRI idea of “materiality” has been widely used in approaches to sustainability.** In practice, however, the way implementation is done varies (Moroney and Trotman, 2016). (Farooq and de Villiers, 2019) Organisations include stakeholder involvement in the materiality assessment process in order to make reporting more clear and accountable. On the other hand, stakeholder involvement is also used to manage legitimate risks, which leads to less materiality. Hess (2008) says that these things make the material reported less reliable. Font et al. (2016) say that organisations can't meet the needs of stakeholders if they don't have a clear idea of what's important to each stakeholder.

**The high some organisations' lack of understanding about materiality hurts the quality of their reports, and consultants are often hired to bridge the gap between how materiality is thought of and how it is used (Guix et al., 2019).**

**The idea of “materiality” has a certain amount of wiggle room, and it is seen as more of a management view than a set of rules (Edgley, 2014).**

Concerns about how subjective materiality analysis is are made worse by the fact that companies only share a small amount of information about their materiality analyses and don't share much about how they find users or important topics (Beske et al., 2020).

**The materiality matrix is a techno-rational tool that makes it easier to assess material sustainability problems, stakeholder involvement, and society's pursuit of sustainable development (Puroila and Makela, 2019; Machado et al., 20; Puroila and Makela, 2019).**

It makes it seem like different stakeholders all agree on material sustainability issues when, in fact, they don't (Boiral, 2013; Cho et al., 2015; Eccles and Youmans, 2016; Makela, 2013; Milne and Grey, 2013). Also, **materiality disclosure sets up reporting content as a “true and fair view” of a company's performance on sustainability,**



**but it doesn't take into account how time and place affect the outcome (Boiral and Henri, 2017; Brown and Dillard, 2013; Cooper and Morgan, 2013; Puroila and Makela, 2019; Stirling, 2008).**

**Jones et al. (2016) say that reporting organisations tend to put business continuity ahead of things like branding and marketing, acquisitions, financial tax policy, research and innovation, customer happiness, and so on. It was decided that environmental problems like climate change, greenhouse gas emissions, water use, waste management, and biodiversity were not as important.**

**This shows that the way companies use materiality doesn't challenge the dominant business philosophy of continuing economic growth and doesn't encourage more sustainable patterns of consumption (Jones et al., 2016). (Puroila and Makela, 2019).**

**The measurement of materiality still gives more weight to short-term business financial interests and doesn't take into account the complexity of sustainable development. There is also a chance that organisations will focus on making their most important stakeholder groups more legitimate. This means that organisations might not follow the rules if they don't improve their relationship with these stakeholder groups (Nikolaeva and Bicho, 2011).**

**Borial et al. (2019) say that the materiality assessment process and other GRI principles are often left out of sustainability assurance activities. Data accuracy, reliability, and completeness are the only concepts that are also used in financial auditing. (Boiral et al., 2019) systematically made sure.**

**"I am heavily inspired by the ways in which, from a financial auditing point of view, sustainability assurance tasks have a small scope". (Boiral and Heras-Saizarbitoria, 2020; Borial et al., 2019; Farooq and De Villiers, 2019; Gürtürk and Hahn, 2016).**

**The first step in figuring out the risks and effects of sustainable development on financial accounts is to find out how an organisation's actions affect sustainable development in a meaningful way. *The research makes it clear that companies tend to put money first. This means that a reporting system that encourages this is bad for sustainable growth and, ironically, for long-term financial success.***





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## **Annexure-I Energy Conservation (Amendment) Act, 2022**

रजिस्ट्री सं० डी० एल०—(एन)04/0007/2003—22

REGISTERED NO. DL—(N)04/0007/2003—22



**भारत का राजपत्र**  
**The Gazette of India**

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असाधारण

EXTRAORDINARY

भाग II — खण्ड 1

PART II — Section 1

प्राधिकार से प्रकाशित

PUBLISHED BY AUTHORITY

सं० 26] नई दिल्ली, मंगलवार, दिसम्बर 20, 2022/ अग्रहाण्य 29, 1944 (शक)  
No. 26] NEW DELHI, TUESDAY, DECEMBER 20, 2022/AGRAHAYANA 29, 1944 (SAKA)

इस भाग में भिन्न पृष्ठ संख्या दी जाती है जिससे कि यह अलग संकलन के रूप में रखा जा सके।  
Separate paging is given to this Part in order that it may be filed as a separate compilation.

**MINISTRY OF LAW AND JUSTICE**  
**(Legislative Department)**

*New Delhi, the 20th December, 2022/ Agrahayana 29, 1944 (Saka)*

The following Act of Parliament received the assent of the President on the 19th December, 2022 and is hereby published for general information:—

**THE ENERGY CONSERVATION (AMENDMENT) ACT, 2022**

No. 19 OF 2022

[19th December, 2022.]

An Act further to amend the Energy Conservation Act, 2001.

BE it enacted by Parliament in the Seventy-third Year of the Republic of India as follows:—

- (1) This Act may be called the Energy Conservation (Amendment) Act, 2022.
- (2) It shall come into force on such date as the Central Government may, by notification in the Official Gazette, appoint.

Short title and commencement.

Amendment  
of section 2.

2. In section 2 of the Energy Conservation Act, 2001 (hereinafter referred to as the principal Act),—

52 of 2001.

(i) for clause (c), the following clause shall be substituted, namely:—

‘(c) “building” means any structure or erection or part of structure or erection—

(i) constructed after the rules relating to energy conservation and sustainable building codes have been notified by the Central Government under clause (p) of section 14 and by the State Government under clause (a) of section 15;

(ii) which has a minimum connected load of 100 Kilowatt (kW) or contract demand of 120 Kilovolt Ampere (kVA); and

(iii) which is used or intended to be used for commercial purpose or as an office building or for residential purpose:

Provided that the State Government may specify a lower connected load or contract demand than the load or demand specified above;’;

(ii) after clause (d), the following clauses shall be inserted, namely:—

‘(da) “carbon credit certificate” means the certificate issued by the Central Government or any agency authorised by it under section 14AA;

(db) “carbon credit trading scheme” means the scheme for reduction of carbon emissions notified by the Central Government under clause (w) of section 14;’;

(iii) for clause (h), the following clause shall be substituted, namely:—

‘(h) “energy” means any form of energy derived from fossil fuels or non-fossil sources or renewable sources;’;

(iv) after clause (i), the following clause shall be inserted, namely:—

‘(ia) “energy auditor” means any individual possessing the qualifications prescribed under clause (m) of section 14;’;

(v) for clause (j), the following clause shall be substituted, namely:—

‘(j) “energy conservation and sustainable building code” means the code which provides norms and standards for energy efficiency and its conservation, use of renewable energy and other green building requirements for a building;’;

(vi) after clause (q), the following clause shall be inserted, namely:—

‘(qa) “registered entity” means any entity, including designated consumers, registered for carbon credit trading scheme specified under clause (w) of section 14;’;

(vii) after clause (t), the following clauses shall be inserted, namely:—

‘(ta) “vehicle” shall have the same meaning as assigned to it in clause (28) of section 2 of the Motor Vehicles Act, 1988;

59 of 1988.

(tb) “vessel” includes every description of water craft used or capable of being used in inland waters or in coastal waters, including any ship, boat, sailing vessel, tug, barge or other description of vessel including non-displacement craft, amphibious craft, wing-in-ground craft, ferry, roll-on-roll-off vessel, container vessel, tanker vessel, gas carrier or floating

unit or dumb vessel used for transportation, storage or accommodation within or through inland waters and coastal waters;’.

3. In section 4 of the principal Act,—

Amendment  
of section 4.

(a) in sub-section (1), for the words “twenty, but not exceeding twenty-six”, the words “thirty-one, but not exceeding thirty-seven” shall be substituted;

(b) in sub-section (2),—

(i) after clause (g), the following clauses shall be inserted, namely:—

“(ga) the Secretary to the Government of India, in charge of the Ministry or Department of the Central Government dealing with the Environment, Forest and Climate Change—*ex officio* member;

(gb) the Secretary to the Government of India, in charge of the Ministry or Department of the Central Government dealing with the Housing and Urban Affairs—*ex officio* member;

(gc) the Secretary to the Government of India, in charge of the Ministry or Department of the Central Government dealing with the Road Transport and Highways—*ex officio* member;

(gd) the Secretary to the Government of India, in charge of the Ministry or Department of the Central Government dealing with the Steel—*ex officio* member;

(ge) the Secretary to the Government of India, in charge of the Ministry or Department of the Central Government dealing with the Civil Aviation—*ex officio* member;

(gf) the Secretary to the Government of India, in charge of the Ministry or Department of the Central Government dealing with the Ports, Shipping and Waterways—*ex officio* member;

(gg) Member of the Railway Board (in charge of Energy), Ministry of Railways—*ex officio* member;”;

(ii) after clause (m), the following clause shall be inserted, namely:—

“(ma) Director-General of the National Productivity Council, Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry—*ex officio* member;”;

(iii) for clause (o), the following clause shall be substituted, namely:—

“(o) one official each from the energy or power department of the five States from the five power regions, not below the rank of Principal Secretary to the State Government, to be appointed by the Central Government—member;”;

(iv) for clause (p), the following clause shall be substituted, namely:—

“(p) such number of persons, not exceeding seven, as may be prescribed, to be appointed by the Central Government as members, from amongst persons who, in the opinion of the Central Government, are experts or capable of representing industry, equipment and appliance manufacturers, architects, institutes and consumers—members;”.

4. In section 13 of the principal Act, in sub-section (2),—

Amendment of  
section 13.

(i) in clause (a), after the word and figures “section 14”, the words “and other standards required to be prescribed under other provisions of this Act” shall be inserted;

(ii) in clause (d), for the words “energy conservation building codes”, the words “energy conservation and sustainable building codes” shall be substituted;

(iii) in clause (h), after the word “promote”, the words “or undertake” shall be inserted;

(iv) after clause (t), the following clauses shall be inserted, namely:—

“(ta) collaborate with any international institution or organisation or to obtain membership of bodies having similar objectives as that of the Bureau, in consultation with the Central Government;

(tb) authorise any agency in the country or outside the country to carry out any of the functions of the Bureau, for such purposes, and subject to such terms and conditions, as may be specified by regulations;

(tc) undertake, or authorise any other body which meets with such technical qualifications, as may be specified by regulations, to test samples for purposes other than those specified in section 14;

(td) empanel technical experts to promote energy efficiency and carbon credit trading activities undertaken to meet the objectives of the Act;

(te) recommend to the Central Government on the requirements to be specified in the carbon credit trading scheme to be notified under clause (w) of section 14;

(tf) recommend minimum share of consumption of non-fossil sources by designated consumers as energy or feedstock;”.

Insertion of new section 13A. Prohibition of use of deceptive name, etc.

5. After section 13 of the principal Act, the following section shall be inserted, namely:—

“13A. (1) No person shall, without previous permission of the Bureau, use any name which so nearly resembles the name of the Bureau as to deceive or likely to deceive the public.

(2) Notwithstanding anything contained in any other law for the time being in force, no registering authority shall register any company, firm or other body of persons which bears any name or mark resembling the name of the Bureau.”.

Amendment of section 14.

6. In section 14 of the principal Act,—

(i) in clause (a), for the word “appliance”, the words “appliance, vehicle, vessel, industrial unit, building or establishment” shall be substituted;

(ii) in clause (b), after the words “class of equipment or appliances,”, the words “or vehicle, vessel, industrial unit, building or establishment” shall be inserted;

(iii) for clause (c), the following clause shall be substituted, namely:—

“(c) prohibit manufacture or import of any equipment or appliance or vehicle or vessel specified under clause (b), unless it conforms to energy consumption standards specified under clause (a):

Provided that an industrial unit specified under clause (b) shall close its operations unless it conforms to the norms for processes or energy consumption standards specified under clause (a):

Provided further that from the date of notification of norms for processes and energy consumption standards under clause (a), no notification prohibiting such manufacture or import shall be issued—

(i) within a period of six months in the case of equipment or appliance or vehicle or vessel; and

(ii) within a period of two years for closure of industrial unit:

Provided also that the Central Government may, having regard to the market share and the technological development having impact on equipment or appliance or vehicle or vessel, and for reasons to be recorded in writing, extend the said period of six months referred to above, by a further period not exceeding six months;”;

(iv) in clause (f), after the words “Energy Intensive Industries”, the words “and other establishments” shall be inserted;

(v) in clause (h), after the words “Energy Intensive Industries”, the words “and other establishments” shall be inserted;

(vi) in clause (l), for the words “energy manager”, the words “energy auditor or energy manager” shall be substituted;

(vii) in clauses (p), (q) and (r), for the words “energy conservation building codes”, the words “energy conservation and sustainable building codes” shall be substituted;

(viii) after clause (v), the following clauses shall be inserted, namely:—

“(w) specify the carbon credit trading scheme;

(x) specify minimum share of consumption of non-fossil sources by designated consumers as energy or feedstock, provided different share of consumption may be specified for different types of non-fossil sources for different designated consumers.”.

7. In section 14A of the principal Act,—

Amendment of section 14A.

(a) for the marginal heading, the following shall be substituted, namely:—

“Issuance of energy savings certificate.”;

(b) in sub-section (1), after the words “Central Government”, the words “or any agency authorised by it” shall be inserted;

(c) in sub-section (2), the following proviso shall be inserted, namely:—

“Provided that any other person may also purchase energy saving certificate or carbon credit certificate on voluntary basis.”.

8. After section 14A of the principal Act, the following section shall be inserted, namely:—

Insertion of new section 14AA.

“14AA. (1) The Central Government, or any agency authorised by it may issue carbon credit certificate to the registered entity which complies with the requirements of the carbon credit trading scheme.

Issuance of carbon credit certificate.

(2) The registered entity shall be entitled to purchase or sell the carbon credit certificate in accordance with carbon credit trading scheme specified under clause (w) of section 14.”.

9. In section 15 of the principal Act,—

Amendment of section 15.

(i) in clause (a),—

(I) for the words “energy conservation building codes”, at both the places where they occur, the words “energy conservation and sustainable building codes” shall be substituted;

(II) after the words “energy in the buildings”, the words “and implement the same through building bye-laws of the State” shall be substituted;

|   |   |
|---|---|
|   | (ii) in clause (b), for the words “energy conservation building codes”, the words “energy conservation and sustainable building codes” shall be substituted;  |
|   | (iii) after clause (h), the following clause shall be inserted, namely:—<br>“(ha) levy such fee as may be prescribed for the services rendered by the designated agency to promote efficient use of energy and its conservation under this Act;”.   |
| Insertion of new section 15A.               | <b>10.</b> After section 15 of the principal Act, the following section shall be inserted, namely:—   |
| Budget of designated agency.                | “15A. The designated agency shall prepare, in such form and at such time in each financial year as may be prescribed, its budget for the next financial year, showing the estimated receipts and expenditure and forward the same to the State Government, which shall include the same in the annual budget.”.   |
| Substitution of new section for section 16. | <b>11.</b> For section 16 of the principal Act, the following section shall be substituted, namely:—  |
| Establishment of Fund by State Government.  | “16. (1) There shall be constituted a Fund for the purposes of promotion of efficient use of energy and its conservation within the State to be called the State Energy Conservation Fund and there shall be credited thereto—<br>(a) all grants and loans that may be made by the State Government or the Central Government or any other organisation or individual for the purposes of this Act;<br>(b) all fees received by the State Government or the designated agency under this Act;<br>(c) all sums received by the State Government or the designated agency from such other sources as may be decided by the State Government.<br>(2) The Fund shall be utilised for meeting the expenses—<br>(a) of the designated agency in the discharge of its functions;<br>(b) for the objects and purposes authorised by or under this Act.<br>(3) The Fund created under sub-section (1) shall be administered by such person or authority and in such manner as may be prescribed by the rules made by the State Government.”. |
| Substitution of new section for section 26. | <b>12.</b> For section 26 of the principal Act, the following section shall be substituted, namely:—  |
| Penalty.                                    | “26. (1) If any person fails to comply with the provisions of clause (h) or clause (i) or clause (k) or clause (l) of section 14 or clause (c) or clause (h) of section 15, he shall be liable to a penalty which shall not exceed ten lakh rupees:<br>Provided that in the case of continuing failures, the person shall be liable to an additional penalty which may extend to ten thousand rupees for every day during which such failures continue.<br>(2) Notwithstanding anything contained in this Act or any other Act for the time being in force, if any person fails to comply with the provisions of clauses (c) and (d) of section 14, he shall in addition to the penalty of ten lakh rupees, be also liable to pay additional penalty which shall not exceed five thousand rupees per appliance or equipment in relation to which the non-compliance has occurred, but shall not be lower than two thousand rupees:  |

Provided that where such non-compliance relates to any industrial unit or vessel, he shall also be liable to an additional penalty which shall not exceed twice the price of every metric ton of oil equivalent consumed in excess of the prescribed norms:

Provided further that if the manufacturer of a vehicle fails to comply with the fuel consumption norms, he shall also be liable to pay an additional penalty per unit of vehicles sold in the corresponding year, as follows, namely:—

(i) twenty-five thousand rupees per vehicle for non-compliance of norms up to 0.2 litres per 100 kms;

(ii) fifty thousand rupees per vehicle for non-compliance of norms above 0.2 litres per 100 kms.

(3) If any person fails to comply with the directions issued under clauses (n) and (x) of section 14, he shall be liable to a penalty which shall not exceed ten lakh rupees for each such failure:

Provided that he shall also be liable to an additional penalty which shall not exceed twice the price of every metric ton of oil equivalent prescribed under this Act, which is in excess of the prescribed norms.

(4) If a person fails to comply with the provisions of sub-section (1) of section 13A or fails to provide any information under section 52, he shall be liable to a penalty which may extend to fifty thousand rupees on first such non-compliance or failure:

Provided that for every subsequent non-compliance or failure, he shall be liable to pay an additional penalty which shall not exceed ten thousand rupees per day of such non-compliance or failure.

(5) Any amount payable under this section, if not paid, may be recovered as if it were an arrear of land revenue.”.

**13.** After section 27 of the principal Act, the following section shall be inserted, namely:—

Insertion of new section 27A.

“27A. (1) The State Commission may, by notification, make regulations for discharging its functions under this Act.

Power of State Commission to make regulations.

(2) In particular, and without prejudice to the generality of the foregoing power, such regulations may provide for—

(a) the manner of making application before the State Commission and the fee payable;

(b) any other matter which is to be, or may be, provided by regulations by the State Commission for the purposes of its function:

Provided that every regulation made by the State Commission under this section shall be laid, as soon as may be after it is made, before each House of the State Legislature where it consists of two Houses, or where such Legislature consists of one House, before that House.”.

**14.** In section 28 of the principal Act, after clause (b), the following clause shall be inserted, namely:—

Amendment of section 28.

“(c) the loss caused to a consumer and amount of compensation thereof.”.

**15.** In section 52 of the principal Act, for the words, brackets, letter and figures “specified under clause (b) of section 14 shall supply the Bureau with such information, and with such samples”, the words “or any other person or entity covered under this Act shall furnish to the Bureau such information, documents or records relating to energy consumption, and such samples” shall be substituted.

Amendment of section 52.



## Annexures

Amendment of section 56. **16.** In section 56 of the principal Act, in sub-section (2), in clause (l), for the words “energy conservation building codes”, the words “energy conservation and sustainable building codes” shall be substituted.

Amendment of section 57.

**17.** In section 57 of the principal Act, in sub-section (2),—

(i) in clause (a), for the words “energy conservation building codes”, the words “energy conservation and sustainable building codes” shall be substituted;

(ii) after clause (b), the following clauses shall be inserted, namely:—

“(ba) the fee to be levied for the services rendered by the designated agency for promoting efficient use of energy and its conservation under clause (ha) of section 15;

“(bb) the form in which and the time at which, the budget of the designated agency shall be prepared under section 15A;”;

(iii) in clause (c), for the word, brackets and figure “section (4)”, the word, brackets and figure “section (3)” shall be substituted.

Amendment of section 58.

**18.** In section 58 of the principal Act, in sub-section (2), after clause (h), the following clauses shall be inserted, namely:—

“(ha) the purposes, and the terms and conditions subject to which, an agency may be authorised to carry out the functions of the Bureau under clause (tb) of sub-section (2) of section 13;

“(hb) the technical qualification to test samples under clause (tc) of sub-section (2) of section 13;”.

DR. REETA VASISHTA,  
Secretary to the Govt. of India.

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**Annexure-II**  
**Indian Energy Exchange becomes India's First**  
**Carbon Neutral Power Exchange**



## Indian Energy Exchange becomes India's First Carbon Neutral Power Exchange

- **Achieving carbon Neutrality underscores IEX's commitment to contribute towards India's sustainability aspirations**
- **This will help IEX members and participants by reducing their Scope 3 emissions by building a greener value chain**

**New Delhi, December 14, 2022:** Indian Energy Exchange (IEX), India's leading and premier energy market platform, has become a Carbon Neutral Power Exchange. IEX is now India's first carbon-neutral Power Exchange, using market based tradable instruments to offset its carbon emissions.

To reduce its carbon footprints, IEX voluntarily canceled CERs (certified emissions reductions) from clean projects registered under the Clean Development Mechanism of UNFCCC (United Nations Framework Convention on Climate Change) and used marketbased tradable instruments. EKI Energy, India's leading pre-eminent global service provider in the sphere of Energy, Carbon Credit & Quality Management, was the sustainability partner by providing advisory & consultancy services in this climate action exercise.

**Shri SN Goel, Chairman and MD, IEX** said," We are honored to achieve another milestone as a carbon-neutral exchange, as we further our commitment towards India's Net Zero ambitions. This achievement is yet another milestone in our 15-year journey towards enabling India's energy transition in a sustainable manner.

IEX's commitment towards climate mitigation will support the corporates and industries who want to be associated with an environmentally responsible organization and will enable them to contribute towards the critical challenge of climate change.

According to the recent UNEP 2022 report, global GHG emission must be reduced by 45% by 2030 to get on track to limit global warming to 1.5 degrees. The total global GHG emissions has been estimated at around 53 GTCO<sub>2</sub>eq in 2021. The recently concluded COP 27 reiterated the need to ramp-down GHG emissions. In our national context, India has set a target to Net Zero emissions by 2070.

IEX is committed to contribute towards fulfilling India's Net Zero emissions' target by creating an ecosystem for reduction of emissions.



## Annexures

### About IEX:

*IEX is India's premier energy exchange providing a nationwide, automated trading platform for physical delivery of electricity, renewable energy and certificates including renewable energy certificates as well as the energy saving certificates. The exchange platform enables efficient price discovery and increases the accessibility and transparency of the energy market in India while also enhancing the speed and efficiency of trade execution. The Exchange is ISO Certified for quality management, Information security management and environment management since August 2016. The Exchange is a publicly listed company with NSE and BSE since October 2017 and is approved and regulated by Central Electricity Regulatory Commission since 27 June 2008. For further details, log on to: **www.iexindia.com***

#### **Ms. Aparna Garg**

Head - Corporate Communications

Telephone: +91-9958274392

Email: [aparna.garg@iexindia.com](mailto:aparna.garg@iexindia.com)

#### **Mr. Suhas Tadas**

The PRactice (On behalf of IEX & IGX)

Telephone: +91-8010486299

Email: [suhas@the-practice.net](mailto:suhas@the-practice.net)

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### **Indian Energy Exchange Ltd**

Registered Office: C/o Avanta Business Centre, First Floor, Unit No. 1.14(a), D2, Southern Park, District Centre, Saket, New Delhi-110017, India

Corporate Office: 9th Floor, Max Towers, Sector 16B, Noida, Uttar Pradesh-201301, India

Tel: +91-011-3044 6596 | Tel: +91-120-4648 100 | Fax No.: +91-120-4648 115

CIN: L74999DL2007PLC277039 | Website: **www.iexindia.com**



**Annexure-III**  
**Draft Carbon Credit Trading Scheme (CCTS)**  
**by Ministry of Power**



Email <https://email.gov.in/h/printmessage?id=C:-112353&tz=Asia/Kolkata...>  
Email **Govind Kumar**

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**Forwarding of draft Carbon Credit Trading Scheme (CCTS)- Request for furnishing comments thereon-reg.**

---

**From:** Govind Kumar<ecdivision-mop@nic.in> Mon, Mar 27, 2023 10:38 AM  
**Subject :** Forwarding of draft Carbon Credit Trading Scheme (CCTS)- Request for furnishing comments thereonreg.  
**To:** info@cii.in, ASSOCHAM India <assochem@nic.in>, ficci@ficci.com, secretary <secretary@cma-india.in>  
**Cc :** Narender Singh <narendersingh.cea@gov.in>, ANOOP SINGH BISHT <anoopsingh.bisht@nic.in>, Govind Kumar <govind.k@gov.in>

Respected Sir/Madam,

I am directed to forward herewith a copy of Ministry of Power's Letter No . 21/6/2022-EC dated 27-03-2023 along with a draft "**Carbon Credit Trading Scheme (CCTS)**" with the request to provide comments on CCTS positively by **14-04-2023** to this Ministry.

With Regards  
EC,ET&EV Division  
Ministry of Power

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**Letter dated 27-03-2023 reg CCTS.pdf**  
564 KB

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F. No.21/6/2022-EC  
Government of India  
Ministry of Power  
\*\*\*

F-Wing, 2<sup>nd</sup> Floor, Nirman Bhawan,  
New Delhi, the 27<sup>th</sup> March, 2023

To

- (i) The President,  
Confederation of Indian Industry (CII),  
The Mantosh Sondhi Centre,  
23, Institutional Area, Lodi Road, New Delhi -110003.
- (ii) The President,  
ASSOCHAM,  
4<sup>th</sup> Floor, YMCA Cultural Centre & Library Building,  
01, Jai Singh Road, New Delhi-110001.
- (iii) The President,  
FICCI,  
Federation House, Tansen Marg, New Delhi -110001.
- (iv) The President,  
Carbon Market Association of India,  
A-65, Sector-71,  
Noida, Uttar Pradesh -201304.

**Sub: Forwarding of draft Carbon Credit Trading Scheme (CCTS) –Request for furnishing comments thereon– Reg.**

Sir/Madam,

I am directed to say that the Parliament has passed the proposed Energy Conservation (Amendment) Bill, 2022 and notification for the same was issued in December, 2022. One of the provisions of this amendment includes empowering Central Government to "Specify Carbon Trading Scheme", in consultation with Bureau of Energy Efficiency (BEE). Ministry of Power is in the process to finalize the Carbon Credit Trading Scheme (CCTS).

2. In this context, a copy of the draft Carbon Credit Trading Scheme (CCTS) is forwarded herewith for comments.

3. It is requested that comments on the draft Carbon Credit Trading Scheme (CCTS) may please be forwarded to Ministry of Power at the earliest before 14<sup>th</sup> April, 2023.

4. This issues with the approval of the Competent Authority.

Encl: As above.

Yours faithfully,

  
(Govind Kumar)

Under Secretary to the Government of India  
Tel: 23061623

## MINISTRY OF POWER NOTIFICATION

New Delhi, the \_\_\_ of \_\_\_\_, 2023

S.O.\_/ – In exercise of the powers conferred by clause (w) of Section 14 and clause (1) and (2) of Section 14AA of the Energy Conservation Act, 2001 (52 of 2001) as amended from time to time, the Central Government, in consultation with the Bureau, hereby specify the Carbon Credit Trading Scheme to establish framework for Indian Carbon Market:

1. **Definitions.**- (1) In this framework, unless the context otherwise requires,-
- (a) **'Accredited Carbon Verifier'** means an agency accredited by the Bureau to carry out validation or verification activities in respect of the Carbon Credit Trading Scheme;
  - (b) **'Act'** means the Energy Conservation Act, 2001 (52 of 2001), as amended from time to time;
  - (c) **'Bureau'** means the Bureau of Energy Efficiency as established and incorporated under Section 3 of the Act;
  - (d) **'Carbon Credit Certificate'** or **'CCC'** means the Certificate issued to the Registered Entity by the Central Government or any agency authorised by it under Section 14AA of the Act, in the Carbon Credit Trading Scheme where each Certificate issued shall represent reduction or removal of one ton of CO<sub>2</sub> equivalent (tCO<sub>2</sub>e);
  - (e) **'Carbon Credit Trading Scheme'** means the scheme for reduction or removal of GHG emissions notified by the Central Government under clause (w) of Section 14 of the Act;
  - (f) **'Commission'** means the Central Electricity Regulatory Commission (CERC) referred to in sub-section (1) of Section 76 of the Electricity Act, 2003;
  - (g) **Compliance Mechanism** – A mechanism under the Carbon Credit Trading Scheme under which the obligated entities shall comply with the prescribed GHG emission norms notified by the Central Government;
  - (h) **'EP Act'** means the Environment Protection Act, 1986 (29 of 1986), as amended from time to time;
  - (i) **'GHGs'** means the Green House Gases as defined by the United Nations Framework Convention on Climate Change (UNFCCC);
  - (j) **'Indian Carbon Market (ICM)'** means a national framework established with an objective to decarbonize the Indian economy by pricing the GHG emission through trading of the Carbon Credit Certificates;

## Annexures

- (k) **'Non-Obligated Entities'** means 'registered entities' that are not notified under the compliance mechanism and which can either register their projects or purchase the carbon credit certificates on voluntary basis;
  - (l) **'Obligated Entities'** means 'registered entities' that are notified under the Compliance Mechanism;
  - (m) **'Power Exchange'** means an electronic trading platform as defined under sub-clause (as) of clause (1) of Regulation 2 of the Central Electricity Regulatory Commission (Power Market) Regulations, 2021;
  - (n) **'Registered Entity'** means any entity, including designated consumers, registered for carbon credit trading scheme specified under clause (w) of Section 14 of the Act;
  - (o) **'Registry'** means the agency designated as such to perform such functions as defined in this framework in respect of Carbon Credit Trading Scheme;
  - (p) **'United Nations Framework Convention on Climate Change (UNFCCC)'** means the United Nations entity tasked with addressing the global response to the threat of Climate Change;
  - (q) **'Validation'** means the process of evaluation of a project under the Voluntary mechanism by an Accredited Carbon Verifier against the requirements of the voluntary mechanism;
  - (r) **'Verification'** means an evaluation by the Accredited Carbon Verifier of the activities undertaken by the registered entity under either compliance or voluntary mechanism for issuance of CCC;
  - (s) **Voluntary Mechanism** – A mechanism under the Carbon Credit Trading Scheme where the non-obligated entities can register their projects for GHG emission reduction or removal for issuance of Carbon Credit Certificates;
- (2) Words and expressions used in this notification and not defined herein but defined in the Act or EP Act or any other rules or regulations issued under the said Act(s), shall have the same meaning as assigned to them in the respective Act(s), or such other rules or regulations.

## 2. Indian Carbon Market Governing Board (ICMGB) and its Functions.-.

- (1) The governance of the Indian Carbon Market (ICM) and direct oversight of its administrative and regulatory functioning shall vest in the Governing Board, to be called as ICMGB.
- (2) The ICMGB shall consist of the following members:
  - (a) Secretary, Ministry of Environment, Forest and Climate Change- *ex-officio* Co-Chairperson;

- (b) Secretary, Ministry of Power – *ex-officio* Co-Chairperson;
  - (c) Joint Secretary or above from Ministry of Finance – Member;
  - (d) Joint Secretary or above from Niti Aayog – Member;
  - (e) Joint Secretary or above from Ministry of Power – Member;
  - (f) Joint Secretary or above from Ministry of Environment, Forest and Climate Change - Member;
  - (g) Joint Secretary or above from Ministry of New and Renewable Energy – Member;
  - (h) Joint Secretary or above from Ministry of Steel – Member;
  - (i) Joint Secretary or above from Ministry of Coal – Member;
  - (j) Joint Secretary or above from Ministry of Petroleum and Natural Gas – Member;
  - (k) Chairperson, Central Electricity Authority – Member;
  - (l) CMD, Grid Controller of India Limited – Member;
  - (m) any other Member as nominated by ICMGB – Member;
  - (n) Director General, Bureau of Energy Efficiency – *ex-officio* Member Secretary;
- (3) ICMGB shall discharge following functions:-
- (a) recommend procedures for institutionalizing the Indian carbon market for the approval of Central Government;
  - (b) recommend to the Central Government the rules and regulations for the functions of ICM;
  - (c) recommend methodologies to be used under voluntary mechanism for the approval of the Central Government;
  - (d) recommend guidelines regarding sale of carbon credit certificates to outside India to the Central Government;
  - (e) approve projects under the voluntary mechanism;
  - (f) recommend to the central government or its designated agency for issuance of carbon credit certificate (CCC);
  - (g) approve the process/conditions for crediting period/renewal/retirement of CCC;
  - (h) ;

## Annexures

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- (i) oversight of the administrative and regulatory functions of Indian Carbon Market;
  - (j) to constitute any Committee or Working group as required in connection with ICM;
  - (k) any other function as assigned by the Central Government.
- (4) ICMGB shall meet at least once in a quarter of every year, or as may be required.
- 3. ICM Administrator and its Functions.-** (1) The Bureau shall be the Administrator for the Indian Carbon Market. Bureau shall also work as the Secretariat for ICMGB.
- (5) As the administrator, the Bureau shall discharge the following functions:-
- (a) develop standards and processes for registering projects under voluntary mechanism;
  - (b) develop, methodologies for registering projects under voluntary mechanism;
  - (c) develop trajectory and targets for the entities under compliance mechanism;
  - (d) issue carbon credits certificate (CCC) as recommended by the ICMGB;
  - (e) develop market stability mechanism for carbon credits;
  - (f) develop the procedure for Accredited Carbon Verifiers;
  - (g) accredit the agencies in accordance with the approved procedure for Accredited Carbon Verifiers;
  - (h) constitute one or more technical committees for the purposes of the Carbon Credit Trading Scheme;
  - (i) recommend the type and amount of fees and charges for the purpose of meeting the cost and expense towards implementation of Carbon Credit Trading Scheme for the approval of ICMGB;
  - (j) collect fees from Registered Entity as approved by the ICMGB;
  - (k) develop the process/conditions for crediting period/renewal/retirement of CCC;
  - (l) develop data submission formats, forms for effective functioning of ICM;
  - (m) undertake capacity building activities for the stakeholders;
  - (n) develop and maintain the IT infrastructure including the knowledge platform required for ICM;

- (o) maintain secure database with all security protocols as approved by ICMGB;
- (p) to coordinate any committee or working group formulated by ICMGB in connection with ICM;
- (q) any other function assigned by the ICMGB or Central Government.

**4. ICM Registry and its Functions.-** (1) The Grid Controller of India Limited shall be the registry for the Indian Carbon Market.

- (2) The Registry shall discharge the following functions, in the manner, as may be specified from time to time:-
- (a) comply with the directions issued by the ICMGB or the Commission from time to time;
  - (b) undertake registration of obligated or non-obligated identities;
  - (c) maintain secure database with all security protocols as approved by ICMGB;
  - (d) maintain records of all transactions;
  - (e) sharing of transaction records with Power Exchange(s) and ICM Administrator;
  - (f) assistance in development of IT Platform for maintaining database of Carbon Credit Certificates;
  - (g) to function as Meta-Registry for India;
  - (h) establish linkages with other National/International registries as approved by the ICMGB;
  - (i) any other function assigned by the ICMGB or the administrator.

**5. ICM Trading Regulator and its Functions.-** (1) The Central Electricity Regulatory Commission (CERC) shall be the Regulator for the trading activities under the Indian Carbon Market.

- (2) The CERC shall discharge the following functions, in the manner, as may be specified from time to time:-
- (a) regulate matters relating to trading of CCCs;
  - (b) safeguard interest of both sellers and buyers;
  - (c) regulate frequency of CCCs trading;
  - (d) provide market oversight and take necessary corrective actions to prevent fraud or mistrust.

**6. Technical Committee and its Functions.-**

## Annexures

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- (1) Bureau shall constitute, one or more technical committees for different areas as required under either compliance or voluntary mechanism for the purposes of the Carbon Credit Trading Scheme.
  - (2) Each Technical Committee shall be chaired by a member who has the requisite knowledge for the specified area and respective sectors.
  - (3) Each Technical Committee shall consist of other members as may be required.
  - (4) Each Technical Committee shall perform functions for the purposes of Carbon Credit Trading Scheme as specified by Bureau from time to time.
  - (5) Technical Committee shall make its recommendations to the Bureau, in respect of the matters assigned to it.
- 7. Accredited Carbon Verifiers.-** (1) The Bureau shall specify the procedure including eligibility criteria for accreditation of agencies to function as Accredited Carbon Verifiers with the approval of ICMGB.
- (2) Accredited Carbon Verifiers shall perform functions for the purposes of Carbon Credit Trading Scheme as published by Bureau from time to time.
- 8. Power Exchanges and its Functions.-** (1) The Commission shall approve participation of power exchanges for the purpose of ICM trading, from time to time;
- (2) The Power Exchange(s) shall seek approval of the Commission for their respective Bylaws and Rules for trading of Certificates in the Power Exchange(s).
  - (3) The power exchanges shall perform functions regarding trading of CCC, in accordance with the regulation notified by the Commission.
- 9. Compliance Mechanism.-** (1) The obligated entities including designated consumers covered under compliance mechanism, as notified by the Central Government from time to time, shall register themselves for Carbon Credit Trading Scheme.
- (2) Obligated entities shall be required to reduce GHG emission intensity in terms of tCO<sub>2</sub>e/tonne of production, as notified by the Central Government.
- 10. Detailed Procedures**
- (a) ICMGB and other Authorities as defined in these Rules shall develop the Detailed Procedure for operationalizing ICM and various mechanisms in accordance with these rules
  - (b) The Detailed Procedure shall contain the following, but not limited to:



- (i) criteria for issuance of Carbon Credit Certificates to those obligated entities who reduce their GHG emissions below the prescribed GHG emission norms;
  - (ii) validity of Carbon Credit Certificates;
  - (iii) floor and forbearance price of Carbon Credit Certificates; (iv) requirement, format and timeline for submissions;
  - (v) monitoring, reporting and verification;
  - (vi) other related and incidental matters, regarding compliance mechanism.
11. **Voluntary Mechanism.**- (1) The Bureau shall develop methodologies and detailed procedure for registration of projects and issuance of carbon credit certificates for different sectors, as and when required, with support of technical committees and submit the same to ICMGB;
12. **Power to give directions.**- ICM Administrator may, from time to time, issue such directions and orders to the registered entities, with the approval of the Central Government, as considered appropriate for the implementation of this scheme.

[F.No. \_\_/\_\_/2023-EC]  
AJAY TEWARI, Addl. Secy.



**Annexure-IV**  
**SEBI Circular No: SEBI/HO/CFD/CFD-SEC-2/P/  
CIR/2023/122 dated 12th July 2023**



## CIRCULAR

SEBI/HO/CFD/CFD-SEC-2/P/CIR/2023/122

July 12, 2023

To,  
All listed entities  
All Recognized Stock Exchanges

Sir / Madam,

**Subject: BRSR Core – Framework for assurance and ESG disclosures for value chain**

1. SEBI vide Circular No. SEBI/HO/CFD/CMD-2/P/CIR/2021/562 dated May 10, 2021 had prescribed the Business Responsibility and Sustainability Report (BRSR) which was subsequently incorporated in the Master Circular No. SEBI/HO/CFD/PoD2/CIR/P/2023/120 dated July 11, 2023. Based on the recommendations of the ESG Advisory Committee and pursuant to public consultation, the Board decided to introduce the BRSR Core for assurance by listed entities. The Board further decided to introduce disclosures and assurance for the value chain of listed entities, as per the BRSR Core.
2. The provisions of SEBI (Listing Obligations and Disclosure Requirements) Regulations, 2015 ("LODR Regulations") in this regard, have been amended vide Gazette notification no. [SEBI/LAD-NRO/GN/2023/131](#) dated June 14, 2023.
3. **BRSR Core and Updated BRSR**
  - 3.1 The BRSR Core is a sub-set of the BRSR, consisting of a set of Key Performance Indicators (KPIs) / metrics under 9 ESG attributes. Keeping in view the relevance to the Indian / Emerging market context, few new KPIs have been identified for assurance such as job creation in small towns, open-ness of business, gross wages paid to women etc. Further, for better global comparability intensity ratios based on revenue adjusted for Purchasing Power Parity (PPP) have been included. The format of BRSR Core for reasonable assurance is placed at [Annexure I](#). The BRSR format after incorporating new KPIs of BRSR Core is placed as [Annexure II](#). Accordingly, the BRSR format as prescribed in Annexure 16 of the aforementioned Master Circular stands revised.
  - 3.2 In order to facilitate the verification process, the BRSR Core specifies the data and approach for reporting and assurance. It is however clarified

## Annexures

that the approach specified is only a base methodology. Any changes or industry specific adjustments / estimations shall be disclosed.

3.3 For ease of reference, the BRSR Core contains a cross-reference to the disclosures contained in the BRSR.

### 3.4 Applicability

3.4.1 From FY 2023 – 2024, the top 1000 listed entities (by market capitalization) shall make disclosures as per the updated BRSR format, as part of their Annual Reports.

3.4.2 Listed entities shall mandatorily undertake reasonable assurance of the BRSR Core, as per the glide path specified in the following table:

| Financial Year | Applicability of BRSR Core to top listed entities (by market capitalization) |
|----------------|--|
| 2023 – 24      | Top 150 listed entities  |
| 2024 – 25      | Top 250 listed entities  |
| 2025 – 26      | Top 500 listed entities  |
| 2026 – 27      | Top 1000 listed entities   |

## 4. ESG Disclosures for value chain

4.1 Disclosures for value chain shall be made by the listed company as per BRSR Core, as part of its Annual Report. For this purpose, value chain shall encompass the top upstream and downstream partners of a listed entity, cumulatively comprising 75% of its purchases / sales (by value) respectively.

4.2 Listed entities shall report the KPIs in the BRSR Core for their value chain to the extent it is attributable to their business with that value chain partner. Such reporting may be segregated for upstream and downstream partners or can be reported on an aggregate basis.

4.3 The scope of reporting and any assumptions or estimates, if any, shall be clearly disclosed.

### 4.4 Applicability

4.4.1 ESG disclosures for the value chain shall be applicable to the top 250 listed entities (by market capitalization), on a comply-or-explain basis from FY 2024-25.

4.4.2 The limited assurance of the above shall be applicable on a comply-or-explain basis from FY 2025 - 26.



**5. Assurance provider**

- 5.1 The Board of the listed entity shall ensure that the assurance provider of the BRSR Core has the necessary expertise, for undertaking reasonable assurance.
  - 5.2 The listed entity shall ensure that there is no conflict of interest with the assurance provider appointed for assuring the BRSR Core. For instance, it shall be ensured that the assurance provider or any of its associates do not sell its products or provide any non-audit / non-assurance related service including consulting services, to the listed entity or its group entities.
6. The Stock Exchanges are advised to bring the provisions of this circular to the notice of all listed entities and also disseminate the same on their websites.
  7. The Circular is issued in exercise of the powers conferred under Section 11(1) of the Securities and Exchange Board of India Act, 1992 read with Regulation 101 of the LODR.

Yours faithfully,

**Surabhi Gupta**  
**General Manager**  
**Corporation Finance Department**  
**Supervision, Enforcement and Compliance Division - II**  
+91-22-26449315  
[surabhig@sebi.gov.in](mailto:surabhig@sebi.gov.in)



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## **Annexure-V**

### **SEBI Business Responsibility & Sustainability Reporting Format**

**BUSINESS RESPONSIBILITY & SUSTAINABILITY REPORTING FORMAT****SECTION A: GENERAL DISCLOSURES****I. Details of the listed entity**

1. Corporate Identity Number (CIN) of the Listed Entity
2. Name of the Listed Entity
3. Year of incorporation
4. Registered office address
5. Corporate address
6. E-mail
7. Telephone
8. Website
9. Financial year for which reporting is being done
10. Name of the Stock Exchange(s) where shares are listed
11. Paid-up Capital
12. Name and contact details (telephone, email address) of the person who may be contacted in case of any queries on the BRSR report
13. Reporting boundary - Are the disclosures under this report made on a standalone basis (i.e. only for the entity) or on a consolidated basis (i.e. for the entity and all the entities which form a part of its consolidated financial statements, taken together).
14. Name of assurance provider
15. Type of assurance obtained

**II. Products/services**

16. Details of business activities (*accounting for 90% of the turnover*):

| S.No. | Description of Main Activity | Description of Business Activity | % of Turnover of the entity |
|-------|------------------------------|----------------------------------|-----------------------------|
|       |                              |                                  |                             |
|       |                              |                                  |                             |
|       |                              |                                  |                             |

17. Products/Services sold by the entity (*accounting for 90% of the entity's Turnover*):

| S.No. | Product/Service | NIC Code | % of total Turnover contributed |
|-------|-----------------|----------|---------------------------------|
|       |                 |          |                                 |
|       |                 |          |                                 |
|       |                 |          |                                 |

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### III. Operations

18. Number of locations where plants and/or operations/offices of the entity are situated:

| Location      | Number of plants | Number of offices | Total |
|---------------|------------------|-------------------|-------|
| National      |                  |                   |       |
| International |                  |                   |       |

19. Markets served by the entity:

a. Number of locations

| Locations                        | Number |
|----------------------------------|--------|
| National (No. of States)         |        |
| International (No. of Countries) |        |

b. What is the contribution of exports as a percentage of the total turnover of the entity?

c. A brief on types of customers

### IV. Employees

20. Details as at the end of Financial Year:

a. Employees and workers (including differently abled):

| S. No.           | Particulars                   | Total (A) | Male    |           | Female  |           |
|------------------|-------------------------------|-----------|---------|-----------|---------|-----------|
|                  |                               |           | No. (B) | % (B / A) | No. (C) | % (C / A) |
| <b>EMPLOYEES</b> |                               |           |         |           |         |           |
| 1.               | Permanent (D)                 |           |         |           |         |           |
| 2.               | Other than Permanent (E)      |           |         |           |         |           |
| 3.               | <b>Total employees(D + E)</b> |           |         |           |         |           |
| <b>WORKERS</b>   |                               |           |         |           |         |           |
| 4.               | Permanent (F)                 |           |         |           |         |           |
| 5.               | Other than Permanent (G)      |           |         |           |         |           |
| 6.               | <b>Total workers (F + G)</b>  |           |         |           |         |           |

b. Differently abled Employees and workers:

| S. No                              | Particulars                                      | Total (A) | Male    |           | Female  |           |
|------------------------------------|--|-----------|---------|-----------|---------|-----------|
|                                    |  |           | No. (B) | % (B / A) | No. (C) | % (C / A) |
| <b>DIFFERENTLY ABLED EMPLOYEES</b> |  |           |         |           |         |           |
| 1.                                 | Permanent (D)                                    |           |         |           |         |           |
| 2.                                 | Other than Permanent (E)                         |           |         |           |         |           |
| 3.                                 | <b>Total differently abled employees (D + E)</b> |           |         |           |         |           |
| <b>DIFFERENTLY ABLED WORKERS</b>   |  |           |         |           |         |           |
| 4.                                 | Permanent (F)                                    |           |         |           |         |           |
| 5.                                 | Other than permanent (G)                         |           |         |           |         |           |
| 6.                                 | <b>Total differently abled workers (F + G)</b>   |           |         |           |         |           |

21. Participation/Inclusion/Representation of women

|                          | Total (A) | No. and percentage of Females |           |
|--------------------------|-----------|-------------------------------|-----------|
|                          |           | No. (B)                       | % (B / A) |
| Board of Directors       |           |                               |           |
| Key Management Personnel |           |                               |           |

22. Turnover rate for permanent employees and workers  
(Disclose trends for the past 3 years)

|                     | FY _____<br>(Turnover rate in current FY) |        |       | FY _____<br>(Turnover rate in previous FY) |        |       | FY _____<br>(Turnover rate in the year prior to the previous FY) |        |       |
|---------------------|---|--------|-------|--|--------|-------|--|--------|-------|
|                     | Male                                      | Female | Total | Male                                       | Female | Total | Male   | Female | Total |
| Permanent Employees |   |        |       |  |        |       |  |        |       |
| Permanent Workers   |   |        |       |  |        |       |  |        |       |

## Annexures

### V. Holding, Subsidiary and Associate Companies (including joint ventures)

23. (a) Names of holding / subsidiary / associate companies / joint ventures

| S. No. | Name of the holding/ subsidiary/ associate companies/ joint ventures(A) | Indicate whether holding/ Subsidiary/ Associate/ Joint Venture | % of shares held by listed entity | Does the entity indicated at column A, participate in the Business Responsibility initiatives of the listed entity? (Yes/No) |
|--------|---|--|-----------------------------------|--|
|        |   |  |                                   |  |

### VI. CSR Details

24. (i) Whether CSR is applicable as per section 135 of Companies Act, 2013: **(Yes/No)**  
(ii) Turnover (in Rs.)  
(iii) Net worth (in Rs.)

### VII. Transparency and Disclosures Compliances

25. Complaints/Grievances on any of the principles (Principles 1 to 9) under the National Guidelines on Responsible Business Conduct:

| Stakeholder group from whom complaint is received | Grievance Redressal Mechanism in Place (Yes/No) (If Yes, then provide web-link for grievance redress policy) | FY ____<br>Current Financial Year          |  |         | FY ____<br>Previous Financial Year         |  |         |
|---|--|--|--|---------|--|--|---------|
|   |  | Number of complaints filed during the year | Number of complaints pending resolution at close of the year | Remarks | Number of complaints filed during the year | Number of complaints pending resolution at close of the year | Remarks |
| Communities                                       |  |  |  |         |  |  |         |
| Investors (other than shareholders)               |  |  |  |         |  |  |         |
| Shareholders                                      |  |  |  |         |  |  |         |
| Employees and workers                             |  |  |  |         |  |  |         |
| Customers   |  |  |  |         |  |  |         |
| Value Chain Partners                              |  |  |  |         |  |  |         |
| Other (please specify)                            |  |  |  |         |  |  |         |



26. Overview of the entity's material responsible business conduct issues

Please indicate material responsible business conduct and sustainability issues pertaining to environmental and social matters that present a risk or an opportunity to your business, rationale for identifying the same, approach to adapt or mitigate the risk along-with its financial implications, as per the following format

| <b>S. No.</b> | <b>Material issue identified</b> | <b>Indicate whether risk or opportunity (R/O)</b> | <b>Rationale for identifying the risk / opportunity</b> | <b>In case of risk, approach to adapt or mitigate</b> | <b>Financial implications of the risk or opportunity (Indicate positive or negative implications)</b> |
|---------------|----------------------------------|---|---|---|---|
|               |                                  |   |   |   |   |
|               |                                  |   |   |   |   |

## Annexures

### SECTION B: MANAGEMENT AND PROCESS DISCLOSURES

This section is aimed at helping businesses demonstrate the structures, policies and processes put in place towards adopting the NGRBC Principles and Core Elements.

| Disclosure   | P | P | P | P | P | P | P | P | P |
|--|---|---|---|---|---|---|---|---|---|
| Questions  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| <b>Policy and management processes</b>   |   |   |   |   |   |   |   |   |   |
| 1. a. Whether your entity's policy/policies cover each principle and its core elements of the NGRBCs. (Yes/No)   |   |   |   |   |   |   |   |   |   |
| b. Has the policy been approved by the Board? (Yes/No)   |   |   |   |   |   |   |   |   |   |
| c. Web Link of the Policies, if available  |   |   |   |   |   |   |   |   |   |
| 2. Whether the entity has translated the policy into procedures. (Yes / No)  |   |   |   |   |   |   |   |   |   |
| 3. Do the enlisted policies extend to your value chain partners? (Yes/No)  |   |   |   |   |   |   |   |   |   |
| 4. Name of the national and international codes/certifications/labels/ standards (e.g. Forest Stewardship Council, Fairtrade, Rainforest Alliance, Trustea) standards (e.g. SA 8000, OHSAS, ISO, BIS) adopted by your entity and mapped to each principle. |   |   |   |   |   |   |   |   |   |
| 5. Specific commitments, goals and targets set by the entity with defined timelines, if any.   |   |   |   |   |   |   |   |   |   |
| 6. Performance of the entity against the specific commitments, goals and targets along-with reasons in case the same are not met.  |   |   |   |   |   |   |   |   |   |
| <b>Governance, leadership and oversight</b>  |   |   |   |   |   |   |   |   |   |
| 7. <i>Statement by director responsible for the business responsibility report, highlighting ESG related challenges, targets and achievements (listed entity has flexibility regarding the placement of this disclosure)</i>                               |   |   |   |   |   |   |   |   |   |
| 8. Details of the highest authority responsible for implementation and oversight of the Business Responsibility policy (ies).  |   |   |   |   |   |   |   |   |   |
| 9. Does the entity have a specified Committee of the Board/ Director responsible for decision making on sustainability related issues? (Yes/ No). If yes, provide details.   |   |   |   |   |   |   |   |   |   |



| 10. Details of Review of NGRBCs by the Company:   |  |     |     |     |     |     |     |     |     |  |     |     |     |     |     |     |     |     |
|---|--|-----|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|-----|-----|-----|-----|-----|-----|
| Subject for Review  | Indicate whether review was undertaken by Director / Committee of the Board/ Any other Committee |     |     |     |     |     |     |     |     | Frequency (Annually/ Half yearly/ Quarterly/ Any other – please specify) |     |     |     |     |     |     |     |     |
|   | P 1  | P 2 | P 3 | P 4 | P 5 | P 6 | P 7 | P 8 | P 9 | P 1  | P 2 | P 3 | P 4 | P 5 | P 6 | P 7 | P 8 | P 9 |
| Performance against above policies and follow up action   |  |     |     |     |     |     |     |     |     |  |     |     |     |     |     |     |     |     |
| Compliance with statutory requirements of relevance to the principles, and, rectification of any non-compliances  |  |     |     |     |     |     |     |     |     |  |     |     |     |     |     |     |     |     |
| 11. Has the entity carried out independent assessment/ evaluation of the working of its policies by an external agency? (Yes/No). If yes, provide name of the agency. | P 1  | P 2 | P 3 | P 4 | P 5 | P 6 | P 7 | P 8 | P 9 |  |     |     |     |     |     |     |     |     |
|   |  |     |     |     |     |     |     |     |     |  |     |     |     |     |     |     |     |     |
| 12. If answer to question (1) above is “No” i.e. not all Principles are covered by a policy, reasons to be stated:  |  |     |     |     |     |     |     |     |     |  |     |     |     |     |     |     |     |     |
| Questions   | P 1  | P 2 | P 3 | P 4 | P 5 | P 6 | P 7 | P 8 | P 9 |  |     |     |     |     |     |     |     |     |
| The entity does not consider the Principles material to its business (Yes/No)   |  |     |     |     |     |     |     |     |     |  |     |     |     |     |     |     |     |     |
| The entity is not at a stage where it is in a position to formulate and implement the policies on specified principles (Yes/No)                                       |  |     |     |     |     |     |     |     |     |  |     |     |     |     |     |     |     |     |
| The entity does not have the financial or/human and technical resources available for the task (Yes/No)   |  |     |     |     |     |     |     |     |     |  |     |     |     |     |     |     |     |     |
| It is planned to be done in the next financial year (Yes/No)  |  |     |     |     |     |     |     |     |     |  |     |     |     |     |     |     |     |     |
| Any other reason (please specify)   |  |     |     |     |     |     |     |     |     |  |     |     |     |     |     |     |     |     |

## SECTION C: PRINCIPLE WISE PERFORMANCE DISCLOSURE

This section is aimed at helping entities demonstrate their performance in integrating the Principles and Core Elements with key processes and decisions. The information sought is categorized as “Essential” and “Leadership”. While the essential indicators are expected to be disclosed by every entity that is mandated to file this report, the leadership indicators may be voluntarily disclosed by entities which aspire to progress to a higher level in their quest to be socially, environmentally and ethically responsible.

### PRINCIPLE 1 Businesses should conduct and govern themselves with integrity, and in a manner that is Ethical, Transparent and Accountable.

#### Essential Indicators

- Percentage coverage by training and awareness programmes on any of the Principles during the financial year:

| Segment                           | Total number of training and awareness programmes held | Topics / principles covered under the training and its impact | %age of persons in respective category covered by the awareness programmes |
|-----------------------------------|--|---|--|
| Board of Directors                |  |   |  |
| Key Managerial Personnel          |  |   |  |
| Employees other than BoD and KMPs |  |   |  |
| Workers                           |  |   |  |

- Details of fines / penalties /punishment/ award/ compounding fees/ settlement amount paid in proceedings (by the entity or by directors / KMPs) with regulators/ law enforcement agencies/ judicial institutions, in the financial year, in the following format (Note: the entity shall make disclosures on the basis of materiality as specified in Regulation 30 of SEBI (Listing Obligations and Disclosure Obligations) Regulations, 2015 and as disclosed on the entity’s website):

| Monetary        |                 |   |                 |                   |  |
|-----------------|-----------------|---|-----------------|-------------------|--|
|                 | NGRBC Principle | Name of the regulatory/ enforcement agencies/ judicial institutions | Amount (In INR) | Brief of the Case | Has an appeal been preferred? (Yes/No) |
| Penalty/ Fine   |                 |   |                 |                   |  |
| Settlement      |                 |   |                 |                   |  |
| Compounding fee |                 |   |                 |                   |  |

| Non-Monetary |                 |   |                 |                   |  |
|--------------|-----------------|---|-----------------|-------------------|--|
|              | NGRBC Principle | Name of the regulatory/ enforcement agencies/ judicial institutions | Amount (In INR) | Brief of the Case | Has an appeal been preferred? (Yes/No) |
| Imprisonment |                 |   |                 |                   |  |
| Punishment   |                 |   |                 |                   |  |

3. Of the instances disclosed in Question 2 above, details of the Appeal/ Revision preferred in cases where monetary or non-monetary action has been appealed.

| Case Details | Name of the regulatory/ enforcement agencies/ judicial institutions |
|--------------|---|
|              |   |

4. Does the entity have an anti-corruption or anti-bribery policy? If yes, provide details in brief and if available, provide a web-link to the policy.
5. Number of Directors/KMPs/employees/workers against whom disciplinary action was taken by any law enforcement agency for the charges of bribery/ corruption:

|           | FY _____<br>(Current Financial Year) | FY _____<br>(Previous Financial Year) |
|-----------|--------------------------------------|---------------------------------------|
| Directors |                                      |                                       |
| KMPs      |                                      |                                       |
| Employees |                                      |                                       |
| Workers   |                                      |                                       |

6. Details of complaints with regard to conflict of interest:

|  | FY _____<br>(Current Financial Year) |         | FY _____<br>(Previous Financial Year) |         |
|--|--------------------------------------|---------|---------------------------------------|---------|
|  | Number                               | Remarks | Number                                | Remarks |
| Number of complaints received in relation to issues of Conflict of Interest of the Directors |                                      |         |                                       |         |
| Number of complaints received in relation to issues of Conflict of Interest of the KMPs      |                                      |         |                                       |         |

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7. Provide details of any corrective action taken or underway on issues related to fines / penalties / action taken by regulators/ law enforcement agencies/ judicial institutions, on cases of corruption and conflicts of interest.
8. Number of days of accounts payables ((Accounts payable \*365) / Cost of goods/services procured) in the following format:

|                                     | FY _____<br>(Current Financial Year) | FY _____<br>(Previous Financial Year) |
|-------------------------------------|--------------------------------------|---------------------------------------|
| Number of days of accounts payables |                                      |                                       |

9. Open-ness of business

Provide details of concentration of purchases and sales with trading houses, dealers, and related parties along-with loans and advances & investments, with related parties, in the following format:

| Parameter                  | Metrics  | FY _____<br>(Current Financial Year) | FY _____<br>(Previous Financial Year) |
|----------------------------|--|--------------------------------------|---------------------------------------|
| Concentration of Purchases | a) Purchases from trading houses as % of total purchases                               |                                      |                                       |
|                            | b) Number of trading houses where purchases are made from                              |                                      |                                       |
|                            | c) Purchases from top 10 trading houses as % of total purchases from trading houses    |                                      |                                       |
| Concentration of Sales     | a) Sales to dealers / distributors as % of total sales                                 |                                      |                                       |
|                            | b) Number of dealers / distributors to whom sales are made                             |                                      |                                       |
|                            | c) Sales to top 10 dealers/ distributors as % of total sales to dealers / distributors |                                      |                                       |

| Parameter        | Metrics  | FY _____<br>(Current Financial Year) | FY _____<br>(Previous Financial Year) |
|------------------|--|--------------------------------------|---------------------------------------|
| Share of RPTs in | a) Purchases (Purchases with related parties / Total Purchases)                          |                                      |                                       |
|                  | b) Sales (Sales to related parties / Total Sales)  |                                      |                                       |
|                  | c) Loans & advances (Loans & advances given to related parties / Total loans & advances) |                                      |                                       |
|                  | d) Investments (Investments in related parties / Total Investments made)                 |                                      |                                       |

### Leadership Indicators

1. Awareness programmes conducted for value chain partners on any of the Principles during the financial year:

| Total number of awareness programmes held | Topics / principles covered under the training | %age of value chain partners covered (by value of business done with such partners) under the awareness programmes |
|---|--|--|
|   |  |  |
|   |  |  |
|   |  |  |

2. Does the entity have processes in place to avoid/ manage conflict of interests involving members of the Board? **(Yes/No)** If Yes, provide details of the same.

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### PRINCIPLE 2 Businesses should provide goods and services in a manner that is sustainable and safe

#### Essential Indicators

- Percentage of R&D and capital expenditure (capex) investments in specific technologies to improve the environmental and social impacts of product and processes to total R&D and capex investments made by the entity, respectively.

|       | Current Financial Year | Previous Financial Year | Details of improvements in environmental and social impacts |
|-------|------------------------|-------------------------|---|
| R&D   |                        |                         |   |
| Capex |                        |                         |   |

- Does the entity have procedures in place for sustainable sourcing? (Yes/No)
  - If yes, what percentage of inputs were sourced sustainably?
- Describe the processes in place to safely reclaim your products for reusing, recycling and disposing at the end of life, for (a) Plastics (including packaging) (b) E-waste (c) Hazardous waste and (d) other waste.
- Whether Extended Producer Responsibility (EPR) is applicable to the entity's activities (Yes/ No). If yes, whether the waste collection plan is in line with the Extended Producer Responsibility (EPR) plan submitted to Pollution Control Boards? If not, provide steps taken to address the same.

#### Leadership Indicators

- Has the entity conducted Life Cycle Perspective / Assessments (LCA) for any of its products (for manufacturing industry) or for its services (for service industry)? If yes, provide details in the following format?

| NIC Code | Name of Product/ Service | % of total Turnover contributed | Boundary for which the Life Cycle Perspective / Assessment was conducted | Whether conducted by independent external agency (Yes/No) | Results communicated in public domain (Yes/No) If yes, provide the web-link. |
|----------|--------------------------|---------------------------------|--|---|--|
|          |                          |                                 |  |   |  |

- If there are any significant social or environmental concerns and/or risks arising from production or disposal of your products / services, as identified in the Life Cycle Perspective/



Assessments (LCA) or through any other means, briefly describe the same along-with action taken to mitigate the same.

| Name of Product / Service | Description of the risk / concern | Action Taken |
|---------------------------|-----------------------------------|--------------|
|                           |                                   |              |
|                           |                                   |              |
|                           |                                   |              |

3. Percentage of recycled or reused input material to total material (by value) used in production (for manufacturing industry) or providing services (for service industry).

| Indicate input material | Recycled or re-used input material to total material |                                     |
|-------------------------|--|-------------------------------------|
|                         | FY _____<br>Current Financial Year                   | FY _____<br>Previous Financial Year |
|                         |  |                                     |

4. Of the products and packaging reclaimed at end of life of products, amount (in metric tonnes) reused, recycled, and safely disposed, as per the following format:

|                 | FY _____<br>Current Financial Year |  |  | FY _____<br>Previous Financial Year |  |  |
|-----------------|------------------------------------|--|--|-------------------------------------|--|--|
|                 | Plastics (including packaging)     |  |  |                                     |  |  |
| E-waste         |                                    |  |  |                                     |  |  |
| Hazardous waste |                                    |  |  |                                     |  |  |
| Other waste     |                                    |  |  |                                     |  |  |

5. Reclaimed products and their packaging materials (as percentage of products sold) for each product category.

| Indicate product category | Reclaimed products and their packaging materials as % of total products sold in respective category |
|---------------------------|---|
|                           |   |

## Annexures

### PRINCIPLE 3 Businesses should respect and promote the well-being of all employees, including those in their value chains

#### Essential Indicators

1. a. Details of measures for the well-being of employees:

|                                       | % of employees covered by |                  |              |                    |              |                    |              |                    |              |                     |              |
|---------------------------------------|---------------------------|------------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|--------------|---------------------|--------------|
|                                       | Total<br>(A)              | Health insurance |              | Accident insurance |              | Maternity benefits |              | Paternity Benefits |              | Day Care facilities |              |
|                                       |                           | Number<br>(B)    | %<br>(B / A) | Number<br>(C)      | %<br>(C / A) | Number<br>(D)      | %<br>(D / A) | Number<br>(E)      | %<br>(E / A) | Number<br>(F)       | %<br>(F / A) |
| <b>Permanent employees</b>            |                           |                  |              |                    |              |                    |              |                    |              |                     |              |
| Male                                  |                           |                  |              |                    |              |                    |              |                    |              |                     |              |
| Female                                |                           |                  |              |                    |              |                    |              |                    |              |                     |              |
| Total                                 |                           |                  |              |                    |              |                    |              |                    |              |                     |              |
| <b>Other than Permanent employees</b> |                           |                  |              |                    |              |                    |              |                    |              |                     |              |
| Male                                  |                           |                  |              |                    |              |                    |              |                    |              |                     |              |
| Female                                |                           |                  |              |                    |              |                    |              |                    |              |                     |              |
| Total                                 |                           |                  |              |                    |              |                    |              |                    |              |                     |              |

- b. Details of measures for the well-being of workers:

|                                       | % of employees covered by |                  |              |                    |              |                    |              |                    |              |                     |              |
|---------------------------------------|---------------------------|------------------|--------------|--------------------|--------------|--------------------|--------------|--------------------|--------------|---------------------|--------------|
|                                       | Total<br>(A)              | Health insurance |              | Accident insurance |              | Maternity benefits |              | Paternity Benefits |              | Day Care facilities |              |
|                                       |                           | Number<br>(B)    | %<br>(B / A) | Number<br>(C)      | %<br>(C / A) | Number<br>(D)      | %<br>(D / A) | Number<br>(E)      | %<br>(E / A) | Number<br>(F)       | %<br>(F / A) |
| <b>Permanent employees</b>            |                           |                  |              |                    |              |                    |              |                    |              |                     |              |
| Male                                  |                           |                  |              |                    |              |                    |              |                    |              |                     |              |
| Female                                |                           |                  |              |                    |              |                    |              |                    |              |                     |              |
| Total                                 |                           |                  |              |                    |              |                    |              |                    |              |                     |              |
| <b>Other than Permanent employees</b> |                           |                  |              |                    |              |                    |              |                    |              |                     |              |
| Male                                  |                           |                  |              |                    |              |                    |              |                    |              |                     |              |
| Female                                |                           |                  |              |                    |              |                    |              |                    |              |                     |              |
| Total                                 |                           |                  |              |                    |              |                    |              |                    |              |                     |              |

- c. Spending on measures towards well-being of employees and workers (including permanent and other than permanent) in the following format –

| Indicate input material   | Recycled or re-used input material to total material |                                     |
|---|--|-------------------------------------|
|   | FY _____<br>Current Financial Year                   | FY _____<br>Previous Financial Year |
| Cost incurred on well-being measures as a % of total revenue of the company |  |                                     |

**2. Details of retirement benefits, for Current FY and Previous Financial Year.**

| Benefits               | FY _____<br>Current Financial Year                 |  |  | FY _____<br>Previous Financial Year                |  |  |
|------------------------|--|--|--|--|--|--|
|                        | No. of employees covered as a % of total employees | No. of workers covered as a % of total workers | Deducted and deposited with the authority (Y/N/N.A.) | No. of employees covered as a % of total employees | No. of workers covered as a % of total workers | Deducted and deposited with the authority (Y/N/N.A.) |
| PF                     |  |  |  |  |  |  |
| Gratuity               |  |  |  |  |  |  |
| ESI                    |  |  |  |  |  |  |
| Others— please specify |  |  |  |  |  |  |

**3. Accessibility of workplaces**

Are the premises / offices of the entity accessible to differently abled employees and workers, as per the requirements of the Rights of Persons with Disabilities Act, 2016? If not, whether any steps are being taken by the entity in this regard.

- Does the entity have an equal opportunity policy as per the Rights of Persons with Disabilities Act, 2016? If so, provide a web-link to the policy.
- Return to work and Retention rates of permanent employees and workers that took parental leave.

| Gender       | Permanent employees |                | Permanent workers   |                |
|--------------|---------------------|----------------|---------------------|----------------|
|              | Return to work rate | Retention rate | Return to work rate | Retention rate |
| Male         |                     |                |                     |                |
| Female       |                     |                |                     |                |
| <b>Total</b> |                     |                |                     |                |

- Is there a mechanism available to receive and redress grievances for the following categories of employees and worker? If yes, give details of the mechanism in brief.

|                                | Yes/No (If Yes, then give details of the mechanism in brief) |
|--------------------------------|--|
| Permanent Workers              |  |
| Other than Permanent Workers   |  |
| Permanent Employees            |  |
| Other than Permanent Employees |  |

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7. Membership of employees and worker in association(s) or Unions recognised by the listed entity:

| Category                  | FY _____<br>(Current Financial Year)                                |   |              | FY _____<br>(Previous Financial Year)                                  |   |              |
|---------------------------|---|---|--------------|--|---|--------------|
|                           | Total employees/<br>workers in<br>respective<br>category<br><br>(A) | No. of<br>employees/<br>workers in<br>respective<br>category, who<br>are part of<br>association(s)<br>or Union<br>(B) | %<br>(B / A) | Total<br>employees/<br>workers in<br>respective<br>category<br><br>(C) | No. of<br>employees/<br>workers in<br>respective<br>category, who<br>are part of<br>association(s)<br>or Union<br>(D) | %<br>(D / C) |
| Total Permanent Employees |   |   |              |  |   |              |
| - Male                    |   |   |              |  |   |              |
| - Female                  |   |   |              |  |   |              |
| Total Permanent Workers   |   |   |              |  |   |              |
| - Male                    |   |   |              |  |   |              |
| - Female                  |   |   |              |  |   |              |

8. Details of training given to employees and workers:

| Category         | FY _____<br>Current Financial Year |                                     |            |                         |            | FY _____<br>Previous Financial Year |                                     |            |                         |            |
|------------------|------------------------------------|-------------------------------------|------------|-------------------------|------------|-------------------------------------|-------------------------------------|------------|-------------------------|------------|
|                  | Total<br>(A)                       | On Health<br>and safety<br>measures |            | On Skill<br>upgradation |            | Total<br>(D)                        | On Health<br>and safety<br>measures |            | On Skill<br>upgradation |            |
|                  |                                    | No.<br>(B)                          | %<br>(B/A) | No.<br>(C)              | %<br>(C/A) |                                     | No.<br>(E)                          | %<br>(E/D) | No.<br>(F)              | %<br>(F/D) |
| <b>Employees</b> |                                    |                                     |            |                         |            |                                     |                                     |            |                         |            |
| Male             |                                    |                                     |            |                         |            |                                     |                                     |            |                         |            |
| Female           |                                    |                                     |            |                         |            |                                     |                                     |            |                         |            |
| <b>Total</b>     |                                    |                                     |            |                         |            |                                     |                                     |            |                         |            |
| <b>Workers</b>   |                                    |                                     |            |                         |            |                                     |                                     |            |                         |            |
| Male             |                                    |                                     |            |                         |            |                                     |                                     |            |                         |            |
| Female           |                                    |                                     |            |                         |            |                                     |                                     |            |                         |            |
| <b>Total</b>     |                                    |                                     |            |                         |            |                                     |                                     |            |                         |            |

**9. Details of performance and career development reviews of employees and worker:**

| Category         | FY _____<br>Current Financial Year |         |         | FY _____<br>Previous Financial Year |         |         |
|------------------|------------------------------------|---------|---------|-------------------------------------|---------|---------|
|                  | Total (A)                          | No. (B) | % (B/A) | Total (C)                           | No. (D) | % (D/C) |
| <b>Employees</b> |                                    |         |         |                                     |         |         |
| Male             |                                    |         |         |                                     |         |         |
| Female           |                                    |         |         |                                     |         |         |
| Total            |                                    |         |         |                                     |         |         |
| <b>Workers</b>   |                                    |         |         |                                     |         |         |
| Male             |                                    |         |         |                                     |         |         |
| Female           |                                    |         |         |                                     |         |         |
| Total            |                                    |         |         |                                     |         |         |

**10. Health and safety management system:**

- Whether an occupational health and safety management system has been implemented by the entity? (Yes/ No). If yes, the coverage such system?
- What are the processes used to identify work-related hazards and assess risks on a routine and non-routine basis by the entity?
- Whether you have processes for workers to report the work related hazards and to remove themselves from such risks. (Y/N)
- Do the employees/ worker of the entity have access to non-occupational medical and healthcare services? (Yes/ No)

**11. Details of safety related incidents, in the following format:**

| Safety Incident/Number  | Category* | FY _____               | FY _____                |
|---|-----------|------------------------|-------------------------|
|   |           | Current Financial Year | Previous Financial Year |
| Lost Time Injury Frequency Rate (LTIFR) (per one million-person hours worked) | Employees |                        |                         |
|   | Workers   |                        |                         |
| Total recordable work-related injuries  | Employees |                        |                         |
|   | Workers   |                        |                         |
| No. of fatalities   | Employees |                        |                         |
|   | Workers   |                        |                         |
| High consequence work-related injury or ill-health (excluding fatalities)     | Employees |                        |                         |
|   | Workers   |                        |                         |

\*Including in the contract workforce

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12. Describe the measures taken by the entity to ensure a safe and healthy work place.
13. Number of Complaints on the following made by employees and workers:

|                    | FY _____<br>(Current Financial Year) |                                       |         | FY _____<br>(Current Financial Year) |                                       |         |
|--------------------|--------------------------------------|---------------------------------------|---------|--------------------------------------|---------------------------------------|---------|
|                    | Filed during the year                | Pending resolution at the end of year | Remarks | Filed during the year                | Pending resolution at the end of year | Remarks |
| Working Conditions |                                      |                                       |         |                                      |                                       |         |
| Health & Safety    |                                      |                                       |         |                                      |                                       |         |

14. Assessments for the year:

|                             | % of your plants and offices that were assessed (by entity or statutory authorities or third parties) |
|-----------------------------|---|
| Health and safety practices |   |
| Working Conditions          |   |

15. Provide details of any corrective action taken or underway to address safety-related incidents (if any) and on significant risks / concerns arising from assessments of health & safety practices and working conditions.

### Leadership Indicators

1. Does the entity extend any life insurance or any compensatory package in the event of death of (A) Employees (Y/N) (B) Workers (Y/N).
2. Provide the measures undertaken by the entity to ensure that statutory dues have been deducted and deposited by the value chain partners.
3. Provide the number of employees / workers having suffered high consequence work-related injury / ill-health / fatalities (as reported in Q11 of Essential Indicators above), who have been are rehabilitated and placed in suitable employment or whose family members have been placed in suitable employment:

|           | Total no. of affected employees/ workers |                                       | No. of employees/workers that are rehabilitated and placed in suitable employment or whose family members have been placed in suitable employment |                                       |
|-----------|--|---------------------------------------|---|---------------------------------------|
|           | FY _____<br>(Current Financial Year)     | FY _____<br>(Previous Financial Year) | FY _____<br>(Current Financial Year)  | FY _____<br>(Previous Financial Year) |
| Employees |  |                                       |   |                                       |
| Workers   |  |                                       |   |                                       |

4. Does the entity provide transition assistance programs to facilitate continued employability and the management of career endings resulting from retirement or termination of employment? **(Yes/ No)**
5. Details on assessment of value chain partners:

|                             | <b>% of value chain partners (by value of business done with such partners) that were assessed</b> |
|-----------------------------|--|
| Health and safety practices |  |
| Working Conditions          |  |

6. Provide details of any corrective actions taken or underway to address significant risks / concerns arising from assessments of health and safety practices and working conditions of value chain partners.

**PRINCIPLE 4: Businesses should respect the interests of and be responsive to all its stakeholders**

**Essential Indicators**

1. Describe the processes for identifying key stakeholder groups of the entity.
2. List stakeholder groups identified as key for your entity and the frequency of engagement with each stakeholder group.

| <b>Stakeholder Group</b> | <b>Whether identified as Vulnerable &amp; Marginalized Group (Yes/ No)</b> | <b>Channels of communication (Email, SMS, Newspaper, Pamphlets, Advertisement, Community Meetings, Notice Board, Website), Other</b> | <b>Frequency of engagement (Annually/ Half yearly/ Quarterly/ others – please specify)</b> | <b>Purpose and scope of engagement including key topics and concerns raised during such engagement</b> |
|--------------------------|--|--|--|--|
|                          |  |  |  |  |
|                          |  |  |  |  |

**Leadership Indicators**

1. Provide the processes for consultation between stakeholders and the Board on economic, environmental, and social topics or if consultation is delegated, how is feedback from such consultations provided to the Board.
2. Whether stakeholder consultation is used to support the identification and management of environmental, and social topics (Yes / No). If so, provide details of instances as to how the inputs received from stakeholders on these topics were incorporated into policies and activities of the entity.
3. Provide details of instances of engagement with, and actions taken to, address the concerns of vulnerable/ marginalized stakeholder groups.

## Annexures

### PRINCIPLE 5 Businesses should respect and promote human rights

#### Essential Indicators

1. Employees and workers who have been provided training on human rights issues and policy(ies) of the entity, in the following format:

| Category               | FY _____<br>(Current Financial Year) |   |              | FY _____<br>(Current Financial Year) |   |              |
|------------------------|--------------------------------------|---|--------------|--------------------------------------|---|--------------|
|                        | Total<br>(A)                         | No. of employees / workers covered<br>(B) | %<br>(B / A) | Total<br>(C)                         | No. of employees / workers covered<br>(D) | %<br>(D / C) |
| <b>Employees</b>       |                                      |   |              |                                      |   |              |
| Permanent              |                                      |   |              |                                      |   |              |
| Other than permanent   |                                      |   |              |                                      |   |              |
| <b>Total Employees</b> |                                      |   |              |                                      |   |              |
| <b>Workers</b>         |                                      |   |              |                                      |   |              |
| Permanent              |                                      |   |              |                                      |   |              |
| Other than permanent   |                                      |   |              |                                      |   |              |
| <b>Total Workers</b>   |                                      |   |              |                                      |   |              |

2. Details of minimum wages paid to employees and workers, in the following format:

| Category                    | FY _____<br>Current Financial Year |                               |            |                      |            | FY _____<br>Previous Financial Year |                               |            |                      |            |
|-----------------------------|------------------------------------|-------------------------------|------------|----------------------|------------|-------------------------------------|-------------------------------|------------|----------------------|------------|
|                             | Total<br>(A)                       | On Health and safety measures |            | On Skill upgradation |            | Total<br>(D)                        | On Health and safety measures |            | On Skill upgradation |            |
|                             |                                    | No.<br>(B)                    | %<br>(B/A) | No.<br>(C)           | %<br>(C/A) |                                     | No.<br>(E)                    | %<br>(E/D) | No.<br>(F)           | %<br>(F/D) |
| <b>Employees</b>            |                                    |                               |            |                      |            |                                     |                               |            |                      |            |
| <b>Permanent</b>            |                                    |                               |            |                      |            |                                     |                               |            |                      |            |
| Male                        |                                    |                               |            |                      |            |                                     |                               |            |                      |            |
| Female                      |                                    |                               |            |                      |            |                                     |                               |            |                      |            |
| <b>Other than Permanent</b> |                                    |                               |            |                      |            |                                     |                               |            |                      |            |
| Male                        |                                    |                               |            |                      |            |                                     |                               |            |                      |            |
| Female                      |                                    |                               |            |                      |            |                                     |                               |            |                      |            |



| Category                        | FY _____<br>Current Financial Year |                                     |            |                         |            | FY _____<br>Previous Financial Year |                                     |            |                         |            |
|---------------------------------|------------------------------------|-------------------------------------|------------|-------------------------|------------|-------------------------------------|-------------------------------------|------------|-------------------------|------------|
|                                 | Total<br>(A)                       | On Health<br>and safety<br>measures |            | On Skill<br>upgradation |            | Total<br>(D)                        | On Health<br>and safety<br>measures |            | On Skill<br>upgradation |            |
|                                 |                                    | No.<br>(B)                          | %<br>(B/A) | No.<br>(C)              | %<br>(C/A) |                                     | No.<br>(E)                          | %<br>(E/D) | No.<br>(F)              | %<br>(F/D) |
| <b>Workers</b>                  |                                    |                                     |            |                         |            |                                     |                                     |            |                         |            |
| <b>Permanent</b>                |                                    |                                     |            |                         |            |                                     |                                     |            |                         |            |
| Male                            |                                    |                                     |            |                         |            |                                     |                                     |            |                         |            |
| Female                          |                                    |                                     |            |                         |            |                                     |                                     |            |                         |            |
| <b>Other than<br/>Permanent</b> |                                    |                                     |            |                         |            |                                     |                                     |            |                         |            |
| Male                            |                                    |                                     |            |                         |            |                                     |                                     |            |                         |            |
| Female                          |                                    |                                     |            |                         |            |                                     |                                     |            |                         |            |

3. Details of remuneration/salary/wages

a. Median remuneration / wages:

|  | Male   |   | Female |   |
|--|--------|---|--------|---|
|  | Number | Median remuneration/<br>salary/ wages of<br>respective category | Number | Median<br>remuneration/salary/<br>wages of respective<br>category |
| Board of<br>Directors (BoD)            |        |   |        |   |
| Key Managerial<br>Personnel            |        |   |        |   |
| Employees<br>other than BoD<br>and KMP |        |   |        |   |
| Workers                                |        |   |        |   |

b. Gross wages paid to females as % of total wages paid by the entity, in the following format:

|  | FY _____<br>Current Financial Year | FY _____<br>Previous Financial Year |
|--|------------------------------------|-------------------------------------|
| Gross wages paid to fe-<br>males as % of total wages |                                    |                                     |
|  |                                    |                                     |

## Annexures

4. Do you have a focal point (Individual/ Committee) responsible for addressing human rights impacts or issues caused or contributed to by the business? (Yes/No)
5. Describe the internal mechanisms in place to redress grievances related to human rights issues.
6. Number of Complaints on the following made by employees and workers:

|                                   | FY _____<br>(Current Financial Year) |                                       |         | FY _____<br>(Current Financial Year) |                                       |         |
|-----------------------------------|--------------------------------------|---------------------------------------|---------|--------------------------------------|---------------------------------------|---------|
|                                   | Filed during the year                | Pending resolution at the end of year | Remarks | Filed during the year                | Pending resolution at the end of year | Remarks |
| Sexual Harassment                 |                                      |                                       |         |                                      |                                       |         |
|                                   |                                      |                                       |         |                                      |                                       |         |
| Discrimination at workplace       |                                      |                                       |         |                                      |                                       |         |
| Child Labour                      |                                      |                                       |         |                                      |                                       |         |
| Forced Labour/ Involuntary Labour |                                      |                                       |         |                                      |                                       |         |
| Wages                             |                                      |                                       |         |                                      |                                       |         |
| Other human rights related issues |                                      |                                       |         |                                      |                                       |         |

7. Complaints filed under the Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013, in the following format:

|   | FY _____<br>Current Financial Year | FY _____<br>Previous Financial Year |
|---|------------------------------------|-------------------------------------|
| Total Complaints reported under Sexual Harassment on of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 (POSH) |                                    |                                     |
| Complaints on POSH as a % of female employees / workers   |                                    |                                     |
| Complaints on POSH upheld   |                                    |                                     |

8. Mechanisms to prevent adverse consequences to the complainant in discrimination and harassment cases.
9. Do human rights requirements form part of your business agreements and contracts? **(Yes/ No)**
10. Assessments for the year:

|                             | <b>% of your plants and offices that were assessed (by entity or statutory authorities or third parties)</b> |
|-----------------------------|--|
| Child labour                |  |
| Forced/involuntary labour   |  |
| Sexual harassment           |  |
| Discrimination at workplace |  |
| Wages                       |  |
| Others – please specify     |  |

11. Provide details of any corrective actions taken or underway to address significant risks / concerns arising from the assessments at Question 10 above.

### **Leadership Indicators**

1. Details of a business process being modified / introduced as a result of addressing human rights grievances/complaints.
2. Details of the scope and coverage of any Human rights due-diligence conducted.
3. Is the premise/office of the entity accessible to differently abled visitors, as per the requirements of the Rights of Persons with Disabilities Act, 2016?
4. Details on assessment of value chain partners:

|                                  | <b>% of value chain partners (by value of business done with such partners) that were assessed</b> |
|----------------------------------|--|
| Sexual Harassment                |  |
| Discrimination at workplace      |  |
| Child Labour                     |  |
| Forced Labour/Involuntary Labour |  |
| Wages                            |  |
| Others – please specify          |  |

5. Provide details of any corrective actions taken or underway to address significant risks / concerns arising from the assessments at Question 4 above.

## Annexures

### PRINCIPLE 6: Businesses should respect and make efforts to protect and restore the environment

#### Essential Indicators

1. Details of total energy consumption (in Joules or multiples) and energy intensity, in the following format:

| Parameter   | FY _____<br>(Current Financial Year) | FY _____<br>(Previous Financial Year) |
|---|--------------------------------------|---------------------------------------|
| <b>From renewable sources</b>   |                                      |                                       |
| Total electricity consumption (A)   |                                      |                                       |
| Total fuel consumption (B)  |                                      |                                       |
| Energy consumption through other sources (C)  |                                      |                                       |
| <b>Total energy consumed from renewable sources (A+B+C)</b>                                 |                                      |                                       |
| <b>From non-renewable sources</b>   |                                      |                                       |
| Total electricity consumption (D)   |                                      |                                       |
| Total fuel consumption (E)  |                                      |                                       |
| Energy consumption through other sources (F)  |                                      |                                       |
| <b>Total energy consumed from non-renewable sources (D+E+F)</b>                             |                                      |                                       |
| <b>Total energy consumed (A+B+C+D+E+F)</b>  |                                      |                                       |
| Energy intensity per rupee of turnover<br>(Total energy consumed / Revenue from operations) |                                      |                                       |
| <b>Energy intensity per rupee of turnover adjusted for Purchasing Power Parity (PPP)</b>    |                                      |                                       |
| (Total energy consumed / Revenue from operations adjusted for PPP)                          |                                      |                                       |
| <b>Energy intensity in terms of physical output</b>   |                                      |                                       |
| Energy intensity (optional) – the relevant metric may be selected by the entity             |                                      |                                       |

**Note:** Indicate if any independent assessment/ evaluation/assurance has been carried out by an external agency? (Y/N) If yes, name of the external agency.

2. Does the entity have any sites / facilities identified as designated consumers (DCs) under the Performance, Achieve and Trade (PAT) Scheme of the Government of India? (Y/N) If yes, disclose whether targets set under the PAT scheme have been achieved. In case targets have not been achieved, provide the remedial action taken, if any.
3. Provide details of the following disclosures related to water, in the following format:

| Parameter   | FY _____<br>(Current Financial Year) | FY _____<br>(Previous Financial Year) |
|---|--------------------------------------|---------------------------------------|
| <b>Water withdrawal by source (in kilolitres)</b>   |                                      |                                       |
| (i) Surface water   |                                      |                                       |
| (ii) Groundwater  |                                      |                                       |
| (iii) Third party water   |                                      |                                       |
| (iv) Seawater / desalinated water   |                                      |                                       |
| (v) Others  |                                      |                                       |
| <b>Total volume of water withdrawal (in kilolitres) (i + ii + iii + iv + v)</b>   |                                      |                                       |
| <b>Total volume of water consumption (in kilolitres)</b>  |                                      |                                       |
| <b>Water intensity per rupee of turnover</b><br>(Total water consumption / Revenue from operations)   |                                      |                                       |
| <b>Water intensity per rupee of turnover adjusted for Purchasing Power Parity (PPP)</b><br>(Total water consumption / Revenue from operations adjusted for PPP) |                                      |                                       |
| <b>Water intensity in terms of physical output</b>  |                                      |                                       |
| <b>Water intensity (optional)</b> – the relevant metric may be selected by the entity   |                                      |                                       |

**Note:** Indicate if any independent assessment/ evaluation/assurance has been carried out by an external agency? (Y/N) If yes, name of the external agency.

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4. Provide the following details related to water discharged:

| Parameter  | FY _____<br>(Current Financial Year) | FY _____<br>(Previous Financial Year) |
|--|--------------------------------------|---------------------------------------|
| <b>Water discharge by destination and level of treatment (in kilolitres)</b> |                                      |                                       |
| (i) To Surface water   |                                      |                                       |
| - No treatment   |                                      |                                       |
| - With treatment – please specify level of treatment                         |                                      |                                       |
| (ii) To Groundwater  |                                      |                                       |
| - No treatment   |                                      |                                       |
| - With treatment – please specify level of treatment                         |                                      |                                       |
| (iii) To Seawater  |                                      |                                       |
| - No treatment   |                                      |                                       |
| - With treatment – please specify level of treatment                         |                                      |                                       |
| (iv) Sent to third-parties   |                                      |                                       |
| - No treatment   |                                      |                                       |
| - With treatment – please specify level of treatment                         |                                      |                                       |
| (v) Others   |                                      |                                       |
| - No treatment   |                                      |                                       |
| - With treatment – please specify level of treatment                         |                                      |                                       |
| Total water discharged (in kilolitres)                                       |                                      |                                       |

**Note:** Indicate if any independent assessment/ evaluation/assurance has been carried out by an external agency? (Y/N) If yes, name of the external agency.

5. Has the entity implemented a mechanism for Zero Liquid Discharge? If yes, provide details of its coverage and implementation.

6. Please provide details of air emissions (other than GHG emissions) by the entity, in the following format:

| <b>Parameter</b>                    | <b>Please specify unit</b> | <b>FY _____<br/>(Current Financial Year)</b> | <b>FY _____<br/>(Previous Financial Year)</b> |
|-------------------------------------|----------------------------|--|---|
| NOx                                 |                            |  |   |
| SOx                                 |                            |  |   |
| Particulate matter (PM)             |                            |  |   |
| Persistent organic pollutants (POP) |                            |  |   |
| Volatile organic compounds (VOC)    |                            |  |   |
| Hazardous air pollutants (HAP)      |                            |  |   |
| Others – please specify             |                            |  |   |

**Note:** Indicate if any independent assessment/ evaluation/assurance has been carried out by an external agency? (Y/N) If yes, name of the external agency.

7. Provide details of greenhouse gas emissions (Scope 1 and Scope 2 emissions) & its intensity, in the following format:

| <b>Parameter</b>  | <b>Unit</b>                                 | <b>FY _____<br/>(Current Financial Year)</b> | <b>FY _____<br/>(Previous Financial Year)</b> |
|---|---|--|---|
| <b>Total Scope 1 emissions</b><br>(Break-up of the GHG into CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, HFCs, PFCs, SF <sub>6</sub> , NF <sub>3</sub> , if available) | Metric tonnes of CO <sub>2</sub> equivalent |  |   |
| <b>Total Scope 2 emissions</b><br>(Break-up of the GHG into CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, HFCs, PFCs, SF <sub>6</sub> , NF <sub>3</sub> , if available) | Metric tonnes of CO <sub>2</sub> equivalent |  |   |
| <b>Total Scope 1 and Scope 2 emission intensity per rupee of turnover</b><br>(Total Scope 1 and Scope 2 GHG emissions / Revenue from operations)                                |   |  |   |

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| Parameter  | Unit | FY _____<br>(Current Financial Year) | FY _____<br>(Previous Financial Year) |
|--|------|--------------------------------------|---------------------------------------|
| <b>Total Scope 1 and Scope 2 emission intensity per rupee of turnover adjusted for Purchasing Power Parity (PPP)</b><br>(Total Scope 1 and Scope 2 GHG emissions / Revenue from operations adjusted for PPP) |      |                                      |                                       |
| <b>Total Scope 1 and Scope 2 emission intensity in terms of physical output</b>  |      |                                      |                                       |
| <b>Total Scope 1 and Scope 2 emission intensity (optional)</b> – the relevant metric may be selected by the entity   |      |                                      |                                       |

**Note:** Indicate if any independent assessment/ evaluation/assurance has been carried out by an external agency? (Y/N) If yes, name of the external agency.

8. Does the entity have any project related to reducing Green House Gas emission? If Yes, then provide details.
9. Provide details related to waste management by the entity, in the following format:

| Parameter   | FY _____<br>(Current Financial Year) | FY _____<br>(Previous Financial Year) |
|---|--------------------------------------|---------------------------------------|
| <b>Total Waste generated (in metric tonnes)</b>           |                                      |                                       |
| Plastic waste <b>(A)</b>                                  |                                      |                                       |
| E-waste <b>(B)</b>  |                                      |                                       |
| Bio-medical waste <b>(C)</b>                              |                                      |                                       |
| Construction and demolition waste <b>(D)</b>              |                                      |                                       |
| Battery waste <b>(E)</b>                                  |                                      |                                       |
| Radioactive waste <b>(F)</b>                              |                                      |                                       |
| Other Hazardous waste. Please specify, if any. <b>(G)</b> |                                      |                                       |

| Parameter   | FY _____<br>(Current Financial Year) | FY _____<br>(Previous Financial Year) |
|---|--------------------------------------|---------------------------------------|
| Other Non-hazardous waste generated<br><b>(H)</b> . Please specify, if any.<br>(Break-up by composition i.e. by materials relevant to the sector)             |                                      |                                       |
| <b>Total (A+B + C + D + E + F + G + H)</b>  |                                      |                                       |
| <b>Waste intensity per rupee of turnover</b><br>(Total waste generated / Revenue from operations)   |                                      |                                       |
| <b>Waste intensity per rupee of turnover adjusted for Purchasing Power Parity (PPP)</b><br>(Total waste generated / Revenue from operations adjusted for PPP) |                                      |                                       |
| <b>Waste intensity in terms of physical output</b>  |                                      |                                       |
| <b>Waste intensity (optional)</b> – the relevant metric may be selected by the entity   |                                      |                                       |
| <b>For each category of waste generated, total waste recovered through recycling, re-using or other recovery operations (in metric tonnes)</b>                |                                      |                                       |
| <b>Category of waste</b>  |                                      |                                       |
| (i) Recycled  |                                      |                                       |
| (ii) Re-used  |                                      |                                       |
| (iii) Other recovery operations   |                                      |                                       |
| <b>Total</b>  |                                      |                                       |
| <b>For each category of waste generated, total waste disposed by nature of disposal method (in metric tonnes)</b>   |                                      |                                       |
| <b>Category of waste</b>  |                                      |                                       |
| (i) Incineration  |                                      |                                       |
| (ii) Landfilling  |                                      |                                       |
| (iii) Other disposal operations   |                                      |                                       |
| <b>Total</b>  |                                      |                                       |

**Note:** Indicate if any independent assessment/ evaluation/assurance has been carried out by an external agency? (Y/N) If yes, name of the external agency.

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10. Briefly describe the waste management practices adopted in your establishments. Describe the strategy adopted by your company to reduce usage of hazardous and toxic chemicals in your products and processes and the practices adopted to manage such wastes.
11. If the entity has operations/offices in/around ecologically sensitive areas (such as national parks, wildlife sanctuaries, biosphere reserves, wetlands, biodiversity hotspots, forests, coastal regulation zones etc.) where environmental approvals / clearances are required, please specify details in the following format:

| S. No. | Location of operations/offices | Type of operations | Whether the conditions of environmental approval / clearance are being complied with? (Y/N)<br>If no, the reasons thereof and corrective action taken, if any. |
|--------|--------------------------------|--------------------|--|
|        |                                |                    |  |
|        |                                |                    |  |

12. Details of environmental impact assessments of projects undertaken by the entity based on applicable laws, in the current financial year:

| Name and brief details of project | EIA Notification No. | Date | Whether conducted by independent external agency (Yes / No) | Results communicated in public domain (Yes / No) | Relevant Web link |
|-----------------------------------|----------------------|------|---|--|-------------------|
|                                   |                      |      |   |  |                   |
|                                   |                      |      |   |  |                   |

13. Is the entity compliant with the applicable environmental law/ regulations/ guidelines in India; such as the Water (Prevention and Control of Pollution) Act, Air (Prevention and Control of Pollution) Act, Environment protection act and rules thereunder (Y/N). If not, provide details of all such non-compliances, in the following format:

| S. No. | Specify the law/ regulation / guidelines which was not complied with | Provide details of the non-compliance | Any fines / penalties / action taken by regulatory agencies such as pollution control boards or by courts | Corrective action taken, if any |
|--------|--|---------------------------------------|---|---------------------------------|
|        |  |                                       |   |                                 |
|        |  |                                       |   |                                 |

**Leadership Indicators**

1. Water withdrawal, consumption and discharge in areas of water stress (in kilolitres):

For each facility / plant located in areas of water stress, provide the following information:

- (i) Name of the area
- (ii) Nature of operations
- (iii) Water withdrawal, consumption and discharge in the following format:

| Parameter  | FY _____<br>(Current Financial<br>Year) | FY _____<br>(Previous Financial<br>Year) |
|--|---|--|
| <b>Water withdrawal by source (in kilolitres)</b>  |   |  |
| (i) Surface water  |   |  |
| (ii) Groundwater   |   |  |
| (iii) Third party water  |   |  |
| (iv) Seawater / desalinated water  |   |  |
| (v) Others   |   |  |
| <b>Total volume of water withdrawal (in kilolitres)</b>                                      |   |  |
| <b>Total volume of water consumption (in kilolitres)</b>                                     |   |  |
| <b>Water intensity per rupee of turnover</b><br>(Water consumed / turnover)                  |   |  |
| <b>Water intensity</b> <i>(optional)</i> – the relevant metric may be selected by the entity |   |  |
| <b>Water discharge by destination and level of treatment (in kilolitres)</b>                 |   |  |
| (i) Into Surface water   |   |  |
| - No treatment   |   |  |
| - With treatment – please specify level of treatment   |   |  |
| (ii) Into Groundwater  |   |  |
| - No treatment   |   |  |
| - With treatment – please specify level of treatment   |   |  |

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|  |  |  |
|--|--|--|
| (iii) Into Seawater                                  |  |  |
| - No treatment                                       |  |  |
| - With treatment – please specify level of treatment |  |  |
| (ii) Sent to third-parties                           |  |  |
| - No treatment                                       |  |  |
| - With treatment – please specify level of treatment |  |  |
| (ii) Others  |  |  |
| - No treatment                                       |  |  |
| - With treatment – please specify level of treatment |  |  |
| <b>Total water discharged (in kilolitres)</b>        |  |  |

**Note:** Indicate if any independent assessment/ evaluation/assurance has been carried out by an external agency? (Y/N) If yes, name of the external agency.

2. Please provide details of total Scope 3 emissions & its intensity, in the following format:

| Parameter   | Unit  | FY _____<br>(Current Financial Year) | FY _____<br>(Previous Financial Year) |
|---|---|--------------------------------------|---------------------------------------|
| <b>Total Scope 3 emissions</b><br>(Break-up of the GHG into CO <sub>2</sub> , CH <sub>4</sub> , N <sub>2</sub> O, HFCs, PFCs, SF <sub>6</sub> , NF <sub>3</sub> , if available) | Metric tonnes of CO <sub>2</sub> equivalent |                                      |                                       |
| <b>Total Scope 3 emissions per rupee of turnover</b>  |   |                                      |                                       |
| <b>Total Scope 3 emission intensity (optional)</b> – the relevant metric may be selected by the entity  |   |                                      |                                       |

**Note:** Indicate if any independent assessment/ evaluation/assurance has been carried out by an external agency? (Y/N) If yes, name of the external agency.

3. With respect to the ecologically sensitive areas reported at Question 11 of Essential Indicators above, provide details of significant direct & indirect impact of the entity on biodiversity in such areas along-with prevention and remediation activities.



4. If the entity has undertaken any specific initiatives or used innovative technology or solutions to improve resource efficiency, or reduce impact due to emissions / effluent discharge/ waste generated, please provide details of the same as well as outcome of such initiatives, as per the following format:

| S. No. | Initiative undertaken | Details of the initiative ( <i>Web-link, if any, may be provided along-with summary</i> ) | Outcome of the initiative |
|--------|-----------------------|---|---------------------------|
|        |                       |   |                           |
|        |                       |   |                           |

5. Does the entity have a business continuity and disaster management plan? Give details in 100 words/ web link.
6. Disclose any significant adverse impact to the environment, arising from the value chain of the entity. What mitigation or adaptation measures have been taken by the entity in this regard.
7. Percentage of value chain partners (by value of business done with such partners) that were assessed for environmental impacts.

**PRINCIPLE 7 - Businesses, when engaging in influencing public and regulatory policy, should do so in a manner that is responsible and transparent**

**Essential Indicators**

1. a. Number of affiliations with trade and industry chambers/ associations.
- b. List the top 10 trade and industry chambers/ associations (determined based on the total members of such body) the entity is a member of/ affiliated to.

| S. No. | Name of the trade and industry chambers/ associations | Reach of trade and industry chambers/ associations (State/National) |
|--------|---|---|
| 1      |   |   |
| 2      |   |   |
| 3      |   |   |
| 4      |   |   |
| 5      |   |   |
| 6      |   |   |
| 7      |   |   |
| 8      |   |   |
| 9      |   |   |
| 10     |   |   |

## Annexures

- Provide details of corrective action taken or underway on any issues related to anti-competitive conduct by the entity, based on adverse orders from regulatory authorities.

| Name of authority | Brief of the case | Corrective action taken |
|-------------------|-------------------|-------------------------|
|                   |                   |                         |
|                   |                   |                         |

## Leadership Indicators

- Details of public policy positions advocated by the entity:

| S. No. | Public policy advocated | Method resorted for such advocacy | Whether information available in public domain? (Yes/No) | Frequency of Review by Board (Annually/ Half yearly/ Quarterly/ Others – please specify) | Web Link, if available |
|--------|-------------------------|-----------------------------------|--|--|------------------------|
|        |                         |                                   |  |  |                        |
|        |                         |                                   |  |  |                        |

## PRINCIPLE 8 Businesses should promote inclusive growth and equitable development

### Essential Indicators

- Details of Social Impact Assessments (SIA) of projects undertaken by the entity based on applicable laws, in the current financial year.

| Name and brief details of project | SIA Notification No. | Date of notification | Whether conducted by independent external agency (Yes / No) | Results communicated in public domain (Yes / No) | Relevant Web link |
|-----------------------------------|----------------------|----------------------|---|--|-------------------|
|                                   |                      |                      |   |  |                   |
|                                   |                      |                      |   |  |                   |

- Describe the mechanisms to receive and redress grievances of the community.
- Percentage of input material (inputs to total inputs by value) sourced from suppliers:

|  | FY _____<br>Current Financial Year | FY _____<br>Previous Financial Year |
|--|------------------------------------|-------------------------------------|
| Directly sourced from MSMEs/ small producers |                                    |                                     |
| Directly from within India                   |                                    |                                     |

5. Job creation in smaller towns – Disclose wages paid to persons employed (including employees or workers employed on a permanent or non-permanent / on contract basis) in the following locations, as % of total wage cost

| <b>Location</b> | <b>FY _____<br/>Current Financial Year</b> | <b>FY _____<br/>Previous Financial Year</b> |
|-----------------|--|---|
| Rural           |  |   |
| Semi-urban      |  |   |
| Urban           |  |   |
| Metropolitan    |  |   |

(Place to be categorized as per RBI Classification System - rural / semi-urban / urban / metropolitan)

### Leadership Indicators

1. Provide details of actions taken to mitigate any negative social impacts identified in the Social Impact Assessments (Reference: Question 1 of Essential Indicators above):

| <b>Details of negative social impact identified</b> | <b>Corrective action taken</b> |
|---|--------------------------------|
|   |                                |
|   |                                |

2. Provide the following information on CSR projects undertaken by your entity in designated aspirational districts as identified by government bodies:

| <b>S. No.</b> | <b>State</b> | <b>Aspirational District</b> | <b>Amount spent (In INR)</b> |
|---------------|--------------|------------------------------|------------------------------|
|               |              |                              |                              |
|               |              |                              |                              |

3. (a) Do you have a preferential procurement policy where you give preference to purchase from suppliers comprising marginalized /vulnerable groups? (Yes/No)  
 (b) From which marginalized /vulnerable groups do you procure?  
 (c) What percentage of total procurement (by value) does it constitute?
4. Details of the benefits derived and shared from the intellectual properties owned or acquired by your entity (in the current financial year), based on traditional knowledge:

| <b>S. No.</b> | <b>Intellectual Property based on traditional knowledge</b> | <b>Owned/ Acquired (Yes/No)</b> | <b>Benefit shared (Yes / No)</b> | <b>Basis of calculating benefit share</b> |
|---------------|---|---------------------------------|----------------------------------|---|
|               |   |                                 |                                  |   |
|               |   |                                 |                                  |   |

5. Details of corrective actions taken or underway, based on any adverse order in intellectual property related disputes wherein usage of traditional knowledge is involved.

| <b>Name of authority</b> | <b>Brief of the case</b> | <b>Corrective action taken</b> |
|--------------------------|--------------------------|--------------------------------|
|                          |                          |                                |
|                          |                          |                                |

## Annexures

### 6. Details of beneficiaries of CSR Projects:

| S. No. | CSR Project | No. of persons benefitted from CSR Projects | % of beneficiaries from vulnerable and marginalized groups |
|--------|-------------|---|--|
|        |             |   |  |
|        |             |   |  |

## PRINCIPLE 9 Businesses should engage with and provide value to their consumers in a responsible manner

### Essential Indicators

- Describe the mechanisms in place to receive and respond to consumer complaints and feedback.
- Turnover of products and/ services as a percentage of turnover from all products/service that carry information about:

|   | As a percentage to total turnover |
|---|-----------------------------------|
| Environmental and social parameters relevant to the product |                                   |
| Safe and responsible usage                                  |                                   |
| Recycling and/or safe disposal                              |                                   |

- Number of consumer complaints in respect of the following:

|                                | FY ____<br>(Current Financial Year) |                                   | Remarks | FY ____<br>(Previous Financial Year) |                                   | Remarks |
|--------------------------------|-------------------------------------|-----------------------------------|---------|--------------------------------------|-----------------------------------|---------|
|                                | Received during the year            | Pending resolution at end of year |         | Received during the year             | Pending resolution at end of year |         |
| Data privacy                   |                                     |                                   |         |                                      |                                   |         |
| Advertising                    |                                     |                                   |         |                                      |                                   |         |
| Cyber-security                 |                                     |                                   |         |                                      |                                   |         |
| Delivery of essential services |                                     |                                   |         |                                      |                                   |         |
| Restrictive Trade Practices    |                                     |                                   |         |                                      |                                   |         |
| Unfair Trade Practices         |                                     |                                   |         |                                      |                                   |         |
| Other                          |                                     |                                   |         |                                      |                                   |         |

4. Details of instances of product recalls on account of safety issues:

|                   | Number | Reasons for recall |
|-------------------|--------|--------------------|
| Voluntary recalls |        |                    |
| Forced recalls    |        |                    |

5. Does the entity have a framework/ policy on cyber security and risks related to data privacy? (Yes/No) If available, provide a web-link of the policy.
6. Provide details of any corrective actions taken or underway on issues relating to advertising, and delivery of essential services; cyber security and data privacy of customers; re-occurrence of instances of product recalls; penalty / action taken by regulatory authorities on safety of products / services.
7. Provide the following information relating to data breaches:
  - a. Number of instances of data breaches
  - b. Percentage of data breaches involving personally identifiable information of customers
  - c. Impact, if any, of the data breaches

**Leadership Indicators**

1. Channels / platforms where information on products and services of the entity can be accessed (provide web link, if available).
2. Steps taken to inform and educate consumers about safe and responsible usage of products and/or services.
3. Mechanisms in place to inform consumers of any risk of disruption/discontinuation of essential services.
4. Does the entity display product information on the product over and above what is mandated as per local laws? (Yes/No/Not Applicable) If yes, provide details in brief. Did your entity carry out any survey with regard to consumer satisfaction relating to the major products / services of the entity, significant locations of operation of the entity or the entity as a whole? (Yes/No)



## **Annexure-VI Green Hydrogen Standard**



**No. 353/35/2022-NT**  
**Ministry of New and Renewable Energy**  
**National Green Hydrogen Mission**

Atal Akshay Urja Bhawan, Lodhi Road  
New Delhi 110003

18 August 2023

**OFFICE MEMORANDUM**

**Subject:** Green Hydrogen Standard for India.

The Government of India has approved the National Green Hydrogen Mission. For the purpose of the mission and its ensuing policies and programmes, following are specified:

- (1) **“Green Hydrogen”** shall mean Hydrogen produced using renewable energy, including, but not limited to, production through electrolysis or conversion of biomass. Renewable energy also includes such electricity generated from renewable sources which is stored in an energy storage system or banked with the grid in accordance with applicable regulations.

**Whereas, for Green Hydrogen produced through electrolysis:-**  
The non-biogenic greenhouse gas emissions arising from water treatment, electrolysis, gas purification and drying and compression of hydrogen shall not be greater than 2 kilogram of carbon dioxide equivalent per kilogram of Hydrogen (kg CO<sub>2</sub> eq/kg Hydrogen), taken as an average over last 12-month period.

**Whereas, for Green Hydrogen produced through conversion of biomass:-**The non-biogenic greenhouse gas emissions arising from biomass processing, heat/steam generation, conversion of biomass to hydrogen, gas purification and drying and compression of hydrogen shall not be greater than 2 kilogram of carbon dioxide equivalent per kilogram of Hydrogen (kg CO<sub>2</sub> eq/kg Hydrogen) taken as an average over last 12-month period.

- (2) A detailed methodology for measurement, reporting, monitoring, onsite verification, and certification of green hydrogen and its derivatives shall be specified by the Ministry of New and Renewable Energy.
- (3) Bureau of Energy Efficiency shall be the Nodal Authority for accreditation of agencies for the monitoring, verification and certification for Green Hydrogen production projects.

This issues with the approval of the Hon'ble Minister of New and Renewable Energy and Power.

  
Sujit Pillai  
Scientist 'F'

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