ICMAI
THE INSTITUTE OF
COST ACCOUNTANTS OF INDIA
भारतीय लागत लेखाकार संस्थान
Statutory Body under an Act of Parliament
(Under the jurisdiction of Ministry of Corporate Affairs)

ICMAI SUSTAINABILITY STANDARDS ISS1 & ISS2 WITH GUIDANCE NOTES

BEHIND EVERY SUCCESSFULL BUSINESS DECISION, THERE IS ALWAYS A CMA

॥ सुखिनोभवंतु ॥

A Monthly Newsletter of Sustainability Standards Board

VK Webinar Series of the Sustainability Standards Board

About The Institute

The Institute of Cost Accountants of India is astatutory body set up under an Act of Parliament in the year 1959. The Institute as a part of its obligation, regulates the profession of Cost and Management Accountancy, enrolls students for its courses, provides coaching facilities to the students, organises professional developmentprogrammes for the members and undertakes research programmes in the field of Costand Management Accountancy. The Institute pursues the vision of cost competitiveness, cost management, efficient use of resources and structured approach to cost accounting as the key drivers of the profession. In today's world, the profession of conventional accounting and auditing has taken a back seat and cost and management accountants are increasingly contributing toward the management of scarce resources and apply strategic decisions. This has opened up further scope and tremendous opportunities for cost accountants in India and abroad.

After an amendment passed by Parliament of India, the Institute is now renamed as ***"The Institute of Cost Accountants of India"*** from ***"The Institute of Cost and Works Accountants of India"***. This step is aimed towards synergising with the global management accounting bodies, sharing the best practices which will be useful to large number of transnational Indian companies operating from India and abroad to remain competitive. With the current emphasis on management of resources, the specialized knowledge of evaluating operating efficiency and strategic management the professionals are known as ***"Cost and Management Accountants (CMAs)"***. The Institute is the largest Cost & Management Accounting body in the world, having approximately 5,00,000 students and 1,00,000 members all over the globe. The Institution headquartered at New Delhi operates through four regional councils at Kolkata, Delhi, Mumbai and Chennai and 112 Chapters situated at important cities in the country as well as 11 Overseas Centres. It is under the administrative control of Ministry of Corporate Affairs, Government of India.

First Edition: January, 2026

Department: Sustainability Standards Board

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Website: www.icmai.in

Price: ₹ **100/-**

Published by:
The Institute of Cost Accountants of India,
CMA Bhawan, 3, Institutional Area, Lodhi Road,
New Delhi - 110003

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These instructions are dynamic in nature and subject to change. Readers are encouraged to refer to the relevant official sources and the Institute's website for the latest updates. While every effort has been made to ensure the accuracy of the information at the time of publication, the publisher accepts no responsibility for any errors or omissions. Any inadvertent errors or omissions noticed may kindly be brought to our attention at ssb@icmai.in.

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PRESIDENT MESSAGE

The Institute of Cost Accountants of India (ICMAI) introduces Sustainability Standards ISS1 and ISS2, representing a significant advancement in integrating sustainability reporting with cost and management accounting practices tailored to the Indian context. These standards align with international frameworks such as IFRS S1 and S2, focusing on disclosures related to sustainability risks, opportunities, climate impacts, governance, strategy and metrics to aid stakeholder assessments of entity performance and prospects.

ISS1 establishes general requirements for sustainability disclosures, encompassing materiality, value chain analysis, scenario planning and principles including fair presentation and verifiability. ISS2 addresses climate-related disclosures, covering physical and transition risks, Scope 1-3 emissions and resilience strategies with effectiveness from August 1, 2025, for BRSR reporting in FY 2025-26. Guidance notes offer practical implementation tools, incorporating cost management techniques like Resource Consumption Models and Activity-Based Management.

These standards emerged from consultations with top listed companies, ACCA, GRI India, and SEBI nominees, promoting uniform reporting, risk management across short, medium & long terms and alignment with India's sustainable development goals. The Sustainability Standards Board, chaired by CMA Dr. Ashish P. Thatte, has integrated stakeholder feedback to ensure practical applicability.

Entities apply these standards to enhance ESG disclosures under BRSR frameworks, with future assurance standards planned to bolster verification processes. Feedback and suggestions may be directed to ssb@icmai.in.

Wishing everyone continued learning and collaboration in the journey ahead.

Jai Hind!

CMA TCA Srinivasa Prasad
President, ICMAI
Date: 19th January 2026

VICE PRESIDENT MESSAGE

The Institute of Cost Accountants of India (ICMAI) presents Sustainability Standards ISS1 and ISS2 establishing authoritative guidance by integrating sustainability reporting with cost and management accounting disciplines. These standards empower Cost Accountants to deliver precise quantification of environmental, social, and governance (ESG) impacts through established methodologies.

Meticulously crafted, these standards address definitions, principles, governance, strategy, risk identification, and measurement processes. They cover cash flow impacts, metrics, targets, and transparent disclosure requirements—all refined through extensive feedback from members, regulators, and practitioners to complement and enhance BRSR reporting frameworks.

The accompanying Guidance Notes provide industry-specific impact analyses, practical case studies, scenario analyses, and GHG emissions protocols. Furthermore, they explore the application of AI and machine learning in climate reporting, equipping stakeholders to navigate ESG challenges while anticipating periodic revisions to address evolving global dynamics.

These standards position ICMAI members as principal advisors for ESG strategy formulation, transition planning, and comprehensive risk assessment. By aligning professional competencies with national sustainability imperatives, the Institute promotes verifiable performance measurement and inclusive economic advancement.

Contributions toward standards refinement can be addressed to ssb@icmai.in. Capacity enhancement programs will commence proximate to standard effective date.

CMA Neeraj D. Joshi
Vice-President, ICMAI

CHAIRMAN MESSAGE

The Sustainability Standards Board of ICMAI is pleased to introduce the ICMAI Sustainability Standards ISS1 and ISS2, tailored to the Indian context and aligned with Cost Accounting Standards. These standards focus on general requirements for sustainability-related information and climate risk disclosures, incorporating cost and management accounting dimensions. Developed after incorporating feedback from stakeholders, including top 100 listed companies, ACCA, GRI India, and members, these standards are industry-agnostic and revolve around risks, impact, and opportunities affecting an entity's performance and cash flows. By adopting these standards, companies can enhance their sustainability reporting and contribute to India's sustainable development goals.

These standards are carved out of international standards IFRS S1 and S2, with a management flavour, ensuring relevance and applicability in the Indian business landscape. We appreciate the efforts of the Council of the Institute, SSB Members particularly CMA Anuradha Dhavalikar & CS A Sekar and CMA (Dr.) S.K. Gupta, MD & CEO of Registered Valuers Organization of ICMAI, for their valuable contributions. We have also taken stakeholders comments including top 100 listed Companies along with international bodies like ACCA and GRI India. The valuable inputs provided by Ms. Evelyn Isioye, Regional Lead, Policy & Insights – India & Africa, ACCA are duly considered and incorporated. The publication serves as a guide to understanding the concept, and the Guidance Note is a helpful tool for practitioners. We are committed to promoting best practices in India and will soon introduce assurance standards as part of our ongoing journey, empowering companies to integrate sustainability into their core strategy and decision-making processes. We consider the inputs of members and other stakeholders in our endeavour to constantly improve the contents of the guidance note. Your suggestions can be communicated to the SSB Secretariat through e-mail – ssb@icmai.in

Happy reading!

CMA (Dr.) Ashish P.Thatte
Chairman, Sustainability Standards Board
The Institute of Cost Accountants of India (ICMAI)

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ICMAI Sustainability Standard (ISS 1)

General Requirements for Disclosure of Sustainability-related Information

The following is the ICMAI Sustainability Standard on General Requirements for Disclosure of Sustainability-related Information (ISS1) issued by the Council of the Institute of Cost Accountants of India.

The standard is in conformity with the prevailing regulatory framework from time to time. However, if due to subsequent changes in the regulatory framework a particular Standard or any part thereof becomes inconsistent with the provisions in the regulatory framework, the provisions as per the regulatory framework prevailing then shall be applicable notwithstanding what is stated in this Standard.

1. Introduction

This Standard deals with General Requirements for Disclosure of Sustainability- related Information which an entity is required to disclose about its sustainability-related risks and opportunities, as well as their impact that is useful to stakeholders.

2. Objective

The objective of this Standard is to bring uniformity and consistency in disclosing information about an entity's sustainability-related risks and opportunities as well as their overall impact that could be expected to affect the entity's existence, performance, cash flows and prospects over the short, medium and long term.

3. Scope

An entity shall apply this Standard in preparing and reporting sustainability- related disclosures.

4. Definitions

The following terms are being used in this standard with the meaning specified.

4.1 Business model - An entity's system of transforming inputs through its functions, activities and processes into outputs and outcomes that aims to fulfil the entity's strategic objectives and purposes and creates value for the stakeholders.

4.2 Value chain - A value chain comprises of full chain of an entity's activities in creating a product or service -- from initial receipt of materials and/or services through its delivery to market. The value chain- framework encompasses entire range of interactions, transactions, resources and relationships connected with the entity's business model. This includes and encompasses all inbound and upstream operations, operations within the entity, all outbound and downstream logistics, marketing and sales, and services intertwined with procurement, human resource management, research and technological development, infrastructure and financing, in the context of geographical boundaries and regulatory environments in which the entity operates.

4.3 Material information - In the context of sustainability-related disclosures, information is material if omission or misstatement of that information could reasonably be expected to lead and influence, perspective or decisions of the stakeholders based on such information.

4.4 Integrity - Integrity encompasses moral principles of highest order and involves

consistency between beliefs, decisions and actions, and continued adherence to values and principles.

4.5 Ethics - Ethics provides an understanding of the nature of human values, of how we ought to live, and of what constitutes right and moral conduct.

4.6 Stakeholders - A stakeholder is a person, group, or organization that has a vested interest in an entity's activities and who can directly or indirectly influence the entity's activities.

4.7 Human rights - "Human rights" means the rights relating to life, liberty, equality and dignity of the individual guaranteed under the Constitution or embodied in the International Covenants and enforceable by the Courts in India.

4.8 Scenario analysis - A structured process for identifying and assessing a potential / estimated range of outcomes and results of the current and future events under conditions of ambiguity and uncertainty.

4.9 Sustainability-related disclosures – Sustainability-related disclosures provide information about the reporting entity's sustainability- related risks- and their impact as well as sustainability-related opportunities that could reasonably be expected to affect the entity's existence, performance, cash flows and prospects over the short, medium or long term, including information about the entity's governance, strategy and risk management in relation to those risks, their impact and opportunities, and related metrics and targets.

4.10 Environment: Environment includes water, air and land and the inter-relationship which exists among and between water, air, land, and human beings, other living creatures, plants, micro-organism and property.

4.11 Environment Pollution: Environmental pollution means the presence of any environmental pollutant in the environment.

4.12 Environmental Pollutant: Environmental pollutant means any solid, liquid or gaseous substance present in such concentration which may be injurious to the environment.

4.13 Inclusive growth: Inclusive growth means economic growth, the benefits of which are distributed across the society in a fair manner, creates opportunities for all and provides insurance against negative shocks as well as collective determination of rules and practices.

5. Principles of identification and measurement

The Principles, taken together, are designed to assist the entities in disclosing about their sustainability-related risks and their impact as well as sustainability-related opportunities that is useful to stakeholders.

5.1 Fair presentation: Fair presentation requires disclosure of relevant information about sustainability-related risks and their impact as well as sustainability-related opportunities that could reasonably be expected to affect the entity's performance, prospects and cash flows in the short, medium and long term and their true representation based on complete, unbiased and accurate depiction of those sustainability-related risks, their impacts and opportunities in accordance with the principles set out in this Standard.

5.2. Accuracy: Sustainability-related information shall be accurate. The precision needed and attainable, and the factors that make information accurate, depend on the nature of the information and the nature of the matters to which it relates. For example, accuracy requires that:

5.2.1 Information is factual and is free from material error;

5.2.2 All descriptions are specific and precise;

5.2.3 Estimates, approximations and forecasts are clearly identified as such and

5.2.4 Assertions and inputs used in developing estimates, approximations and forecasts are reasonable and based on information of sufficient quality and quantity;

5.3 Verifiability: Information is verifiable if it is possible to corroborate either the information itself or the inputs used to derive it. Verifiability helps to give users confidence that information is complete, neutral and accurate.

5.4. Materiality: An entity shall disclose material information about the sustainability-related risks and their impact as well as sustainability-related opportunities that could reasonably be expected to affect the entity's environmental, social and financial existence, performance, cash flows and prospects over the short, medium and long term. In the context of sustainability-related disclosures, information is material if omission or misstatement of that information could reasonably be expected to lead and influence decisions of the stakeholders based on such information.

5.5 Consistency: Data and assumptions used in preparing the sustainability-related disclosures shall be consistent—to the extent possible.

5.6 Assessing: The circumstances An entity shall use an approach for disclosure of sustainability- related information that is appropriate and commensurate with its context and circumstances as at the time the entity provides sustainability- related Information To assess its context and circumstances the entity shall consider:

5.6.1 The entity's exposure to sustainability- related risks and opportunities: - and

5.6.2 The skills, capabilities and resources available to the entity for the sustainability - related disclosures.

5.7 Exposure to sustainability-related risks and opportunities- An entity shall consider its exposure to sustainability-related risks and their impact as well as sustainability-related opportunities in its assessment of its context and circumstances when providing sustainability-related disclosures which may be quantitative or non –quantitative.

5.8 Assessing Impacts- Each type of sustainability risk exposure shall be treated as a distinct activity, if material and identifiable. The process for determining material sustainability risk exposure shall be as under:

5.8.1 Understand the entity's context and circumstances:

5.8.2 Identify actual and potential risks as well as opportunities and their likely impacts:

5.8.3 Assess the significance of the risks as well as opportunities and their impact:

5.8.4 Prioritize the most significant risks as well as opportunities and their impacts for sustainability reporting.

5.9 Time frame: Entities should consider the time frames used to conduct their assessments of risks and their impact as well as opportunities. The sustainability-related risks and their impact as well as sustainability-related opportunities may manifest and have implications for an entity over a longer period. It is, therefore, important for entities to consider the appropriate time frames namely short term, medium term and long term when assessing sustainability-related risks and opportunities.

5.10. Selecting inputs for scenario analysis: The inputs to the scenario analysis exercise

shall be relevant to the entity's context and circumstances. **and shall be determined by :**

i) Identifying and defining a range of scenarios, that provide a reasonable assessment and reflection of potential future sustainability related risks as well as opportunities.

ii) Evaluating the potential resiliency of entity's strategic plans to the range of scenarios.

iii) Evaluating what scenarios (and narratives) are appropriate, given the exposures?

iv) Considering appropriate input parameters, assumptions, and analytical choices based on consideration of value, cost, resource consumption, Impact analysis, Social Cost Benefit analysis, Environmental Cost analysis and Activity Based Management

5.10.1 Value to Cost Balancing - Cost incurred and value created are related to resources consumed. As a result, value measurement should be commensurate and concurrent to the incurrence of cost and its traceability.

5.10.2 Strategic Cost Analysis in Value Chain – Strategic cost analysis in value chain is a process where an entity identifies its primary and support activities that add value to its final product or service and then analyses these activities to optimize costs across the life cycle right from the raw material source till product is discarded after use.

5.10.3. Resources Consumption Model (RCM) - A resource consumption model is a decision support methodology and a tool that can facilitate assessment of resource consumption effectiveness, identifying areas for improvement, minimizing resource usage and waste and enhancing environmental, social and commercial viability of an entity.

5.10.4 Impact Analysis - Impact Analysis is a structured approach for looking at a proposed change, with a view to identifying its impact on environmental, social and financial performance and prospects as well as cash flows of the entity over the short, medium and long term.

5.10.5 Social Cost Benefit Analysis – Social Cost -Benefit analysis is an economic tool that helps organizations make decisions by evaluating the costs and benefits of a social project or policy. It is a systematic way to compare the social costs and benefits of a project and considers both financial and non-financial effects.

5.10.6. Environmental Cost Benefit Analysis - Environmental cost-benefit analysis (CBA) is the application of Cost Benefit Analysis to projects or policies that are aimed at environmental protection, improvement or actions that affect and impact the natural environment as an indirect consequence. Environmental costs can be classified in four categories - prevention cost, detection cost, internal failure cost and external failure cost.

5.10.7 Activity Based Management - Activity-based management (ABM) facilitates identification and evaluation of activities that an entity performs, leveraging activity-based costing, value chain analysis or a re-engineering initiative to improve strategic and operational decisions in an entity.

6. Process of Identification and Measurement

The Entity and Its Environment:

6.1. Describe the nature of the entity, in case of manufacturing details about its operations, business processes, major inputs, joint & by-Products and wastages and in case of services details about its various services provided along with operating processes and activities,

major inputs and wastages etc.

6.2 Describe the entity's ownership, relevant industry, regulatory, and other external factors including all the applicable reporting framework.

6.3. Description of entity's internal control mechanism.

6.4 Description of IT Architecture, Systems and programmes in use in the entity.

7. Governance

7.1 Describe the governance body(ies) (which can include the board or a Committee) responsible for oversee sustainability -related risks and their impacts as well as sustainability-related opportunities.

7.2. Describe how responsibilities for sustainability -related risks and their impacts as well as sustainability-related opportunities are reflected in mandates, role descriptions.

7.3 Describe the process how the body(ies) or individual(s) determine (s) whether appropriate skills and competencies are available to respond to sustainability - related risks and their impacts as well as sustainability-related opportunities over short, medium and long term.

7.4 Provide information about how the controls and procedures are applied to the management of sustainability-related risks and their impacts as well as and sustainability-related opportunities and their integration with governance strategies, performance, and prospects.

7.5 Describe the process by which the body(ies) or individual(s) take(s) into account sustainability - related risks and their impacts as well as sustainability-related opportunities when overseeing, reviewing and guiding the entity's strategy, major plans of action, risk management policies, annual budgets, setting the entity's performance objectives, monitoring performance and progress against goals and targets, overseeing major capital expenditures and acquisitions and progress against goals and targets.

7.6 Describe the process for delegating authority from the highest governance body to senior executives and other employees for dealing with sustainability risks and their impacts as well as sustainability-related opportunities.

7.7 Describe the Processes for consultation between stakeholders and the body(ies) or individual(s) on sustainability-related risks and their impacts as well as sustainability-related opportunities.

7.8 Describe the process by which the body(ies) or individual(s) review (s) and approve (s) the entity's sustainability report and ensure(s) that all material topics are covered.

8. Strategy

8.1 The objective of disclosures on sustainability-related strategy is to enable stakeholders to understand an entity's strategy for managing sustainability - related risks and their impact as well as sustainability-related opportunities over short, medium and long term.

8.2 Specifically, an entity shall disclose information to enable the stakeholders to understand:

8.3 The sustainability -related risks and their impact as well as sustainability- related opportunities that could reasonably be expected to affect and impact the entity's performance, prospects and cash flows over the short, medium and long term.

8.4 The current and anticipated effects of those sustainability-related risks and their impacts as well as sustainability-related opportunities on the entity's business model and value chain: -

8.5 The effects of sustainability -related risks and their impact as well as sustainability-related opportunities on the entity's strategy about adaptation, mitigation and / or its sustainability -related transition plan:

8.6 The resilience of the entity's strategy and its business model to sustainability -related changes, taking into consideration the entity's identified sustainability -related risks and their impact as well as sustainability-related opportunities over short, medium and long term:

8.7 Information about how the entity has responded to, and plans to respond to, sustainability -related risks and opportunities in its strategy and decision- making, including the entity's plans to achieve sustainability -related targets it has set internally /is required to meet by law or regulation:

8.8 Current and planned direct or indirect sustainability risk mitigation and adaptation efforts (for example, through changes in production processes or equipment, relocation of facilities, workforce adjustments, and changes in product specifications); and

8.9 Quantitative and qualitative information about the progress of plans- programs and projects as disclosed in previous reporting periods.

9. Sustainability-related risks and opportunities

An entity shall disclose information that enables stakeholders to understand the current and anticipated effects and impacts of sustainability - related risks, and their impact as well as sustainability-related opportunities on the entity's business model, strategy and value chain over short, medium and long term. The entity shall specifically provide:

9.1 A description of the current and anticipated effects and impacts of sustainability -related risk and, their impact as well as sustainability-related opportunities on the entity's business model, strategy and value chain over short, medium and long term and the key assumptions the entity made about sustainability -related policies in the jurisdictions in which the entity operates;

9.2 A description of current and anticipated direct and indirect mitigation and adaptation efforts (for example, through working with customers and supply chains);

9.3 A description of any sustainability -related transition plan the entity has formulated including information about key assumptions used in developing its transition plan, and dependencies on which the entity's transition plan relies;

9.4 A description of current and anticipated changes to the entity's business model, including its resource allocation, to address sustainability -related risks and their impact as well as sustainability-related opportunities over short, medium and long term; and

9.5 The entity's capacity to adjust or adapt its strategy and business model to emerging sustainability related changes over the short, medium and long term, including the availability of, and flexibility in action to address sustainability -related risks, their impacts and to take advantage of emerging sustainability -related opportunities by the entity's ability to redeploy, repurpose, upgrade or decommission existing assets;

10.Risk management

10.1 The objective of disclosures on sustainability-related risk management is to enable stakeholders to understand an entity's processes to identify, assess, priorities and monitor sustainability -related risks and their impact as well as and sustainability-related opportunities over the short, medium and long term and inform the entity's overall risk management architecture. To achieve this objective, an entity shall disclose information about:

10.2 The processes and related policies the entity uses to identify, assess, prioritize and monitor sustainability -related risks and their impact in the context and circumstances in which the entity operates including information about the inputs and parameters and the activities and processes the entity uses;

10.3 A description of how the entity assesses the nature, likelihood, magnitude effects and impacts (such as the qualitative factors, quantitative thresholds and other criteria used) associated with sustainability related risks.

10.4 A description of how the entity identifies and monitors sustainability -related risks in the context and relative to other types of risk; and

10.5 Describe how, the architecture and processes for identifying, assessing, prioritizing and monitoring sustainability -related risks and their impact as well as and sustainability-related opportunities over the short, medium and long term are integrated into the entities overall risk management architecture and process.

11. Performance, prospects and cash flows

An entity shall disclose information about:

11.1 The effects of sustainability -related risks and their impact as well as sustainability-related opportunities over the short, medium and long term on the entity's performance, prospects and cash flows;

11.2 A description of how sustainability -related risks and opportunities are included in the entity's business model and business planning; and

11.3 A description of how the entity expects its performance, prospects and cash flows to change over the short, medium and long term, given its strategy to manage sustainability -related risks and their impact as well as and sustainability-related opportunities, taking into consideration: its investment and disposal plans (for example, plans for capital expenditure, major acquisitions and divestments, joint ventures, business transformation, innovation, new business areas, and asset retirements).

12.Metrics and targets

12.1 The objective of disclosures on sustainability-related metrics and targets is to enable stakeholders to understand an entity's performance, prospects and cash flows over the short, medium and long term in relation to its sustainability -related risks and their impact as well as sustainability- related opportunities, including progress towards any sustainability - related targets it has set / is required to meet by law or regulation. To achieve this objective, an entity shall disclose:

12.2 A description of targets set by the entity/ the entity is required to meet by law or regulation, to mitigate or adapt to sustainability -related risks and their impact over the short,

medium and long term or to take advantage of sustainability -related opportunities,

12.3 A description of industry-based metrics that are associated with particular business models, activities and circumstances; and

12.4 A description whether the targets the entity has set to manage sustainability - related risks and their impact as well as sustainability-related opportunities over the short, medium and long term have been validated by a third party. In describing its targets, organizations should consider including the following

12.4.1 whether the target is absolute or intensity based;

12.4.2 time frames over which the target applies;

12.4.3 base year from which progress is measured;

12.4.4 key performance indicators used to assess progress against targets; and

12.4.5 description of the methodologies used to calculate targets and measures.

13. Judgements and Assumptions

13.1 In the process of preparing sustainability-related disclosures, an entity makes various judgements, apart from those involving estimations, that can significantly affect the context and relevance of information reported in the entity's sustainability- related disclosures.

13.2 When amounts reported in sustainability-related disclosures cannot be measured directly and can only be estimated, uncertainty in measurement arises. In some cases, an estimate involves assumptions about possible future events with uncertain outcomes. The use of reasonable estimates is an essential part of preparing sustainability-related disclosures.

14. Errors of Prior Period

14.1 Prior Period numbers shall be corrected for errors by restating them except where it is not practicable to do so.

14.2 Errors could be either omissions or misstatements or both in the case of Sustainability-related disclosures of numbers in the Prior Period. Such errors or misstatements could arise from a neglect to use or misuse of reliable relevant information which was available when the sustainability-related disclosures for that period(s) were authorized for issue and could reasonably be expected to have been obtained and considered in the preparation of those disclosures.

14.3 Changes in estimates of Prior Period arising out of information available after the sustainability-related disclosures for that period(s) were authorized for issue do not fall within the meaning of Errors dealt with by this Paragraph.

15. General requirements An entity shall apply judgement to identify information that:

15.1 is relevant to the decision-making of stakeholders; and

15.2 faithfully represents sustainability-related risks and their impact as well as sustainability-related opportunities over short, medium and long term.

16. Presentation

16.1 Information related to sustainability risk, its impact and opportunities pertaining to all Principles of BRSR except Principle 6 (Appendix 1) shall be presented as under

16.1.1 Overview of the entity's material responsible business conduct issues. This information shall be presented separately as required in Paragraph 26 of Section A - General Information of BRSR namely.

16.1.2 Specific commitments, goals and targets set by the entity with defined timelines, if any – This information shall be presented separately as required in Paragraph 5 of Section B – Management and Process Disclosures of BRSR.

16.1.3 Performance of the entity against the specific commitments, goals and targets along-with reasons in case the same are not met. - This information shall be presented separately as required in Paragraph 6 of Section B – Management and Process Disclosures of BRSR.

16.1.4 Statement by director responsible for the business responsibility report, highlighting ESG related challenges, targets and achievements- This information shall be presented separately as required in Paragraph 7 of Section B – Management and Process Disclosures of BRSR.

16.1.5 Details of the highest authority responsible for implementation and oversight of the Business Responsibility policy (ies). - This information shall be presented separately as required in Paragraph 8 of Section B – Management and Process Disclosures of BRSR.

16.1.6 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. - - This information shall be presented separately as required in Paragraph 9 of Section B – Management and Process Disclosures of BRSR.

16.2 Disclosures

16.2.1. Disclosures shall be made only where material, significant and quantifiable.

16.2.2 Disclosures should be presented in sufficient detail to enable stakeholders to assess the entity's exposure and approach to addressing sustainability-related risks and their impact.

16.2.3 Disclosures should be presented using consistent formats, language, and metrics from period to period to allow for inter-period comparisons.

16.2.4 For quantitative information, the disclosure should include an explanation of the definition and scope applied. For future-oriented data, key assumptions used should be clarified.

16.2.5 Disclosures should provide clear explanations of issues. Terms used in the disclosures should be explained or defined for a proper nderstanding by the shareholders and maintain an appropriate balance between qualitative and quantitative information.

16.2.6 Disclosures should be defined, collated, recorded, and analysed in such a way that the information reported is verifiable to ensure it is high quality.

16.2.7 Where estimates are made of future / expected sustainability related risks and their impact the basis of estimate shall be disclosed separately.

16.2.8 Any change in the methods applied for the Identification and measurement of sustainability related risks and their impact during the period covered by the BRSR report

which has a material effect on the performance, prospects and cash flows shall be disclosed. Where the effect of such change is not ascertainable wholly or partly the fact shall be indicated.

16.2.9 Related risks and their impact during the period covered by the BRSR report which has a material effect on the performance, prospects and cash flows shall be disclosed. Where the effect of such change is not ascertainable wholly or partly the fact shall be indicated.

17. Effective Date

This Sustainability Standard (ISS 1) General Requirements for Disclosure of Sustainability-related Information shall be effective from 1st August, 2025 and will apply for collation and reporting of sustainability related information by the entities covered under BRSR from the financial year 2025-26

ICMAI Sustainability Standard (ISS 2)
Climate related disclosures

The following is the ICMAI Sustainability Standard (ISS2) - Climate related disclosures issued by the Council of the Institute of Cost Accountants of India.

The standard is in conformity with the prevailing regulatory framework from time to time. However, if due to subsequent changes in the regulatory framework a particular Standard or any part thereof becomes inconsistent with the provisions in the regulatory framework, the provisions as per the regulatory framework prevailing then shall be applicable notwithstanding what is stated in this Standard -

1. Introduction:

This standard deals with the principles and methods of identification, classification, measurement and disclosure of information about an entity's climate-related risks their likely impact and opportunities that could reasonably be expected to affect the entity's existence, performance, cash flows and prospects over the short, medium and long term and how the entity manages these climate risks, their impacts, and opportunities that is useful to the stakeholders assessment of performance and prospects of the entity including providing resources.

2. Objective:

The objective of this standard is to bring uniformity and consistency in the principles and methods of identification, classification, measurement and disclosure of information about an entity's climate-related risks their likely impact and opportunities that could reasonably be expected to affect the entity's existence, performance, cash flows and prospects , over the short, medium or long term with reasonable accuracy.

3. Scope:

This standard should to be applied to that component of Sustainability Reporting which requires identification, classification, measurement and disclosure of information about an entity's climate-related risks their likely impact and opportunities. This Standard applies to:

3.1. Climate - related risks to which the entity is exposed and reasonably expected to affect the entity's existence, performance, cash flows and prospects ;including

3.1.1. Climate - related physical risks; and

3.1.2. Climate - related transition risk

3.2. Climate Related Opportunities available to the entity and reasonably be expected to affect an entity's existence, performance, cash flows and prospects.

4. Definitions:

The following terms are being used in this standard with the meaning specified.

4.1. Air Pollution- Air pollution means the presence in the atmosphere of any air pollutant.

4.2. Air Pollutant- Means any solid, liquid or gaseous substance (including noise) present in the atmosphere in such concentration as may be or tend to be injurious to human beings or

other living creatures or plants or property or environment.

4.3. Business model- An entity's system of transforming inputs through its activities into outputs and outcomes that aims to fulfil the entity's strategic objectives and purposes and create value for the stakeholders.

4.4. Value chain- A value chain comprises of full chain of an entity's activities in offering a product or service -- from initial receipt of materials through after sale market. The value chain framework encompasses entire range of interactions, transactions, resources and relationships connected with reporting entity's business model and strategic objectives encompassing inbound operations, operations, outbound logistics, marketing and sales, and service intertwined with procurement, human resource management, technological development, infrastructure and the financing, in the context of geographical, and regulatory environments in which the entity operates.

4.5. Climate-related physical risks – Means risks resulting from climate change that can be event-driven (acute physical risk) or from longer-term shifts in climatic patterns (chronic physical risk).

4.6. Climate related Transition Risks - Transitioning to a lower-carbon economy may require and involve comprehensive and radical policy, legal, technology, and market changes to deal with mitigation and adaptation requirements and efforts related to climate change. These risks may carry financial implications for an entity, due possibly to increased operating costs or asset impairment due to new or amended climate-related regulations, shifting consumer demands and the development and deployment of new technology.

4.7. Climate-related risks and opportunities – Means Climate-related risks relating to the potential negative effects of climate change on an entity's existence, performance, cash flows and prospects and cash flows over short, medium and long term. These risks are categorized as climate-related physical risks and climate- related transition risks. Climate-related opportunities refers to the positive effects and impacts arising from Efforts to mitigate and adapt to climate change.

4.8. Climate-related transition plan – Means an entity's overall strategy that lays down the entity's objectives, targets, actions or resources for its transition towards a lower-carbon economy.

4.9. CO2 equivalent - CO2 equivalent refers to the universal unit of measurement to indicate the global warming potential of each greenhouse gas, expressed in terms of the global warming potential of one unit of carbon dioxide.

4.10. Environment- Environment includes water, air and land and the inter-relationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property.

4.11. Environment Pollution- Environmental pollution means the presence in the environment of any environmental pollutant.

4.12. Environmental Pollutant- Environmental Pollutant means any solid, liquid or gaseous substance present in such concentration as may be, or tend to be, injurious to environment.

4.13. Pollution Control- Pollution Control means the control of emissions and effluents into environment. It constitutes the use of materials, processes, or practices to reduce, minimize, or eliminate the creation of pollutants or wastes. It includes practices that reduce the use of toxic or hazardous materials, energy, water, and / or other resources.

4.14. Greenhouse gases - The seven greenhouse gases listed in the Kyoto Protocol are carbon dioxide (CO2); methane (CH4); nitrous oxide (N2O); hydro fluorocarbons(HFCs); nitrogen tri fluoride (NF3); per fluorocarbons (PFCs) and sulphur hexafluoride (SF6).

4.15. Scope 1 greenhouse gas emissions- Means direct greenhouse gas emissions that occur from sources that are owned or controlled by an entity.

4.16. Scope 2 greenhouse gas emissions- Means Indirect greenhouse gas emissions from the generation of purchased or acquired electricity, steam, heating or cooling consumed by an entity. Scope 2 greenhouse gas emissions physically occur at the facility where electricity is generated.

4.17. Scope 3 greenhouse gas emissions – Means Indirect greenhouse gas emissions that occur in the value chain of an entity, including both upstream and downstream emissions. Scope 3 greenhouse gas emissions include the Scope 3 categories in the Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard (2011).

4.18. Scope 3 categories - Scope 3 greenhouse gas emissions are categorized into15 categories—as described in the Greenhouse Gas Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard (2011):

4.18.1. purchased goods and services;

4.18.2. capital goods;

4.18.3. fuel- and energy-related activities not included in Scope 1 greenhouse gas emissions or Scope 2 greenhouse gas emissions;

4.18.4. upstream transportation and distribution;

4.18.5. waste generated in operations;

4.18.6. business travel;

4.18.7 employee commuting;

4.18.8. upstream leased assets;

4.18.9. downstream transportation and distribution;

4.18.10. processing of sold products;

4.18.11. use of sold products;

4.18.12. end-of-life treatment of sold products;

4.18.13. downstream leased assets;

4.18.14. franchises; and

4.18.15. investments.

19. Soil Pollution- Soil pollution means the presence of any soil pollutant(s) in the soil which is harmful to the living beings when it crosses its threshold concentration level.

20. Soil Pollutant- Soil Pollutant is a substance which is the source of soil contamination.

21. Water pollution- Water pollution means contamination of water or alteration of the physical, chemical or biological properties of water as may, or is likely to, render such water harmful or injurious to public health or safety, or to the life and health of animals or plants or of aquatic organisms.

5. Principles of identification and measurement:

The principles, taken together, are designed to assist organizations in identification, classification and measurement of climate related risks, their impact and opportunities.

5.1. Assessing the circumstances - The approach used by an entity for climate-related scenario analysis shall be commensurate with its context and circumstances as at the time the entity provides climate-related disclosures. To assess its context and circumstances the entity shall consider:

5.1.1. The entity's exposure to climate-related risks, their respective impact and opportunities ,and

5.1.2 The skills, capabilities and resources available to the entity for the climate- related disclosures.

5.2. Exposure to climate-related risks and opportunities - An entity shall consider its exposure to climate-related risks , their impact and opportunities in its assessment of its context and circumstances while providing climate-related disclosures. This provides facilitates for determination of relevant and appropriate approach to climate-related disclosures which may be quantitative, non –quantitative.

5.3. Assessing Impacts - Each type of sustainability risk exposure shall be treated as a distinct activity, if material and identifiable. The process for determining material sustainability risk exposure shall be as under:

5.3.1. Understand the entity's context and circumstances.

5.3.2. Identify actual and potential risks and their likely impacts.

5.3.3. Assess the significance of the risks and their impact.

5.3.4. Prioritize the most significant risks and their impacts for Sustainability reporting .

5.4. Time frame - Entities should consider the time frames used to conduct their assessments of Risks, Their impact and opportunities. The impacts and opportunities associated with some of the sustainability- related risks may manifest and have implications for an entity over a longer period. It is, therefore, important for entities to consider the appropriate time frames when assessing sustainability- related risks.

5.5. Selecting inputs - The inputs selected for climate risk disclosures shall be relevant to the entity's context and circumstances, for example, to the particular activities the entity undertakes and the geographical location of those activities taking into consideration the entity's sustainability-related risks, their impact and opportunities.

5.6. Resources Consumption Model (RCM) - A resource consumption model is a decision support methodology and a tool that can facilitate assessment of resource effectiveness, Identifying areas for improvement, minimizing resource usage and waste, and Enhancing environmental viability of an entity.

5.7. Resources to Value Mapping - Resources Value Mapping aims to map and classify activities and related energy/resource consumptions including estimation of the total resources and reuse potential available, as well as their financial values.

5.8. Impact Analysis - Impact Analysis is a structured approach for looking at a proposed change,with a view to identifying its impact on environmental. Social and financial performance, prospects and cash flows of the entity over the short, medium and long term.

5.9 Environmental Cost Analysis - Environmental cost-benefit analysis (CBA) is the application of Cost Benefit Analysis to projects or policies that are aimed at environmental protection, improvement or actions that affect and impact the natural environment as an

indirect consequence. Environmental costs can be classified in four categories - prevention cost, detection cost, internal failure cost and external failure cost.

5.10 Activity Based Management - Activity-based management (ABM) facilitates identification and evaluation of activities that an entity performs, leveraging activity- based costing, value chain analysis or a re-engineering initiative to improve strategic and operational decisions in an entity.

6. Process of Identification and Measurement:

6.1. The Entity and Its Environment -

6.1.1. Describe the nature of the entity, in case of manufacturing details about its operations, business processes, major inputs, joint & by-Products and wastages and in case of services details about its various services provided along with operating processes and activities, major inputs and wastages etc.

6.1.2. Describe the entity's ownership, relevant industry, regulatory, and other external factors including the applicable cost and financial reporting framework.

6.1.3. Description of entity's internal control systems.

6.1.4. Description of IT Architecture, Systems and programs in use in the entity;

6.2 Governance

The objective of climate-related financial disclosures on governance is to enable users of general-purpose financial reports to understand the governance practices including controls an entity used to monitor, manage and oversee climate-related risks and opportunities.

6.2.1. Describe how responsibilities for climate -related risks, their impacts and opportunities are reflected in mandates, role descriptions.

6.2.2. Describe the process how the body(s) or individual(s) determines whether appropriate skills and competencies are available to respond to climate - related risks, their impacts and opportunities 6.2.3 Provide information about how the controls and procedures are applied to the management of climate-related risks, their impacts and opportunities and their integration with governance, strategies, performance, and prospects.

6.2.4. Describe the process by which the body(s) or individual(s) takes into account climate – related risks, their impacts and opportunities when overseeing, reviewing and guiding the entity's strategy, major plans of action, risk management policies, annual budgets, setting the entity's performance objectives, monitoring performance and progress against goals and targets, and overseeing major capital expenditures, acquisitions, and progress against goals and targets.

6.2.5. Describe the Process for delegating authority from the highest governance body to senior executives and other employees for dealing with Climate risks, their impacts and opportunities.

6.2.6. Describe the Processes for consultation between stakeholders and the body(s) or individual(s) on Climate risks, their impacts and opportunities.

6.2.7. Describe the process by which the body(s) or individual(s) reviews and approves the entity's climate risk disclosures and ensures that all material topics are covered.

6.3. Strategy - The objective of climate-related financial on strategy is to enable stakeholders

to understand an entity's strategy for managing climate-related risks, their impact and opportunities. Specifically, an entity shall disclose information to enable the stakeholders to understand:

6.3.1. The climate-related risks, their impact and opportunities that could reasonably be expected to affect the entity's existence, performance, prospects and cash flows over the short, medium and long term,

6.3.2. The current and anticipated effects of those climate-related risks, their impacts and opportunities on the entity's business model and value chain.

6.3.3. The effects of climate -related risks, their impact and opportunities on the entity's strategy about adaptation, mitigation and / or its sustainability -related transition plan.

6.3.4. The climate resilience of the entity's strategy and its business model to climate- related changes, taking into consideration the entity's identified climate-related risks, their impact and opportunities.

6.3.5. Information about how the entity has responded to, and plans to respond to, climate -related risks and opportunities in its strategy and decision-making, including the entity's plans to achieve climate -related targets it has set internally / required to meet by law or regulation.

6.3.6. Current and planned direct or indirect climate risk mitigation and adaptation efforts (for example, through changes in production processes or equipment, relocation of facilities, workforce adjustments, and changes in product specifications);

6.3.7. Quantitative and qualitative information about the progress of plans disclosed in previous reporting periods.

6.4. Climate-related risks and opportunities - An entity shall disclose information that enables stakeholders to understand the current and anticipated effects of climate- related risks, their impact and opportunities on the entity's business model, strategy and value chain. Specifically, the entity shall provide:

6.4.1. A description of the current and anticipated effects of climate-related risks, their impact and opportunities on the entity's business model, strategy and value chain; and the key assumptions the entity made in the analysis, including assumptions about climate-related policies in the jurisdictions in which the entity operates.

6.4.2. A description of current and anticipated direct and indirect mitigation and adaptation efforts (for example, through working with customers and supply chains);

6.4.3. A description of any climate-related transition plan the entity has made, including information about key assumptions used in developing its transition plan, and dependencies on which the entity's transition plan relies;

6.4.4. A description of current and anticipated changes to the entity's business model, including its resource allocation, to address climate-related risks, their impact and opportunities.

6.4.5. The entity's capacity to adjust or adapt its strategy and business model to climate change over the short, medium and long term, including; the availability of, and flexibility in action to address climate-related risks, their impacts and to take advantage of emerging climate-related opportunities by the entity's ability to redeploy, repurpose, upgrade or decommission existing assets.

6.5. Risk management - The objective of climate-related disclosures on risk management is to enable stakeholders to understand an entity's processes to identify, assess, priorities and

monitor climate-related risks, their impact and opportunities, including whether and how those processes are integrated into and inform the entity's overall risk management architecture: To achieve this objective, an entity shall disclose information about:

6.5.1. The processes and related policies the entity uses to identify, assess, prioritize and monitor climate -related risks and their impact in the context and circumstances in which the entity operates including information about the inputs and parameters and the activities and processes the entity uses.

6.5.2. A description of how the entity assesses the nature, likelihood, magnitude effects and impacts (such as the qualitative factors, quantitative thresholds and other criteria used); associated with climate related risks and their impact.

6.5.3. A description of how the entity identifies and monitors sustainability -related risks in the context and relative to other types of risk;

6.5.4. Describe how, the architecture and processes for identifying, assessing, prioritizing and monitoring climate-related risks, their impact and opportunities are integrated into the entity's overall risk management architecture and process. Whether the entity has changed the processes it uses for risk management compared with the previous reporting period; If yes, what are the changes made; and reasons thereof.

6.6 Performance, cash flows and prospects - An entity shall disclose information about :

6.6.1. The effects of climate-related risks, their impact and opportunities on the entity's existence,performance, cash flows and prospects.

6.6.2. A description of how climate -related risks and opportunities are included in the entity's business model and business planning.

6.6.3. A description of how the entity expects its performance , prospects and cash flows to change over time, given its strategy to manage climate-related risks, their impact and opportunities, taking into consideration: its investment and disposal plans (for example, plans for capital expenditure, major acquisitions and divestments, joint ventures, business transformation, innovation, new business areas, and asset retirements).

6.7. Metrics and targets - The objective of climate-related disclosures on metrics and targets is to enable stakeholders to understand an entity's performance, prospects and cash flows in relation to its climate-related risks, their impact and opportunities, including progress towards any climate-related targets it has set, and any targets it is required to meet by law or regulation. To achieve this objective, an entity shall disclose:

6.7.1. A description of targets set by the entity/ required to meet by law or regulation, to mitigate or adapt to climate -related risks and their impact over the short, medium and long term or take advantage of climate -related opportunities,

6.7.2. A description of industry-based metrics that are associated with particular business models, activities and circumstances.

6.7.3. Metrics, including Scope 1, 2 and 3 emissions, and targets used to assess and manage climate related risks and opportunities;

6.7.4. A description whether the targets the entity has set to manage climate-related risks their impact and opportunities have been validated by a third party;

6.7.5. In describing their targets, organizations should consider including the following whether the target is absolute or intensity based, time frames over which the target applies, base year from which progress is measured, and key performance indicators used to

assess progress against target description of the methodologies used to calculate targets and measures.

7. Judgements and Assumptions:

7.1. In the process of preparing climate-related disclosures, an entity makes various judgements, apart from those involving estimations, that can significantly affect the context and relevance of information reported in the entity's climate- related disclosures.

7.2. When amounts reported in climate-related disclosures cannot be measured directly and can only be estimated, uncertainty in measurement arises. In some cases, an estimate involves assumptions about possible future events with uncertain outcomes. The use of reasonable estimates is an essential part of preparing sustainability-related disclosures.

8. Errors of Prior period:

8.1. Prior Period numbers shall be corrected for errors by restating them except where it is not practicable to do so.

8.2. Errors could be either omissions or misstatements or both in the case of Sustainability-related disclosures of numbers in the Prior Period. Such errors or misstatements could arise from a neglect to use or misuse of reliable relevant information which was available when the sustainability-related disclosures for that period(s) were authorised for issue and could reasonably be expected to have been obtained and considered in the preparation of those disclosures.

8.3. Changes in estimates of Prior Period arising out of information available after the sustainability-related disclosures for that period(s) were authorised for issue do not fall within the meaning of Errors dealt with by this Paragraph.

9. General requirements:

An entity shall apply judgement to identify information that:

9.1. is relevant to the decision-making of stakeholders; and

9.2. faithfully represents sustainability-related risks and their impact as well as sustainability-related opportunities over short, medium and long term.

10. Presentation:

In the Business Responsibility and Sustainability Reporting (BRSR), Information relating to climate risk shall be presented as per PRINCIPLE 6: Businesses should respect and make efforts to protect and restore the environment, prescribed in the Business Responsibility and Sustainability Reporting framework as per following components (Appendix 1).

11. Disclosures:

11.1. Disclosures shall be made only where material and significant.

11.2. Disclosures should be presented in sufficient detail to enable stakeholders to ssess the entity's exposure and approach to addressing climate-related risks and their impact.

11.3. Disclosures should be presented using standardized and consistent formats, language, and metrics from period to period to allow for inter-period comparisons.

11.4. Key assumptions used for future-oriented data should be clarified.

11.5. Terms used in the disclosures should be explained or defined for a proper understanding

by the shareholders.

11.6. Disclosures should be defined, collected, recorded, and analyzed in such a way that the information reported is verifiable to ensure it is high quality.

11.7. Where estimates are made of future / expected climate related risks and their impact , the basis of estimate shall be disclosed separately.

11.8. Any change in the methods applied for the Identification and measurement of climate related risks and their impact during the period covered by the BRSR report which has a material effect on the entity's existence, performance, cash flows and prospects shall be disclosed. Where the effect of such change is not ascertainable wholly or partly the fact shall be indicated.

Effective Date This Sustainability Standard (ISS 2) Climate related disclosures shall be effective from 1st August, 2025 and will apply for collation and reporting of Climate related disclosures by the entities covered under BRSR from the financial year 2025-26.

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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 ____ *(Current Financial Year)***	**FY _____*(Previous Financial Year)***
From renewable sources		
Total electricity consumption (A)		
Total fuel consumption (B)		
Energy consumption through other sources (C)		
Total energy consumed from renewable sources (A+B+C)		
From non-renewable sources		
Total electricity consumption (D)		
Total fuel consumption (E)		
Energy consumption through other sources (F)		
Total energy consumed from non-renewable sources (D+E+F)		
Total energy consumed (A+B+C+D+E+F)		
Energy intensity per rupee of turnover (Total energy consumed / Revenue from operations)		
Energy intensity per rupee of turnover adjusted for Purchasing Power Parity (PPP) (Total energy consumed / Revenue from operations adjusted for PPP)		
Energy intensity in terms of physical output		
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.

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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 _____** ***(Current Financial Year)***	**FY _____** ***(Previous Financial Year)***
Water withdrawal by source (in kilolitres)		
(i) Surface water		
(ii) Groundwater		
(iii) Third party water		
(iv) Seawater / desalinated water		
(v) Others		
Total volume of water withdrawal (in kilolitres) (i + ii + iii + iv + v)		
Total volume of water consumption (in kilolitres)		
Water intensity per rupee of turnover (Total water consumption / Revenue from operations)		
Water intensity per rupee of turnover adjusted for Purchasing Power Parity (PPP) (Total water consumption / Revenue from operations adjusted for PPP)		
Water intensity in terms of physical output		
Water 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.

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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 ____** ***(Current Financial Year)***	**FY _____** ***(Previous Financial Year)***
Water withdrawal by source (in kilolitres)		
(i) Surface water		
(ii) Groundwater		
(iii) Third party water		
(iv) Seawater / desalinated water		
(v) Others		
Total volume of water withdrawal (in kilolitres) (i + ii + iii + iv + v)		
Total volume of water consumption (in kilolitres)		
Water intensity per rupee of turnover (Total water consumption / Revenue from operations)		
Water intensity per rupee of turnover adjusted for Purchasing Power Parity (PPP) (Total water consumption / Revenue from operations adjusted for PPP)		
Water intensity in terms of physical output		
Water 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.

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4. Provide the following details related to water discharged:

Parameter	**FY ____** ***(Current Financial Year)***	**FY _____** ***(Previous Financial Year)***
Water discharge by destination and level of treatment (in kilolitres)		
(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.

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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:

Parameter	***Please specify unit***	***FY ____ (Current Financial Year)***	***FY _____ (Previous Financial Year)***
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:

Parameter	***Unit***	***FY ____ (Current Financial Year)***	***FY _____ (Previous Financial Year)***
Total Scope 1 emissions (Break-up of the GHG into **CO2, CH4, N2O, HFCs, PFCs, SF6, NF3,** if available)	*Metric tonnes of CO2 equivalent*		
Total Scope 2 emissions (Break-up of the GHG into **CO2, CH4, N2O, HFCs, PFCs, SF6, NF3,** if available)	*Metric tonnes of CO2 equivalent*		
Total Scope 1 and Scope 2emission intensity per rupee of turnover (Total Scope 1 and Scope 2 GHG emissions/ Revenue from operations)			

Total Scope 1 and Scope 2emission intensity per rupee of turnover adjusted for Purchasing Power Parity (PPP) (Total Scope 1 and Scope 2 GHG emissions / Revenue from operations adjusted for PPP)			
Total Scope 1 and Scope 2 emission intensity in terms of physical output			
Total Scope 1 and Scope 2 emission 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.

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 ____ (Current Financial Year)***	***FY _____ (Previous Financial Year)***
Total Waste generated (in metric tonnes)		
Plastic waste ***(A)***		
E-waste ***(B)***		
Bio-medical waste ***(C)***		
Construction and demolition waste ***(D)***		
Battery waste ***(E)***		
Radioactive waste ***(F)***		
Other Hazardous waste. Please specify, if any. ***(G)***		
Other Non-hazardous waste generated ***(H).*** *Please specify, if any.* (Break-up by composition i.e. by materials relevant to the sector)		
Total (A+B + C + D + E + F + G + H)		

Waste intensity per rupee of turnover (Total waste generated / Revenue from operations)		
Waste intensity per rupee of turnover adjusted for Purchasing Power Parity (PPP) (Total waste generated / Revenue from operations adjusted for PPP)		
Waste intensity in terms of physical output		
Waste intensity*(optional)* – the relevant metric may be selected by the entity		
For each category of waste generated, total waste recovered through recycling, re-using or other recovery operations (in metric tonnes)		
Category of waste		
(i) Recycled		
(ii) Re-used		
(iii) Other recovery operations		
Total		
For each category of waste generated, total waste disposed by nature of disposal method (in metric tonnes)		
Category of waste		
(i) Incineration		
(ii) Landfilling		
(iii) Other disposal operations		
Total		

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.

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) 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 ____ *(Current Financial Year)***	**FY _____*(Previous Financial Year)***
Water withdrawal by source (in kilolitres)		

(i) Surface water		
(ii) Groundwater		
(iii) Third party water		
(iv) Seawater / desalinated water		
(v) Others		
Total volume of water withdrawal (in kilolitres)		
Total volume of water consumption (in kilolitres)		
Water intensity per rupee of turnover *(Water consumed / turnover)*		
Water intensity*(optional)* – the relevant metric may be selected by the entity		
Water discharge by destination and level of treatment (in kilolitres)		
(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		
(iii) Into 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.

2. Please provide details of total Scope 3 emissions & its intensity, in the following format:

Parameter	***Unit***	***FY ____ (Current Financial Year)***	***FY _____***

भारतीय प्रतिभूति और विनिमय बोर्ड
Securities and Exchange Board of India

			(Previous Financial Year)
Total Scope 3 emissions (Break-up of the GHG into **CO2, CH4, N2O, HFCs, PFCs, SF6, NF3,** if available)	*Metric tonnes of CO2 equivalent*		
Total Scope 3 emissions per rupee of turnover			
Total Scope 3 emission 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.

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:

Sr. No	Initiative undertaken	Details of the initiative *(Web-link, if any, may be provided along-with summary)*	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.

Guidance Note
ICMAI Sustainability Standard (ISS 1)
General Requirements for Disclosure of Sustainability-related Information

ICMAI assumes no responsibility or liability whatsoever for the content or any consequences or damages- whether direct, indirect or incidental - arising from the use of the advice or guidance contained herein. This application guidance is sector-agnostic. Users of this document are advised to exercise their own professional judgment in applying ISS 1. Where content in this Guidance appears to contradict the requirements of ISS 1, ISS 1 shall prevail.

Objective The objective of this non–authoritative Application Guidance is to support the implementation ~~activities~~ of ISS 1, preparers of Sustainability-related Reports or Disclosures and other stakeholders using ISS 1.[1]

1. Sustainability-related risks and opportunities

1.1 The Sustainability Standard ISS 1 requires an entity to disclose information about all material sustainability-related risks and their impact as well as material sustainability-related opportunities that could reasonably be expected to affect the entity's performance, prospects, and cash flows over the short, medium and long term.

1.2 An entity's sustainability-related risks and opportunities arise from the Interactions and dependencies - direct and indirect – throughout its value chain Interdependencies of resources and relationships in an entity's systems, processes and activities by which inputs are converted into outputs to fulfil the objectives of the entity, and the value chain framework[2] generate these risks and opportunities, and are influenced by them. The Value Chain Framework encompasses the entire range of interactions, transactions, resources and relationships connected with the entity's business model, its strategic objectives. This includes inbound operations, operations, outbound logistics, marketing, sales and services, procurement, human resource management, technological development, infrastructure, and financing, within the context of geographical, and regulatory environments in which the entity operates. These dependencies and impacts might give rise to sustainability-related risks and opportunities that could reasonably be expected to affect an entity's performance, prospects and cash flows over the short, medium, and long term.[3]

Entity should apply Strategic Cost Analysis[4] (SCA) across its value chain to identify and manage sustainability related risks at optimum cost across the life cycle right from the raw material source till product is discarded after use. The SCA helps in creating a hierarchy of activities, where the main activities directly involved in achieving the entity's goals are at the top, and their supporting activities are placed as per hierarchy, at cascading levels, depending on their level of involvement in the delivery. The costs are also drilled down from the highest to the lowest activity level, against the goals achieved or benefits derived from each activity.

1.3 To elucidate the nature of an entity's general sustainability related risks and opportunities arising from its interactions with the value chain and the interdependencies involved, that need to be identified and disclosed to the extent that they are material, an example of an entity's dependence on water as a resource and its influence on the value chain's water

[1] ISS1 Para 3 Scope
[2] ISS 1 Para 6.2 Strategic Cost Analysis in Value Chain

[3] ISS 1 Para 4 Definations
[4] Reference Link: Strategic Cost Management – Decision-Making (An ICMAI Publication)

resources is given below.

An entity's business model and operations are significantly dependent on water — the operations of the entity could both affect and be affected by the quality, availability and affordability of water. Further any degradation or depletion of water arising from the entity's own activities and from other extraneous factors might create a risk of disruption to the entity's operations and affect the entity's business model or strategy and negatively affect the entity's performance, prospects and cash flows over the short, medium, and long term. Any regeneration and preservation of water through the entity's own activities and from other factors might positively affect the entity.

1.4 Similarly, if an entity requires a highly specialised workforce to achieve its strategic purposes, the entity's success will depend on the entity's ability to attract and retain specialized workforce. These examples illustrate the close relationship between the business model and activities of the entity as well its interactions throughout its value chain which results in sustainability related risks and opportunities and impacts the entity's performance, prospects and cash flows over the short, medium, and long term.

1.5 Furthermore, resources and relationships which might lead to sustainability related risks as well opportunities may be natural, manufactured, intellectual, human, social or financial, and may include the effects and impacts of supply and distribution channels, the consumption and disposal of the entity's products, the entity's sources of finance and its investments. Some of these resources and relationships might not be recognised as assets or liabilities in the entity's financial statements.

2. Identifying Sustainability related risks and opportunities (SRROs)[1]

The Standard ISS1 lays down 10 principles of identification and measurement of Sustainability-related Risks and Opportunities (SRROs).

Fair Presentation: While disclosing the SRROs, a comprehensive assessment of all the risks and opportunities for their impact on the current performance, cash flows and prospects of the entity is required. The completeness, objective assessment and the accuracy of the manner of disclosure or depiction is crucial.

Accuracy: The ISS 1 requires a clear demarcation between factual data and estimates or forecasts, to bring clarity to the process of identification and measurement of impactful SRROs. The information used for the assessment should be factual and free from material errors. The descriptions and terms other than those defined in the ISS 1 that may be used in the disclosure process should be precise and clear. A reasonable level of accuracy in the computations and estimations is expected. The accuracy levels, acceptable levels of errors or rounding-off, permissible deviations from the set procedures for estimation etc. may be defined by the entity as a policy, and disclosed in the report.

Verifiability: Information should be complete, validated, unbiased and reasonably accurate. A combination of non-monetary measures of SRROs are often used to corroborate information from different sources, to improve credibility and support the disclosures.

Materiality: While considering the materiality of an impact, the entity should consider materiality from the monetary and non-monetary perspectives. The SRROs may impact the entity's stakeholders and its own business processes, profitability, reputation, continuity, social acceptance, growth and reach in several ways over time. It is important to classify the materiality of the impact into monetary and non-monetary impacts. The degree of change in

business continuity and sustainability estimates that is to be considered material in each identified SRRO or its impact-factor should be defined by the entity while selecting SRROs for disclosure.

Consistency: To render the sustainability-related disclosures made at different points of time comparable, there should be consistency in the methods of data collection, data sources, basic assumptions, tools and methods of estimation and accounting, and manner of disclosure. The definitions of important terms, accounting policies, materiality, important assumptions and reliable

sources of information should be built into the Sustainability-related reporting framework at the organisational level, in the form of policies, standard operating procedures, internal checks and controls, systems and reporting processes.

Assessing the Circumstances: The ISS 1 requires the entity to consider two important aspects that affect the accuracy and timeliness of the sustainability disclosures, namely, the extent of exposure to the SRROs, and the feasibility of the disclosures at the entity level. The exposure of an entity to SRROs largely depend on internal factors such as industry, business model, stakeholder expectations, nature of value-chain relationships etc. and on external factors such as geo-political environment, natural environment, and social circumstances. The availability of resources such as robust information systems, reliable data sources, reasonably accurate and automated computational tools etc. and the skills and capabilities of the people involved in the sustainability-related reporting at the disposal of an entity must be considered while determining the SRRO identification and measurement norms.

Exposure to Sustainability-related Risks and Opportunities: The entity should consider the degree of exposure to an SRRO and the level of impact on the entity together, while assessing its context and circumstances for identification, measurement, and reporting. This may be expressed in measurable quantities and / or in qualitative terms, based on the nature of the exposure and level of impact, to provide a clear assessment to the preparers and users of the report / disclosure statement.

Assessing Impacts: The ISS 1 requires that each risk and opportunity that has a material impact and can be distinctly identified and measured should be treated as a separate activity. Each such risk or opportunity must be assigned a level of materiality after considering the entity's context and circumstances, clear identification of actual and potential risks and opportunities, a measurement of their likely impact, an assessment of the significance of the exposure and likely impact, and a prioritisation of the risks and opportunities based on the significance and actionable nature of the SRRO.

Time frame: Sustainability deals with time-frames that may extend beyond the financial reporting periods, as the current SRRO may impact future activities of an entity, and the past activities of the entity may have an impact on the current and prospects of the entity. The present outputs and medium-term outcomes may translate into long-term impacts on the cash-flows and business continuity. It is important to select an appropriate range of time-periods over which SRROs are considered for disclosures.

Selecting Inputs for Scenario Analysis: Entities conduct a Scenario Analysis to determine the degree of exposure and the level of impact of the identified SRROs, and rank them in the order of significance. While conducting this scenario analysis, care should be taken that the inputs are relevant to the context and circumstances of the entity. Only relevant inputs, such as those related to, and impacting, the activities of the entity, the geographic location of the

entity, the industry of its operations, the dynamics of its value-chain relationships etc. should be considered. There may be many inputs that are remotely connected and/or relatively less influential in the context of the SRRO and the entity. Those may be ignored or given less weightage.

Understanding the organisation and its environment

2.1 To determine the parameters within which the Sustainability related risks and opportunities should be identified, some of the common questions to be asked are:

i) What is the form and structure of entity?

ii) Where does the organisation operate?

Iii) Where it is physically located?

iv) What are the jurisdictions in and within which the organisation carries out its activities? (These can be at international, regional and/or national levels, and can include activities carried out both online and offline).

v) Which sector / industry is the organisation involved with?

A larger or more complex entity might be involved in multiple / a range of activities spanning multiple industries, possibly across sectors, which might be (though not necessarily) interrelated. Each industry is likely to have its own set of requirements, with certain industries, e.g. finance, healthcare, being more heavily regulated than others.

2.2 Sustainability related risks and opportunities may also vary significantly depending on the following:

i) the geographic location of the organization's value chain (both upstream and downstream).

ii) the organization's assets and nature of operations.

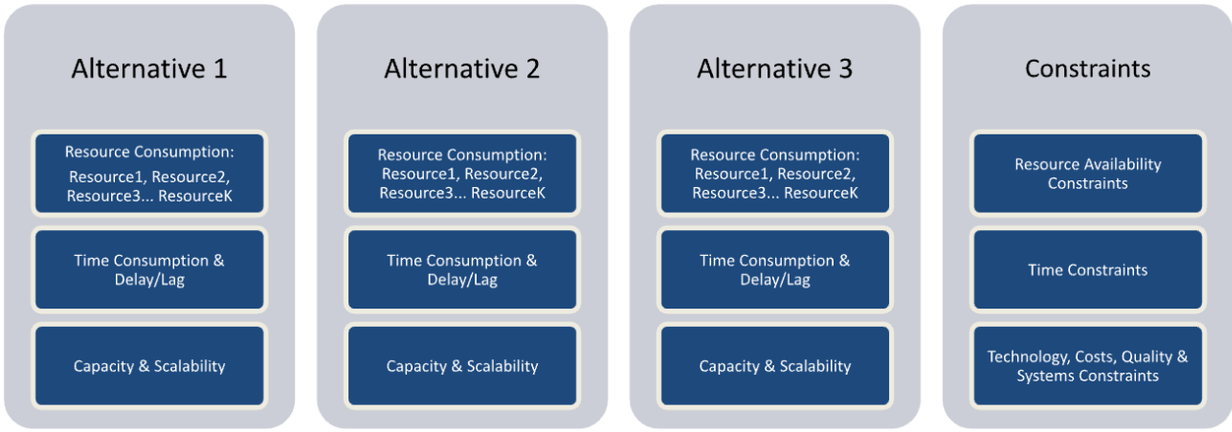
iii) the structure and dynamics of the organization's supply and demand markets.

iv) the organization's customers.

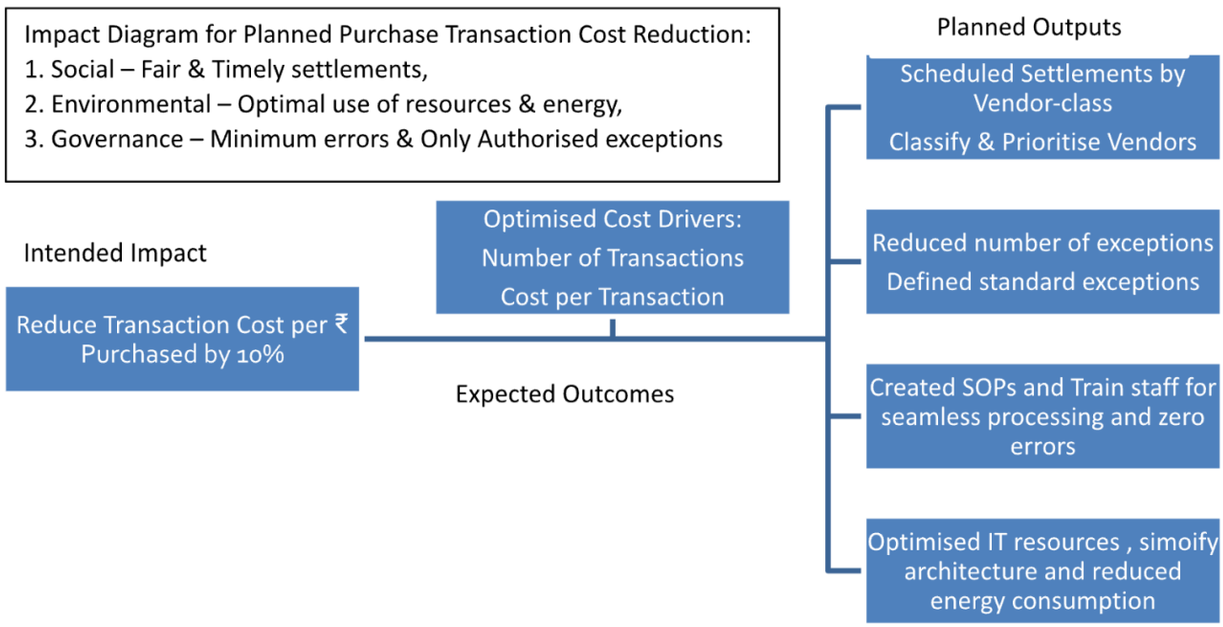
v) the organization's other key stakeholders.

2.3 An organisation should consider using its existing risk management process, business-planning process, scenario analysis, and risks and opportunities arising from the product life cycle assessment, taking into account forward looking information including assessing risks and opportunities arising from new objectives or new sustainability-related targets that the organisation has set for itself or is required to meet as a result of laws and regulation, to identify its SRROs.

2.4 Besides identifying SRROs from information that is available and developed internally, the organisation may further consider, use and apply information from reports of industry peers, reports published by analysts and other experts/ agencies, including information related to metrics and targets that might also be applicable to the entity.



2.5 The entity should use a resource consumption[1] model (RCM) to facilitate assessment of sustainability related risks, based on resource consumption effectiveness, identifying areas for improvement, minimizing resource usage and waste, and enhancing environmental, social and commercial viability of an entity. A business or production process designed using RCM integrates the costs, capacities, economies of scale and cycle times with the benefits derived while evaluating the available alternatives.



2.6 Entity should use Impact Analysis[2] in a structured manner for looking at a proposed change, with a view to identifying its impact on performance, prospects as well as cash flows of the entity over the short, medium and long term. The process of Impact Analysis may be described as the systematic tracing of potential consequences arising from an entity's activities, in terms of outputs, outcomes and impact in the short, medium and long term. It assists stakeholder decision-making through insights into the entity's activities regarding the risks involved, opportunities available and the potential for resource optimisation. This tool is often used in analysing the impact of those aspects of an entity's activities that extend beyond monetary measures.

[1] ISS 1 Para 7.1 Resource Consumption Model (RCM)
[2] ISS 1 Para 7.2 Impact Analysis

Tracing the dependencies and understanding the flow of impacts is easier to comprehend through an impact analysis diagram. Many types of impact analysis diagrams may be created, to deal with the different levels of complexity and the levels of understanding of different stakeholders. Forward looking trace back from the required or intended impact to the resources and activities planned to achieve them. While monitoring the performance of an initiative, impacts are traced from actual activities, time and resources consumed to the output, outcome and impact. Illustration: Here, an entity aims to reduce its transaction costs arising from the purchase of goods, in the normal course of its business. The impact of this program is likely to be felt throughout the value chain, involving suppliers, transporters, receiving and warehousing service providers, storage and security service providers and so on. At the entity level, the impact will be multi-dimensional – improving cost efficiency, improving quality of inputs and output, and better control over the materials.

2.7 Entity should use Social Cost -Benefit Analysis[1] (SCBA) which is an economic tool that helps entities to make sustainability related decisions by evaluating the costs and benefits of a social / environmental initiative or project. It is a systematic way to assess the social and costs and benefits of a project and its impact on performance, prospects as well as cash flows of the entity over the short, medium and long term. While this is commonly used in public projects such as construction of a dam, a highway, or a special economic zone, and so on, where the project report deals primarily with the resource utilisation, timelines, and socio-economic benefits, and the SCBA provides insights into the social costs involved and the overall benefits to the impacted persons.

For example, the social cost of relocation of families, loss of livelihood and disruption of education could be quantified as social costs of the construction of a dam. A similar approach towards social costs of projects or initiatives may be performed for a private entity – say, the social cost of relocating a polluting unit such as a cement or chemical production unit to an earmarked zone – to give the stakeholders a better view of the overall impact of the relocation on all the stakeholders such as workers, managerial staff, their families, and the impact of the social environment on the entity – that is, acceptance by the local population, cultural and social adjustments required in the new location, the cost of conforming to local customs and traditions, and so on. Assessment of social risks and opportunities is facilitated by this tool.

2.8 Entity should use Environmental Cost-Benefit analysis (ECBA)[2] to assess and evaluate entity's actions that affect the natural environment while assessing performance, prospects as well as cash flows of the entity over the short, medium and long. The EBCA identifies the environmental costs arising from a project or initiative in terms of the major detrimental changes in the environment and the benefits in terms of the positive changes in the environment due to the project or initiative. For example, the relocation of a polluting unit may cause air pollution in the new remote and sparsely populated area (cost), and help in reducing the air pollution and improving the air quality in the densely populated urban area in which it was formerly located. Putting together the impact on air quality in both the areas, the overall cost-benefit analysis will give a bird's eye view of the net environmental impact of the project, supported by a detailed analysis of the environmental risks and opportunities.

2.9 Entity should use Activity-based Management (ABM)[3] which facilitates identification and monitoring of activities that an entity performs, to assess their sustainability-related impact for evaluating performance, prospects as well as cash flows of the entity over the short, medium and long term. The ABM can be used for Cost-Driven or Value-Driven analysis of all the activities of an entity in its normal operations. Cost-Driven ABM focuses on the cost-flows of

[1] ISS 1 Para 7.3 Social Cost-Benefit Analysis
[2] ISS 1 Para 7.4 Environmental Cost-Benefit Analysis
[3] ISS 1 Para 7.5 Activity-Based Management

the entity at each activity level and compares its outcomes with the intended goals. Any inefficiencies identified in the activity in terms of time, resources or money are identified and eliminated. Scope for improvement are identified and worked upon. In the case of Value-Driven ABM maps the value added by each activity towards the achievement of the given targets, and the costs corresponding to each. Activities that add little or no value are considered wasteful and reduced or optimised. This tool may be used in sustainability management by mapping the target social, environmental and economic impacts and costs of each activity or business process. The following chart illustrates the cost-benefit mapping of activities at a broad level for a proposed raw material store for a manufacturing unit, using new and efficient technology for material handling and storage, trained manpower, and improved water efficiency. It indicates the cost and benefit of each activity on the same plane, and supports the stakeholders understand the overall risks ad opportunities involved in reducing or enhancing any of the activities involved in the proposed store.

In this example, if the stakeholders contemplate building the store without the new energy-saving material-handling equipment, the project's one-time cost may be reduced to that extent. However, the impacts on the operations need to be considered at the activity level. The map compares the cost of financing energy-saving equipment with the potential savings in energy costs and potential earnings from carbon credits.

2.10 An entity shall use all reasonable, relevant and supportable information[1] that is available to the entity at the reporting date without undue cost or effort.

a) to identify the sustainability-related risks as well as opportunities that could reasonably be expected to affect the entity's performance, prospects and cash flows over the short, medium and long term.

b) to determine the sustainability-related risks as well as opportunities that could reasonably be expected to emanate from interactions of the entity across breadth and composition of its value chain,

Entity should balance the costs and benefits of reporting, i.e. by ensuring that the value of the sustainability-related disclosures is commensurate with the cost incurred in making those disclosures. For example, if additional information can be obtained at a prohibitive cost, while it may not enhance the quality of sustainability-related disclosures substantially, the entity should consider refraining from attempting to gather that additional information.

Small and less-resourced entities may consider balance and proportionality to ensure reporting remains practical and not overly burdensome.

2.11 Reflect upon strategy to manage SRROs, taking into consideration proposed

i. Introduction of new technology

ii. Introduction of new processes within the entity

iii. Investment and disposal plans

iv. Change in value chain partners

v. planned sources of funding to implement strategy

2.12 Disclose the organisation's strategy for managing sustainability-related risks and opportunities[2] with consideration for the following aspects:

[1] ISS 1 Para 5 Principles of Identification and Measurement
[2] ISS 1 9 Governance 9.5

Explain how the SRROs affect the organisations:

2.12.1 Business model

Describe:

i. Current and anticipated effects

ii. Where the SRROs are concentrated (geography, facilities, types of assets, service or product-lines, business processes)

2.12.2 Value chain

Describe:

i. Current and anticipated effects

ii. Where the SRROs are concentrated (geography, facilities, types of assets, resources, stakeholder groups, markets)

2.12.3 Strategy and decision making

Describe how the organisation has responded to, and plans to respond to SRROs in its strategy and decision-making, and embedded sustainability considerations in its strategy and decision-making processes.

Explain the progress of plans disclosed in previous reporting periods – use quantitative and qualitative information for describing the monitoring and review of sustainability parameters in the plans or programs reported.

Describe trade-offs between SRROs that the organisation considered. There may be benefits or opportunities arising from an impact factor that offsets or negates the risks or losses due to another factor. The entity's activities might also be such that the risk in one area is mitigated by the benefits arising from another area of operation.

2.12.4 Resilience

i. Describe the organisation's capacity to adjust to uncertainties arising from sustainability-related risks and opportunities.

ii. Disclose the qualitative and, if applicable, quantitative assessment of resilience of strategy and business model

iii. Describe how the assessment of sustainability risks and opportunities was carried out

iv. Identify the time horizon of the assessment of sustainability risks and opportunities

v. Type of information to disclose

vi. How to prepare those disclosures, including whether scenario analysis is required

2.13 Define and disclose the time horizons and how these are linked to the organisation's planning horizons for strategic decision-making

i. Cash flow

ii. Investment made / proposed

iii. Business cycles

iv. Industry's typical planning horizon for strategic decision – making

v. Industry's typical planning horizon for capital investment

vi. Typical time horizon stakeholders consider to conduct assessment of the entities in that industry

Consider that time horizon can be short, medium and long term, and

i. Vary between entities

ii. Depend on many factors including industry-specific characteristics

Short-term is typically defined as a period within one year, medium term up to five years while Long-term is defined as beyond five years.

2.14 When identifying SRROs that could reasonably be expected to affect the entity's performance, prospects and cash flows in short, medium and long term, consider:

i. Past events

ii. Current conditions

iii. Forecast of future conditions,

and whether

i. Information is available, relevant, and supportable

ii. Information is available at reporting date

iii. Information is available without undue cost or effort

2.15 Risk management

2.15.1 Every entity operates under different conditions and has different challenges, goals and objectives, and there is no 'one-size-fits-all' approach to identifying SRROs

2.15.2 Some social or environmental events or conditions can negatively impact all organizations, introducing risks driven by changing environmental, economic, and regulatory factors.

2.15.3 Sustainability risks can be identified across asset-classes, sectors and geographies, or on the basis of length and maturity.

2.16 Sustainability Risk Assessment process

2.16.1 Define Scope and Objectives

i. Determine the boundaries of the assessment (e.g., specific projects, entire organisation, supply chain).

ii. Set clear objectives for what the assessment aims to achieve, such as identifying key sustainability risks, compliance with regulations, or improving corporate responsibility.

2.16.2 Stakeholder Engagement

i. Identify internal and external stakeholders (e.g., employees, customers, suppliers, local communities).

ii. Engage with these stakeholders to understand their concerns and expectations regarding sustainability.

2.16.3 Data Collection and Baseline Establishment

i. Collect relevant data on current sustainability practices, environmental impacts, social responsibilities and governance structures.

ii. Establish a baseline to measure future improvements.

2.16.4 Risk Identification

i. Identify potential material sustainability-related risks. This can include environmental risks (like pollution and resource depletion), social risks (like labour issues and community impacts), and governance risks (like non-compliance with laws and ethical concerns).

ii. Leverage tools such as SWOT Analysis (Strengths, Weaknesses, Opportunities, Threats), PESTLE Analysis (Political, Economic, Social, Technological, Legal, Environmental), or scenario planning.

2.16.5 Risk Analysis and Prioritisation

i. Assess the likelihood and potential impact of identified risks.

ii. Prioritise risks based on their severity and the organisation's ability to influence them.

2.16.6 Risk Mitigation Strategy Development

i. Develop strategies to mitigate high-priority risks. This could include process changes, adopting new technologies, policy revisions, or stakeholder engagement strategies

ii. Consider opportunities for material sustainability-related improvements that may emerge from risk-mitigation strategies.

2.16.7 Implementation

i. Put the risk mitigation strategies into action.

ii. This stage may involve changes in operations, training for staff, development of new policies, and more.

2.16.8 Monitoring and Review

i. Regularly monitor the effectiveness of the mitigation strategies.

ii. Update risk assessment periodically to reflect changes in the organisation's operations, the external environment, or stakeholder expectations.

2.16.9 Reporting and Communication[1]

i. Communicate the findings of the SRA and subsequent actions to stakeholders.

ii. Transparency in reporting helps build trust and can enhance the organisation's reputation.

2.17 The risk assessment aims at estimating the potential exposure of a risk by quantifying its likelihood and impact. With regards to sustainability, the assessment must be broader. It must also consider the anticipated effects on the company's stakeholders, the reputation of the company and its longevity.

2.17.1 Describe the processes and related policies the entity uses to identify, assess, prioritise

[1] ISS 1 Para 17 Presentation

and monitor sustainability-related risks

a. Explain the inputs and parameters the entity uses (e.g., information about data sources and the scope of operations covered in the processes)

b. Explain whether and how the organisation uses scenario analysis to identify sustainability-related risks and opportunities

c. Explain how the entity assesses the nature, likelihood and magnitude of the effects of those risks (e.g., whether the entity considers qualitative factors, quantitative thresholds or other criteria)

d. Explain whether and how the entity prioritises sustainability-related risks relative to other types of risk

e. Explain how the entity monitors sustainability-related risks and opportunities

f. Explain whether and how the entity has changed the processes it uses compared with the previous reporting period

2.17.2 Describe the processes and related policies the entity uses to identify, assess, prioritise and monitor sustainability-related opportunities

2.17.3 the extent to which, and how, the processes for identifying, assessing, prioritising and monitoring sustainability-related risks and opportunities are integrated into the entity's overall risk management process

2.17.4 Explain the inputs and parameters the entity uses (e.g., information about data sources and the scope of operations covered in the processes)

2.18 Determine range of risk appetite of the entity

Risk appetite is the level of risk-taking acceptable to achieve a specific objective or manage a category of risk.

b) The type of scale with risk tolerances could be: Risk Averse, moderately Risk Averse, risk neutral, risk tolerant, risk seeking

2.18.1 Examples of sustainability-related risks

a) Regulatory Compliance Risks: Failure to comply with evolving environmental, social, and governance (ESG) regulations.

Many countries and regions are implementing policies and laws that require businesses to disclose and reduce their environmental and social impacts, such as carbon emissions, waste management, labour standards and human rights. Failing to comply with these regulations can result in fines, sanctions, lawsuits and loss of licenses.

b) Supply Chain Risks: Disruption due to climate-related events, resource scarcity, or unethical practices in the supply chain.

Most entities depend on supply chain assets and most if not all of them are exposed to climate change. If the supply chain is broken or comes to a standstill due to a climate hazard, it can have an enormous impact on the day to day business processes and operations.

c) Reputational Risks: Negative public perception due to environmental incidents, social controversies, or lack of transparency.

A common example of reputational risks associated with sustainability is Greenwashing. Greenwashing involves an organisation making misleading sustainability-related claims to investors or consumers, usually to boost its reputation and bottom line.

d) Litigation Risks: Legal actions related to environmental or social issues.

e) Environmental risk - some critical environmental concerns that pose risks to entities:

- Water and air pollution.
- Excessive greenhouse gas emissions that contribute to both, pollution and climate change.
- Depletion of natural resources by overusing them.
- Biodiversity loss from deforestation and destruction of habitats.
- Severe weather events and natural disasters that can disrupt business operations.
- Climate change's effects, which create both immediate and long-term business risks.

f) Climate Change Risks: Physical risks from extreme weather events, regulatory risks from climate-related policies, and transition risks related to changes in market dynamics. Identify the key/strategic production plants potentially exposed to extreme weather events and evaluate the related resilience level. For example: Risk of business interruption due to extreme events (e.g., floods, cyclones, etc.) on key company assets

i) Using a specialised weather forecast service and related modelling of the evolution of natural catastrophic risks (NatCat) on a worldwide scale, it is possible to match the geographical location of each production unit with the NatCat exposure.

ii) Each plant and specific NatCat risk should be evaluated along with the existing counter-measures that could mitigate the consequences (e.g., site/ buildings elevation, presence of underground floors, etc.). Finally estimate the potential business interruption in case of risk occurrence.

g) Resource scarcity and depletion risks - if the entity operates in an industrial field with a high dependence on rare metals, minerals, or fossil fuels.

h) Social Risks - relationships entity has with business partners, communities, and other stakeholders.

Most of the entities are affected and impacted by social risks

Diversity, inclusion, and wage equality may be required by local regulations

Potential health and safety risks to employees, contractors, and customers and entity's plans for mitigating them.

Data privacy risks are covered under regulations like GDPR but should also be considered risks to the sustainability of a business.

Anti-competitive behaviour and business practices.

i) Business ethics and integrity (corporate behaviour) risks - Prevention, detection and countering any unlawful behaviour by employees and collaborators (including corruption, extortion and bribery) and compliance with related national and international legislation

j) Product/Service liability risks - Product reliability, guaranteeing the compliance with quality and safety regulations

k) Cyber-attacks – Attacks motivated by frauds, ransomware, and/or access to sensitive data or information lead to theft or loss of intellectual property, financial losses, reputational damage, operational disruption and compromise of safety systems.

l) Global macro-economic conditions – sustainability risks arising from deep and protracted slowdown in world economy, trade wars, geo political tensions may lead to increased costs, lack of confidence in making investment decisions which may impact entity's performance, prospects and cash flows over short, medium and long term

m) Inability to attract and retain a suitable, resilient and healthy workforce – This sustainability risks manifests in terms of loss of competitive advantage, increased employee costs, low efficiency of organizational processes and practices, challenges in achieving the objectives of the entity,

n) Competitive risk - Competitive risk is the possibility that a business's competitors will prevent it from growing and being successful. It is also known as market share risk. How does competitive risk occur? Competitors may take actions to prevent other companies from entering new markets or reaching customers, a new competitor may target the same demographics as your business and offer similar products, a competitor may be the first to release an innovative product, Steep discounts, innovation or a new competitor in the market are common types of competitive risk.

o) Technological changes - Any risk to information technology or data or applications that negatively impact business operations. This could cover a range of scenarios, including software failures or a power outage. Technology risk can be described as the many risks associated with an organization's technology, its use and the enabling infrastructure and

capabilities. It also includes risks associated with IT infrastructure and the day-to-day operations that technology enables. Technology risk has the potential to cause financial, reputational, regulatory, or strategic disruption, Technology risk examples: Ineffective, Capacity, Cyber -attacks, Loss event scenarios such as phishing, malware, data breach, Tech obsolescence, Emerging tech disruption, Data corruption, Third-party failures, Human capital shortages, Failure to deliver on business requirements.

“Deep fakes,” “hallucinations,” corporate data leaked through a large language model (LLM)…Generative Artificial Intelligence (GenAI) opens novel threat vectors for insider error and external attack.

p) Strategy risk - Misalignment with company vision, strategy, or Code of Conduct, the organization takes a path that is a blind alley in the long-term. May include the risk of not capturing potential organizational gains – such as the dilemma between the decision to invest in product development and innovation versus the decision not to make this investment, which may impact market share.

Internal risks - Risks from employees’ and managers’ unauthorized, illegal, unethical, incorrect or inappropriate actions; Risks from breakdowns in routine operational processes

External risks - a new competitor entering the market, changes to supply or cost of raw materials or technological changes.

A company failed due to strategic risk, who were the market leaders in the ‘90s and early 2000s. However, they failed to keep up with developing technology.

2.18.2 Industry-specific sustainability risks

The ISS 1 has a cross-sector relevance and applicability. This guidance note provides a brief outline of industry-specific sustainability risks to highlight the need to adapt the assessment process and sustainability-related disclosures to suit the nature of SRROs specific to industry and the entity.

Manufacturing

Manufacturing processes generate significant amounts of waste, emissions, and pollutants, all of which affect the environment and contribute to climate change. Manufacturing also consumes a lot of energy and resources, which depletes natural capital and raises prices.

Manufacturing processes have an impact on the health of workers, suppliers, customers, and communities. Manufacturing workers suffer dangers, labour exploitation, and low wages, all of which jeopardize their health and dignity. Suppliers are under pressure to achieve quality standards and timelines, which may jeopardize their social and environmental practices. Customers are exposed to health hazards because of defective or dangerous items. Manufacturing activities damage communities through noise, traffic, and pollution.

Manufacturing entities are impacted by the manufacturing process, required financial transparency, executive compensation, and board diversity. They must also follow several laws and guidelines that regulate their performance in terms of government, society, and the environment.

Manufacturing involves the large-scale production of goods, often with significant environmental and social impacts. Some of the specific risks faced by the industry include the following:

- High consumption of water, energy and raw materials that can lead to resource depletion and environmental harm.
- Pollution and waste that affect air, water and soil quality, potentially leading to regulatory penalties and causing public health issues.
- Workers' health and safety risks in production processes that can result in legal actions and loss of employee trust.

Retail

The retail industry has a broad and direct impact on consumers and communities, making social and environmental issues particularly salient. These are some of the sustainability risks they face:

- Poor labour practices and environmental damage by supply chain partners that can harm a retailer's reputation and lead to regulatory penalties.
- High levels of waste and inefficiencies in product lifecycle management that contribute to environmental degradation.
- Consumer pressure that requires retailers to modify their product offerings, adapt their business practices and ensure operational transparency.

Healthcare

The healthcare industry faces complex sustainability risks related to ethical concerns in patient care and supply chain operations. These are some of the risks that healthcare organizations encounter:

- Breaches of patient data security that cause privacy issues, and can result in significant penalties, reputational damage, and loss of trust.
- Ensuring that drugs, treatments, and medical products are safe and effective. Product safety failures can lead to recalls, legal actions, and patient harm, as seen in cases of defective medical devices or contaminated pharmaceuticals.
- Ethical considerations in clinical trials, including informed consent and the fair treatment of participants. Failures in this area can also harm participants and have legal repercussions.
- Various worker safety risks, including exposure to infectious diseases, hazardous materials and workplace violence.

Financial services

This industry faces significant sustainability risks due to its operating practices and its extensive influence on other sectors. Financial institutions are often scrutinized for their investment choices, especially when they involve companies with poor sustainability performance. Potential risks for banks and other financial services firms include the following:

- Climate risk exposure from investments in carbon-intensive industries, which can lead to financial losses due to regulatory changes and market shifts toward sustainable practices.
- Reputational damage from being associated with unethical entities, controversial projects or other industries with high sustainability risks.
- Stringent regulatory requirements that can cause compliance problems for financial institutions.

Failing to meet the needs of underserved communities and provide equitable access to financial services. Doing so can result in social backlash, heightened regulatory scrutiny, and missed market opportunities.

Energy

The energy sector is central to the global economy but also one of the most significant contributors to environmental problems and climate change controversies. Some of the energy sector's critical risks:

- High greenhouse gas emissions and environmental degradation from fossil fuel extraction and use.
- Negative effects on local communities from energy projects, including displacement and health issues.
- Financial and operational risks associated with the shift to renewable energy sources. This includes stranded assets -- investments in fossil fuels and related infrastructure that might lose value or become obsolete due to regulatory and market changes.

Hospitality

The hospitality industry is built on providing pleasant guest experiences that generate loyalty and income. It faces sustainability risks that could jeopardize its capacity to provide great service and keep customers satisfied

Hospitality enterprises are energy and water intensive, and generate waste, which harms the environment. In addition, hospitality adds to greenhouse gas emissions, water scarcity, and waste pollution, all of which worsen climate change and environmental deterioration.

The well-being of customers, employees, and communities is also influenced by hospitality establishments. Guests encounter security dangers, privacy concerns, and service quality challenges, all of which impact their happiness and confidence. Employees suffer low earnings, bad working conditions, and a lack of diversity, all of which have a negative impact on their motivation and performance.

Hospitality establishments are required to adhere to a variety of regulations and standards that control their environmental, social, and governance performance.

Mobile & Telecoms

Mobile telecommunications is an industry that delivers critical communication services to people all over the world. It faces sustainability risks that may have an impact on its service quality and reliability, as well as consumer loyalty.

Mobile telecommunications activities generate significant volumes of e-waste, energy usage, and electronic pollution, all of which hurt the environment and raise expenses. Mobile telecommunications companies also contribute to greenhouse gas emissions, resource depletion, and environmental deterioration

Mobile telecom activities have an impact on the health of users, employees, and communities. Users are concerned about data privacy, security, and quality, which affects their satisfaction and confidence.

Operations in the mobile and telecom sector are governed by compliance with telecom legislation, ethical marketing, and adherence to several laws and standards, and have

controls that affect their governance, and social and environmental performance.

Packaging

The packaging sector serves many different industries by offering crucial packaging services. Sustainability risks it encounters may have an impact on both its capacity for innovation and customer happiness.

Large volumes of plastic trash are produced by packaging processes, harming the environment, and accelerating climate change. Additionally, packaging uses a lot of materials, which depletes natural resources and raises prices.

Operations involving packaging also have an impact on local communities, customers, suppliers, and employees. Workers in the packaging industry are subject to risks to their health and dignity as well as labour abuse and inadequate pay. Suppliers are under pressure to achieve delivery timelines and quality standards, which could jeopardize their social and environmental policies. Customers are exposed to health concerns due to poor or dangerous packing. Waste packaging has an impact on the growth and aesthetics of communities.

Operations involving packaging are governed by regulations relating to transparent labelling, accurate product information, and ethical marketing. Additionally, they must adhere to several laws and standards that control their governance, and social, and environmental performance.

Energy, Oil, and Gas: Transitioning to a Greener Future

The oil and gas sector provides critical energy services to the world. It confronts sustainability risks, which could jeopardize its profitability and competitiveness in an evolving energy sector.

Carbon emissions, habitat damage, and ecosystem impacts caused by energy oil and gas operations affect the environment and contribute to climate change. Energy oil and gas use a lot of water, land, and resources, which depletes natural capital and raises prices.

The well-being of workers, communities, and indigenous peoples is also impacted by energy oil and gas operations. Workers in the oil and gas industry endure health risks, labour exploitation, and low wages, all of which jeopardize their health and dignity. Energy oil and gas activities cause disruption in communities through noise, traffic, pollution, and health dangers. Because of major oil and gas projects in their lands, indigenous peoples face displacement, land loss, and cultural deterioration.

Energy oil and gas operations are impacted by industry's governance architecture. Energy oil and gas entities face difficulties in maintaining environmental compliance, transparent emissions reporting, and ethical decision-making. Investors, customers, and regulators are also putting pressure on them to enhance their sustainability performance and align with global goals of decreasing greenhouse gas emissions and mitigating climate change.

Agriculture

The world's primary source of food services is the agriculture sector. Its productivity and competitiveness in a changing market and environment may be impacted by sustainability risks.

Agriculture-related activities hurt the environment and fuel climate change by causing deforestation, water scarcity, and pesticide pollution. Aside from using up a lot of resources

like land and water, agriculture also raises prices and depletes natural capital.

The health of customers, communities, and workers on farms is also impacted by agriculture-related activities. Farm workers experience poor earnings that are detrimental to their health and dignity as well as safety risks and labour abuse. Food products that are tainted or dangerous pose health concerns to consumers. Agricultural activities can cause community disruptions like land grabs, strife, and displacement.

Agricultural businesses must comply with laws governing land usage, land management, and animal care. Additionally, they must adhere to several laws and standards that control their governance, and social, and environmental performance.

Construction

Construction industry that has a tremendous impact on the environment, society, and governance is construction. It is vulnerable to sustainability risks that could endanger its growth prospects and reputation.

Construction operations can damage biodiversity and ecosystem services by destroying habitats, deforesting, and eroding soil. This industry also requires large amounts of water, energy, and materials that strain natural resources and increase costs.

Construction activities have an impact on the well-being of workers, customers, and communities. Construction workers suffer risks, labour exploitation, and low wages that jeopardize their health and dignity. Customers are dissatisfied and distrustful, as a result of quality concerns, delays and expense-overruns. Construction operations produce noise, traffic, and waste in communities.

Construction operations face risks of unethical subcontractor relationships, they are also vulnerable to corruption and legal challenges, which can harm their reputation and profitability.

Pharmaceuticals

The pharmaceutical sector offers crucial health services to people all around the world. Sustainability risks it encounters may have an impact on both its capacity for innovation and customer happiness.

Pharmaceutical operations affect the environment and fuel climate change by causing water pollution and improper disposal of pharmaceutical waste. Additionally, the pharmaceutical industry uses a lot of resources, which depletes natural resources and raises prices.

The health of patients, staff, and communities is impacted by pharmaceutical operations. Patients must contend with dangers to their safety, problems with access and affordability, and problems with trust. Employees' health and dignity are compromised by health risks, labour exploitation, and inadequate pay. Pharmaceutical products put communities at risk for infectious diseases, antibiotic resistance, and drug misuse.

Drug regulatory compliance, open clinical trial reporting, and moral decision-making are regulatory challenges for pharmaceutical corporations. Additionally, they are under pressure from authorities, customers, and investors to enhance their sustainability performance and conform to international objectives for lowering health disparities and raising health outcomes.

2.17. 3 Examples / Case studies – Identification and Assessment of Sustainability risks

- An Automotive company evaluating

a. Financial materiality – How EV battery regulations impact revenue

b. Impact materiality – How Lithium mining affects local communities

- A fashion brand evaluating labour conditions in its factories even if poor labour practices do not immediately impact its performance
- A real estate company assessing how rising sea levels might decrease property values and impact performance, prospects and cash flows of the entity over short, medium and long term
- In 2019, the fast fashion retailer launched its Conscious Collection, which was marketed as being made from "more sustainable materials." But the company faced a backlash when it was revealed that the collection contained more synthetic materials derived from fossil fuels than the company's primary product line. This incident not only damaged the company's reputation but also led to increased scrutiny of its overall sustainability claims. Multiple legal complaints were filed against the company,
- An auto-maker faced global reputational damage and financial penalties due to a 2015 diesel emissions scandal. Company had surreptitiously installed software in millions of diesel vehicles to manipulate emissions tests, making the cars appear more environmentally friendly than they were. The discovery of this deception led to over $30 billion in fines, settlements and vehicle buyback costs, as well as significant damage to the company's brand and a drop in sales. Company has since committed to move toward electric vehicles and enhance its environmental compliance efforts.
- A company was fined $1,300,000 and ordered to pay restitution of $2,200,000 for environmental crimes, including illegal waste discharge and conspiracy to violate the Clean Water Act.
- A company faced intense scrutiny, legal challenges, and a decline in user trust, emphasizing the importance of responsible data governance and the potential consequences of social mismanagement.
- Reports of unethical working conditions and underpayment of workers in a company's supply chain brought social risks to the forefront. The company's share price dropped, and it faced a consumer backlash, illustrating the financial and reputational damage that can result from failing to manage social risks within the supply chain.

2.19 Reasonable and supportable information[1]

2.19.1 Reasonable, relevant and supportable information Includes information that are specific to the entity as well as general conditions in the external environment including past events, current conditions and forecasts of future conditions.

2.19.2 An entity may use various sources of data for disclosure of sustainability related risks as well opportunities that may be both internal and external. Data sources used by an entity may include the entity's risk management system and processes; macro - economic conditions, sector specific / industry / ratings reports and statistics.

2.19.3 The extent and degree of effort made by an entity to identify sustainability-related risks as well as opportunities that could reasonably be expected to affect the entity's performance, prospects and cash flows over the short, medium and long term would depend upon the assessment of what is considered as undue cost or effort which in turn depends on the entity's specific circumstances and requires a balanced consideration of the relative costs and

[1] ISS 1 Para 5.2 Accuracy and 5.3 Verifiability

efforts for the entity and the benefits of the resulting information for stakeholders. However, that assessment can change over time as circumstances change.

2.20 Reassessment of the scope of sustainability-related risks and opportunities throughout the value chain

2.20.1 An entity shall reassess the scope and dimensions of its sustainability- related risks as well as opportunities throughout its value chain on the occurrence of a significant event or significant change in circumstances. For example, such significant events or significant changes in circumstances might include

a. a supplier in the entity's value chain makes a change in its internal operational process that significantly alters the supplier's greenhouse gas emissions;

b. a merger or acquisition that expands the entity's value chain;

c. a supplier in the entity's value chain may be affected by the introduction of a new regulation

3. Materiality[1]

3.1 ISS 1 requires an entity to disclose material information about the sustainability-related risks and opportunities that could reasonably be expected to affect the entity's prospects. Materiality of information is judged in relation to whether omitting, misstating that information could reasonably be expected to influence decisions of stakeholders

3.2 Assessing whether information could reasonably be expected to influence the decisions made by primary users requires consideration of the characteristics of those users and of the entity's own circumstances.

3.3 An entity assesses whether information is material based on whether that information could reasonably be expected to influence decisions of stakeholders. Although the entity itself makes this assessment, it is based on the perspective of stakeholders and their information needs. This means that, for example:

i. information about a sustainability-related risk or opportunity that the management determines could not reasonably be expected to influence stakeholders' decisions may not be considered material;

ii. information cannot be assumed to be immaterial simply because users have not asked for it; and

iii. information about a sustainability-related risk or opportunity that an entity considers to have a low likelihood of occurring and a low impact might still be material if an entity considers that stakeholders could reasonably be expected to take a different view.

3.4 When making materiality judgements, an entity considers whether the information could influence primary users' decisions about providing resources to the entity. Those decisions involve decisions about:

i. buying, selling or holding equity and debt instruments;

ii. providing or settling loans and other forms of credit; and

iii. exercising rights to vote on, or otherwise influence, the entity's management's actions that affect the use of the entity's economic resources.

3.5 An Entity should consider both, existing and potential stakeholders. An entity should not

[1] ISS 1 Para 5.4 Materiality

focus on only the needs of a few, for example, existing investors, lenders and other creditors when determining the information it provides.

3.6 Materiality judgements are specific to an entity. Consequently, the ISS 1 does not specify any thresholds for materiality or predetermine what would be material in a particular situation.

3.7 ISS 1 sets criteria for the materiality assessment but not specific thresholds to determine when a matter or information is material or not. Therefore, the assessment requires the exercise of judgement.

3.8 Disclosures that meet these reporting needs will be guided by the entity's materiality assessment.

3.9 In addition, in some situations where a sustainability matter is identified as material but is not covered by ISS 1 or not covered with sufficient granularity by it, the entity shall provide additional entity-specific disclosures.

4. Identifying material information

4.1 To identify material sustainability-related risks and opportunities, an entity needs to understand the resources and relationships it depends on and affects.

Resources and relationships can:

i. be Internal such as entity's workforce, the know-how, or its organizational processes

ii. be external such as the material and services the entity needs to access or the relationships it has with the suppliers, distributors and customers.

iii. include but not limited to the resources and relationships recognized as assets in the reporting statements of the entity.

4.2 To identify its material sustainability-related risks and opportunities, an entity considers its interactions with stakeholders, society, the economy and the natural environment throughout its value chain

4.3 An entity's interactions across its value chain can be both direct and indirect. For example, an entity might interact directly with the natural environment through its use of timber as a raw material to create its products. Another entity might interact indirectly with the natural environment through its suppliers; its suppliers might use timber as a raw material to create a product the entity uses.

4.4 To identify material sustainability-related risks and opportunities, an entity needs to understand the resources and relationships it depends on and affects. An entity should consider how it—directly and indirectly—depends on and affects resources and relationships, i.e., an entity:

i. depends on resources and relationships to generate cash flows; and

ii. affects resources and relationships through its activities and outputs.

4.5 To identify material sustainability-related risks and opportunities, an entity should consider

i. the potential effects of the events on the amount, timing and uncertainty of the entity's Performance, prospects and future cash flows over the short, medium and long term

ii. the range of possible impacts / outcomes and the likelihood of the possible impact / outcomes within that range.

iii. When considering possible impact / outcomes, an entity shall consider all pertinent facts and circumstances. Information about a possible future event is more likely to be judged as being material if the event is likely to occur and if the potential and probable effects are significant. However, an entity shall also consider whether information about low-probability and high-intensity impacts / outcomes might be material either individually or in combination with information about other low-probability and high-impact outcomes

iv. If a possible future event is expected to affect an entity's prospects and cash flows after a long time (in the future), information about that event, in such a case, is less likely to be judged material than information about a possible future event with similar effects that are expected to occur within a short period, or in the near future.

4.6 The entity's materiality assessment shall reflect both the materiality and impact as well as interconnections between the two,

4.7 It may not always be necessary to assess in depth each of the criteria of severity, based on the entity's specific facts and circumstances, to determine whether the impact is material or not. For example, when there is an established scientific consensus about the severity of a particular kind of global or localised environmental impact, the entity can conclude that it is indeed material without having conducted an in-depth analysis of its scale, scope and impact. Therefore, the entity shall exercise judgement, to determine what the appropriate level of the assessment of the severity criteria is.

4.8 Material Sustainability risks and opportunities are assessed based on their likelihood of occurrence and the potential magnitude of their effects in the short-, medium- and long-term. Therefore, the entity is required to identify and consider the list of potential material risks and opportunities and apply a set of objective thresholds for probable likelihood and expected magnitude as well as consider the nature of the effects of the identified risks and opportunities.

The following table suggests a simple compilation of the quantitative and qualitative factors of an identified SRRO to arrive at a consolidated score for each SRRO of an entity. The entity may compile the complete list of SRROs with their scores and apply professional judgement in determining relative materiality.

Continue to next page..

Materiality Chart for SRRO 1 in Unit Xxxx of Entity Yyyy, Zzzz for the perio starting MMM-YYYY to MMM-YYYY										
		Impact (Quantitative Assessment)					Impact (Qualitative Assessment)			
								Actionability		
Sr. No.	Impact area	UOM	Benchmark level	Actual/ Estimate	Likelihood of Occurance	Probable Impact (Estimate x Likelihood)	Favourable/ Unfavourable	High	Medium	Low
	Profit									
	Revenue									
	Reputation									
	Quality of product/Service									
	Business Process									
	Information Systems									
	Long-term assets									
	Long-term liabilities									
	Working Capital									
	Operating Costs									
	Compliance Cost									
	Financial Cost									
	Social Cost									
	Environmental Cost									
	Employees									
	Investors & Lenders									
	Vendors & Service Providers									
	Customers									
	Associates & Group entotoes									

Data visualisations such as charts, graphs or images may be used for each impact area to facilitate focussing on the most impacted area, and identifying the vulnerabilities and strengths of the entity. Further qualitative assessment criteria such as the permanence or reversibility of the impact may be added to the table.

It is essential to note here that besides monetary measurement of impact, other quantitative and qualitative assessments are required at the SRRO level. The unit within the entity for which such assessment is required may be different for each entity, based on circumstances such as business model, scale of operations, industry/sector, business process maturity, stage in the product life-cycle and geography.

The non-monetary quantitative measurements that can be linked to costs or spends may be disclosed in terms of both, monetary and other quantitative metrics. The use of Generally Accepted Cost Accounting Principles (GACAP) and the Cost Accounting Standards (CAS) issued by the Institute of Cost Accountants of India from time to time will provide a common lexicon used in presentation or disclosure and render comparability through standardised tools and techniques used in determining the SRRO costs and quantities.[1]

4.9 When performing the materiality assessment, an entity may reach out to stakeholders specifically in the context of its reporting process.

4.10 An entity shall apply the relevant criteria using appropriate quantitative and/or qualitative thresholds to assess the materiality of impacts and outcomes connected to its activities and operations, products and services, including through the upstream and downstream value chain

4.11 The severity of an actual or potential negative impact is assessed from the perspective

[1] Refernce Links: Resources of the Cost Accounting Standards Board of the ICMAIs and GACAP published by the ICMAI

of the affected people or the environment, and it is determined by the following characteristics that form the basis for determining the thresholds:

i. **Scale:** how grave the impact is

ii. **Scope:** how widespread the impact is (i.e., the number of individuals affected or the extent of the environmental damage); and

iii. **Irremediable character:** the extent to which the impact can be remediated

4.12 When setting up thresholds, priority should be given to available relevant, objective and supportable evidence for arriving at materiality conclusion. However, quantification of the potential impacts may not always be possible to support the materiality assessment.

4.13 The entity may refer to absolute monetary thresholds or to relative monetary thresholds such as a percentage of the amount corresponding to a line-item of its primary financial statements, its revenues, costs, total assets, or net equity. However, the entity shall consider that the time horizon for materiality assessment in sustainability reporting is longer than the typical time horizon factored in financial statements. This may result in the need to consider the cumulative effect of sustainability risks on revenues, costs, etc., over a longer period. Similarly, a threshold for likelihood needs to consider the cumulative probability over a period of time to cover the long-term horizon as well.

4.14 The materiality assessment of an entity's sustainability related risks and opportunities shall be based on the outcome of its due diligence process. The due diligence process includes steps to identify and assess negative impacts caused and contributed to by the undertaking as well as those connected to its operations, products or services through its business relationships including the undertaking's upstream and downstream value chain

4.15 Quantitative information is not always available, or may involve additional costs. When a qualitative analysis satisfies the test for materiality, additional quantitative information would add little or no value to the materiality assessment. As the materiality assessment process evolves over time, the entity may redefine the balance between qualitative and information.

4.16 In case of diversified global entity the parent undertaking may perform its materiality assessment using following different approaches or a combination of two.

i. a top-down approach, with an assessment performed at the group-level in terms of, and after taking into account, the business relationships and transactions with subsidiaries

ii. a bottom-up approach, with an assessment performed at the subsidiary level and consolidating the results at the group level.

4.17 Stakeholder engagement shall be used strategically used for identification and assessment of material impacts and outcomes. Engagement with affected stakeholders helps the undertaking to understand which sustainability matters are sources of concern for the respective stakeholders and how they are affected. This information may be useful input for the assessment.

4.18 The threshold that distinguishes material information from non-material information will be unique to each entity. In determining material information for reporting about the SRROs that could reasonably be expected to affect the organisation's prospects, the following factors need to be assessed:

i. The requirements of relevant sustainability reporting standards or frameworks that specifically apply to that SRRO.

ii. The relevance of the information to the entity's purpose and business, by considering the nature, magnitude and likelihood of actual or anticipated effects likely to emanate from the SRROs.

iii. Its relevance to key internal and external stakeholders – if information about an SRRO is critical for primary users, it could be material for reporting regardless of the magnitude of its potential effects

iv. Both quantitative and qualitative factors, such as the magnitude and the nature of the effect of an SRRO on the entity, should be assessed.

v. Evaluate what can cause an SRRO to affect an entity's performance, prospects and cash flows over the short, medium and long term and how quickly it can happen.

5. A Case study – Materiality assessment

A company in Pharmaceutical sector

i. Engaged with employees, investors, policy makers and patient advocacy groups

ii. Identified key sustainability risks including climate change, ethical governance

iii. Mapped issues on a materiality matrix evaluation

a. business impact b. Stakeholders impact

iv. Used the results to refine their sustainability strategy, decision making and initiatives, and disclosures

6. Aggregation/Disaggregation

6.1 The undertaking may aggregate or disaggregate the Sustainability related information at the most appropriate level according to its facts and circumstances.

For the purposes of consolidated reporting at the holding or parent entity level, aggregation of unit or sub-unit level information may have an offsetting effect, where adverse impact on one unit is offset by gains in another unit for a given SRRO. Here, the entity must disclose pertinent information when the deviations at the unit levels from mean impact of and on the entity are wide, and not explained by the aggregates.

6.2 The disaggregation of sustainability related information for materiality purposes should reasonably and fairly reflect the severity of impacts and outcomes or the severity and likelihood of potential impacts.

6.3 Where the severity of impacts could be obscured by aggregating data, the entity should disaggregate per country, site, asset or subsidiary to meet the qualitative characteristics of information, namely relevance and faithful representation when disclosing the severity of the related impact. Disaggregation of data should focus on the specific facts and circumstances of the reporting entity. The entity could adopt a different level of disaggregation for two separate sustainability matters within the same topic depending on the circumstances.

Care should be taken to balance the tone, form, language and appropriate level of disclosure while reporting disaggregated SRRO information, to avoid uncalled for bias in the stakeholders' decision processes, and to preserve the clarity and materiality aspects.

7. Materiality judgements[1]

7.1 When making materiality judgements, an entity considers whether the item of information could reasonably be expected to affect stakeholders' assessment of the amount, timing and uncertainty of prospects and future net cash inflows to the entity which could influence stakeholders' decisions,

7.2 Information about a possible future event that is expected to affect an entity's prospects and cash flows many years in the future is less likely to be material than information about a possible future event with similar effects that has the possibility of occurring sooner.

In the context of the ISS 1, the term 'prospects may include future profitability, business continuity, growth or impairment in value, reputation, social acceptance, governance and regulatory framework, and other such facets of the entity as may be of concern to the stakeholders in the short, medium and long term.

8. Reassess materiality judgements

8.1 The ISS 1 requires materiality judgements to be reassessed at each reporting date, taking into account changed (or new) circumstances and assumptions.

8.2 An entity shall reassess its materiality judgements at each reporting date to take account of changed circumstances and assumptions. Because of changes in the entity's individual circumstances, or in the external environment, some types of information included in an entity's sustainability-related financial disclosures for prior periods might no longer be material. Conversely, some types of information not previously disclosed might become material. The ISS 1 requires materiality judgements to be reassessed at each reporting date, taking into account changed (or new) circumstances and assumptions. The changes may be in the entity, its environment, the value chain or the relationships, over time.

For example,

i. Social media and privacy regulations were not financially material for Tech companies in the early 2000s, but have become material today due to consumer data protection laws.

ii. Fast-fashion brands initially overlooked supply chain labour conditions, but regulatory and consumer activism made it a financial and reputational risk over time.

9. Consideration of quantitative factors

An entity ordinarily assesses whether information is quantitatively material by considering the size of the effect of the sustainability-related risk or opportunity against other related measures. The entity needs to assess whether the effect is of such a size that information about the sustainability-related risk or opportunity could reasonably be expected to influence stakeholders' decisions. Examples of quantitative factors might include impact on prospects and cash flows, return on investment or market share.

10. Consideration of qualitative factors

Qualitative factors which an entity may consider in making materiality judgements would depend upon characteristic of the entity, such as its governance, and its interactions with its stakeholders, society, the economy and the natural environment throughout the entity's value chain, that ultimately give rise to sustainability-related risks or opportunities.

Examples of entity-specific qualitative factors and external qualitative factors.

[1] ISS 1 Para 5.4 Materiality read with Para 15 Judgements, Assumptions and Errors

11. Entity-specific qualitative factors

Entity-specific qualitative factors refer to those factors that are unique to the entity, and include distinguishing attributes, key characteristics, and other pertinent elements such as the nature of the sustainability risk or opportunity in the context of the entity and the extent to which the entity's business model and strategy depend on specific resources or relationships impacted by the SRRO. For example, relationships with important suppliers or customers; and unexpected variation or change in trends.

In some circumstances, the entity might decide that a quantitatively immaterial amount is material in qualitative terms. For example, a hitherto good and secure asset may need to be flagged because of an unexpected change in the regulatory environment, as compared to the prior-period, and require action such as an amount provided in the sustainability-related disclosures.

A recent example is that of BS V emission standards being entirely skipped in India and transitioning directly into BD VI from BS IV. Auto-makers had to provision previously good inventories of spare-parts earlier than planned, discard designs to meet the expected but unreleased BS V norms, and start working on BS VI compliant products, spares and services. BS VI is in the third phase of implementation, and auto-makers are preparing for BS VII roll-out in the near term.

11.1 External qualitative factors

Examples include:

- the entity's geographical location; • the entity's industry or sector; and
- the state of the economy or economies in which the entity operates. Entities operating in the same industry or region might share several external qualitative factors. External qualitative factors could remain constant over time or could change.

11.2 Quantitative / Qualitative have no hierarchy:

Neither quantitative factors nor qualitative factors are more important than the other. As an entity assesses the materiality of information by considering both quantitative and qualitative factors, it would be inappropriate for the entity to rely on purely numerical guidelines or to apply a uniform quantitative threshold for all materiality judgements.

Favouring monetary measurement of impact and ranking of the SRRO only based on monetary impact values are some of the common pitfalls that the preparers and users of sustainability-related disclosure reports should guard against. Further, inclination towards predominant use of quantitative measures stems from the ease of understanding, lower involvement of judgement and lesser risk of biases creeping into the ranking. In sustainability reporting, these propositions do not hold good. Both, qualitative and quantitative factors need to be assessed fairly to arrive at a true and fair report, to facilitate drawing inferences for stakeholder decision-making.

12. Disclosing material information[1]

12.1 If an entity concludes that a particular piece of information is necessary to enable stakeholders to understand the effects of a sustainability-related risk or opportunity on the entity's performance, prospects and cash flows, it is to be considered material, and the entity

[1] ISS 1 Para 17.2 Disclosures

should disclose this information, regardless of whether it is specifically required by ISS 1 or not.

12.2 An entity shall not obscure material information. Information is obscured if it is communicated in a way that would have a similar effect for stakeholders as would be case if the information is omitted or misstated.

12.3 Examples of circumstances that might result in material information being obscured include:

material information is disclosed in the sustainability-related risk or opportunity is disclosed, but the language used is vague or unclear;

material information about a sustainability-related risk or opportunity is scattered throughout the sustainability-related disclosures;

the ease of understanding of the sustainability-related disclosures is reduced due to material information being hidden by immaterial information, as a primary user is unable to determine what information is material. Information overload obscures material information as too much and too detailed technical discussion on the material information not fully understood by the primary cause the focus and attention of the user to be diluted.

13. Scenario analysis[1]

i. A scenario describes a path of development leading to a particular outcome.

ii. Scenarios are not intended to represent a full description of the future, but rather to highlight central elements of a possible future and to draw attention to the key factors that will drive future developments.

iii. They are hypothetical constructs, not forecasts or predictions

iv. In a world of uncertainty, scenarios are intended to explore alternatives that may significantly alter the basis for "business-as-usual" assumptions.

v. The goal of a scenario analysis is to explore the way that factors interact, and the probable reaction(s) that each action should have.

vi. When thinking about the major sources of uncertainty, scenarios should try to explore alternatives that will significantly alter the basis for business-as-usual assumptions.

vii. Entities should carefully consider the key parameters, assumptions, and other analytical choices made during scenario analysis as well as the potential impacts or effects that are identified

viii. Entities should disclose the approach used for selecting scenarios used as well as the underlying assumptions for each scenario regarding how a particular pathway might develop, e.g. emergence and deployment of key technologies, policy developments and timing, geopolitical environment around climate policies.

ix. Transparency around key parameters, assumptions, and analytical choices will help to support comparability of results between different scenarios used by an entity and across entities.

13.1 Scenario analysis characteristics

Scenario analysis is a process for identifying and assessing a potential range of outcomes of future events under conditions of uncertainty. The following characteristics of Scenario analysis may be considered:

[1] ISS 1 Para 4.8 (Definition) read with Para 5.10 (Principles of Identification & Measurement)

i. Plausible - The events in the scenario should be possible and the narrative credible (i.e. the descriptions of what happened, and why and how it happened, should be believable).

ii. Distinctive - Each scenario should focus on a different combination of the key factors.

iii. Scenarios should be clearly differentiated in structure and in message, not variations on a single theme.

iv. Multiple scenarios should be used to explore how different permutations and/or temporal developments of the same key factors can yield very different outcomes.

v. Consistent - Each scenario should have strong internal logic.

vi. The goal of scenario analysis is to explore the way that factors interact, and each action should have a reaction.

vii. Relevant - Each scenario, and the set of scenarios taken as a whole, should contribute specific insights into the future that relate to strategic and/or financial implications of climate-related risks and opportunities.

13.2 Organizations should include scenario analysis into strategic planning and/or sustainability related risk management processes by:

Identifying and defining a range of scenarios, that provide a reasonable diversity of potential future sustainability related risks as well as opportunities states

Evaluating the potential resiliency of their strategic plans to the range of scenarios.

Evaluating what scenarios (and narratives) are appropriate, given the exposures? Consider input parameters, assumptions, and analytical choices. What reference scenario(s) should be used?

13.3 An entity may, for additional guidance on scenario testing and crisis management, refer to the following link: *https://www.accaglobal.com/content/dam/ACCA_Global/professional-insights/climate-disruptions Crisis%20Management%20Skills%20Guide%2004122024%20(004).pdf*

14. Commercially sensitive information

14.1 If an entity determines that information about a sustainability-related opportunity is commercially sensitive, the entity may omit that information from its sustainability-related disclosures in the public domain.

14.2 An entity qualifies for the exemption if, and only if:

i. information about the sustainability-related opportunity is not already publicly available;

ii. disclosure of that information could reasonably be expected to prejudice seriously the economic benefits the entity would otherwise be able to realise in pursuing the opportunity;

14.3 If an entity elects to use the exemption, the entity shall, for each item of information omitted:

i. disclose the fact that it has used the exemption; and

ii. reassess, at each reporting date, whether the information qualifies for the exemption.

15. Connected information

15.1 Connected information provides insight into connections between the items to which the information relates. For example:

i. if an entity pursued a particular sustainability-related opportunity and that resulted in an increase in the entity's revenue, connected information will depict that relationship between the entity's strategy, performance and cash flows over short, medium and long term

ii. if an entity identified a trade-off between two sustainability-related risks it is exposed to and acted on the basis of its assessment of that trade-off, connected information will depict the relationship between those risks

iii. if an entity committed to a particular sustainability-related target, but that commitment has not yet affected the entity's performance and cash flows because the applicable recognition criteria have not been met, connected information will depict that relationship.

15.2 Connected information includes:

Connections between various types of information about a particular sustainability-related risk or opportunity, such as:

i. between disclosures on governance, strategy, and risk management; and

ii. between qualitative information and quantitative information (including related metrics and targets and information in the related financial statements).

iii. connections between disclosures about various sustainability-related risks and opportunities. For example, if an entity integrates its oversight of sustainability-related risks and opportunities, the entity shall integrate the disclosures on governance instead of providing separate disclosures on governance for each sustainability-related risk and opportunity.

15.3 Connected information would be expected to cover;

i. Connections between material insights around governance, strategy, targets and metrics, and risk management

ii. Connections between business activities and over time (short to long-term or past to future) – e.g. how transition risk associated with an organisation's net zero strategy is reflected in revised targets.

iii. Connections between processes to produce sustainability-related or financial information that creates opportunities for continual improvement of business activities – e.g. stakeholder management and reporting to them, employee development, information processes, and systems connectivity

16. Information included by cross-reference

16.1 Material information may be included in an entity's sustainability-related disclosures by cross-reference, provided that the cross-referenced information is available on the same terms and at the same time as the sustainability-related disclosures.

17. Metrics[1]

[1] ISS 1 Para 14 Metrics and Targets

17.1 Metrics are quantitative measures that assess a company's performance in various sustainability areas. Metrics allow businesses to track progress, identify areas of improvement, and compare performance across industries or periods. They are often standardised to enable comparability and transparency.

17.2 Entity should consider disclosing metrics that support their scenario analysis and strategic planning process and that are used to monitor the organization's business environment from a strategic and risk management perspective.

17.3 Metrics should be provided for historical periods to allow for trend analysis. Where appropriate, organizations should consider providing forward-looking metrics consistent with their business or strategic planning time horizons.

17.4 Entity need to consider how KPIs are collated and reported internally – whether they make sense when aggregated and reported at a group level, or would be more usefully reported at business segment level. In some instances, it may be more appropriate to report separately KPIs for each business segment if the process of aggregation renders the output meaningless. For example, it is clearly more informative to report a retail business segment separately rather than combining it with a personal financial services segment.

17.5 An entity shall disclose, for each sustainability-related risk and opportunity that could reasonably be expected to affect the entity's prospects:

17.6 An entity shall disclose metrics the entity uses to measure and monitor:

i. that sustainability-related risk or opportunity; and

ii. its performance in relation to that sustainability-related risk or opportunity, including progress towards any targets the entity has set, and any targets it is required to meet by law or regulation.

17.7 Metrics disclosed by an entity shall include metrics associated with the particular business models, activities or other common features that characterise an industry.

17.8 An entity disclosing short, medium-term or long-term targets should also disclose associated interim targets in aggregate or by business line, where available.

17.9 If a metric has been developed by an entity, the entity shall disclose information about:

17.9.1 the manner in which the metric is defined, including whether it is derived by adjusting a metric taken from a source if so, which source and how the metric disclosed by the entity differs from the metric specified in that source

17.9.2 whether the metric is an absolute measure, a measure expressed in relation to another metric or a qualitative measure

17.9.3 The definition and calculation of metrics, including metrics used to set the entity's targets and monitor progress towards reaching them, shall be consistent over time

17.10 An entity shall disclose information about the targets it has set to monitor progress towards achieving its strategic goals, and any targets it is required to meet by law or regulation.

17.11 If an entity redefines or replaces a metric in the reporting period, the entity shall:

i. disclose a revised comparative amount, unless it is impracticable to do so;

ii. explain the changes; and

iii. explain the reasons for those changes, including why the redefined or replacement metric provides more useful information.

17.12 Sometimes, it is impracticable to revise a comparative amount to achieve comparability with the reporting period. For example, data might not have been collected in the preceding period in a way that allows retrospective application of a new definition of a metric, and it might be impracticable to recreate the data. If it is impracticable to revise a comparative amount for the preceding period, an entity shall disclose that fact.

18. Targets and KPIs[1]

18.1 Targets refer to an entity's specific, time-bound goals to improve its sustainability performance. At the same time, Key Performance Indicators (KPIs) are the measurable benchmarks that help assess the company's progress towards achieving these targets. Setting clear and actionable targets helps establish concrete objectives for improving sustainability practices, providing a roadmap for achieving them. KPIs are an effective way to track progress over time, ensuring the company moves toward these objectives.

18.2 Entity should reflect on whether the KPIs chosen continue to be relevant over time. Strategies and objectives develop over time, making it inappropriate to continue reporting on the same KPIs as in previous periods. Equally, more information may become available to management, facilitating reporting of new KPIs that provide a deeper understanding of the business, or changing how an existing KPI is calculated.

18.3 KPIs should be linked to strategy - The primary reason for including performance indicators in corporate reporting is to enable readers to assess the strategies adopted by the company and their potential to succeed. KPIs presented in isolation from strategies and objectives, or vice versa, cannot fulfil this requirement, and will fail to provide the stakeholders with the level of understanding they need.

18.4 Entity should explain why it believes a performance indicator is relevant.

18.5 To enable stakeholders to make their own assessment of the reliability of the information, it is important to identify the sources of the data used in calculating performance indicators and any limitations on that data. Any assumptions made in measuring performance should be explained so that readers can reach an informed view of judgements made by management. An indication of the level, if any, of independent assurance of the data would also be valuable.

18.6 Often KPIs make little sense when consolidated at group level. In those instances, corporate reporting users want more detailed segmental information to assess progress towards specific segmental strategic aims. Performance indicators that are relevant to a specific segment's industry or strategy should therefore be provided in addition to those with a more group-wide focus.

18.7 Given the rapidly increasing usage of industry-specific terminology, clear definitions of performance indicators add greatly to the reader's understanding of exactly what is being measured and allows comparisons between companies within an industry. In the absence of standards for the measurement of many industry-specific indicators, and with many companies also applying their own indicators, an explanation of the components of a metric and how it is calculated is vital.

18.8 For each target, the entity shall disclose:

i. the metric used to set the target and to monitor progress towards reaching the target;

[1] ISS 1 Para 14 Metrics and Targets

ii. the specific quantitative or qualitative target the entity has set or is required to meet;

iii. the period over which the target applies;

iv. the base period from which progress is measured;

v. any milestones and interim targets;

vi. performance against each target and an analysis of trends or changes in the entity's performance; and

vii. any revisions to the target and an explanation for those revisions.

18.9 Definition and calculation of metrics, including metrics to set targets and monitor progress towards reaching them shall be consistent over time

18.10 If the entity redefines or replaces a metric in the reporting period, the entity shall:

i. disclose a revised comparative amount, unless it is impracticable to do so;

ii. (b)explain the changes; and

iii. (c)explain the reasons for the changes, including why the redefined or replacement metric provides more useful information.

19. Disclosures on Judgements[1]

An organization shall disclose information to enable stakeholders to understand judgements made

i. In the process of making sustainability - related disclosures

ii. Have the most significant effect on the information included in those disclosures

For example, an entity makes judgement in

i. Identifying SRROs that could reasonably be expected to affect the entity's performance, prospects and cash flows over the short, medium and long term.

ii. Identifying material information to include in the sustainability - related disclosures

iii. Assessing whether an event or change in circumstances is significant and requires reassessment of the scope of all affected SRROs throughout the entity's value chain.

For example,

i. A significant change in entity's value chain (e.g. a supplier in the value chain makes a change that significantly alters the suppliers green -house emissions

ii. Significant change in entity's business model (e.g. a merger or acquisition that expands the entity's value chain)

iii. A significant change in entity's exposure to SRROs (e.g., a supplier in value chain is affected by introduction of new regulation that the entity had not anticipated)

20. Disclosure on measurement uncertainty[2]

Disclosure on measurement uncertainty shall

i. Identify amounts that are subjected to high level of measurement uncertainty

ii. In relation to each amount in (a) disclose information about

[1] ISS 1 Para 15 Judgement, Assumptions and Errors
[2] ISS 1 Para 15.2

c. Source of measurement uncertainty (e.g. a dependence of the amount on the outcome of a future event, dependence on a measurement technique, dependence on availability or quality of data from the entity's value chain

d. Assumptions, approximations, and judgements made in measuring the amount.

21. Errors[1]

21.1 ISS 1 requires an entity to correct material prior period errors.

21.2 Such errors include: the effects of mathematical mistakes, mistakes in applying the definitions for metrics or targets, oversights or misinterpretations of facts, and fraud or misstatement.

21.3 Potential reporting period errors discovered in that period are corrected before the sustainability-related disclosures are authorised for issue. However, material errors are sometimes not discovered until a subsequent period.

21.4 If an entity identifies a material error in its prior period(s) sustainability- related disclosures, it shall disclose

i. the nature of the prior period error

ii. the corrections, to the extent practicable, for each prior period disclosed

iii. If correction of the error is impracticable, the circumstances that led to the existence of that condition and a description of how and from when the error has been corrected

21.5 When it is impracticable to determine the effect of an error on all prior periods presented, the entity shall restate the comparative information to correct the effort from the earliest date practicable.

22. IT Tools for Sustainability Risk management[2]

Following Information Technology tools can provide a robust architecture for dealing with sustainability reporting action

Data platforms

Data platforms include data warehouses, data lakes, and data lake houses, each of which has unique features to improve sustainability reporting. They can support complex types of data, improve data integrity, and enforce relationships between data points.

Data Warehouse

A central repository of integrated data from multiple, disparate sources; stores current and historical data and is designed for query and analysis rather than for transaction processing

i. Can aggregate sustainability KPIs across departments or geographic locations

ii. Could be optimized for fast querying

iii. Can perform trend analysis based on historical data

iv. Energy usage by facility and equipment, including peak usage times and energy sources

v. Breakdown of GHG emissions based on geographic location and operational unit

vi. Data on water intake, waste recycling, and disposal methods across different stages of operations

[1] ISS 1 Para 15 Judgement, Assumptions and Errors
[2] ISS 1 Para 12 Risk Management

vii. Supplier compliance score

viii. Metrics on employee engagement in sustainability programs and CSR initiatives

Data Lakes

Centralized, scalable repository for structured, semi structured, and unstructured data; can handle vast amounts of data in raw format and is designed to store data from various sources in native format until it is needed.

i. Scalability in handling large volumes of diverse data

ii. Flexibility that allows raw data to be stored, which can later be transformed or processed

iii. More cost-effective for storing large amounts of data compared with traditional databases

iv. Real-time data streams from internet-of-things (IoT) devices tracking energy and resource usage in manufacturing

v. Images for deforestation tracking, water body monitoring, and urban sprawl

vi. Unstructured data from social platforms to gauge public sentiment on the company's sustainability

vii. Data that assesses the impact of operations on local community and wildlife

viii. Models and simulations that predict the potential impact of climate change on operations

Data Lake House

i. Provides the data management capabilities of a data warehouse while maintaining the flexibility and scalability of data lakes

ii. Unified architecture that supports raw and structured data

iii. Support for large-scale and real-time data processing and analytics

iv. Reduced need for separate systems and data integration processes

v. Data management capabilities that can provide better governance Real-time production line data such as monitoring outputs, energy use, and waste generation

vi. Logistics data tracking product movement, associated GHG emissions, and opportunities for route optimizations

vii. Commute data from the employees' modes of transportation

viii. Internal and external sustainability audits

ix. Aggregated data on market trends and consumer preferences for sustainable products

x. ROI of sustainability initiatives where structured financial data is integrated with unstructured, nonfinancial ESG metrics

There is no single data platform that fits all scenarios. It would depend on the organization's specific reporting requirements and business objectives. For example, recycling and packaging data or similar environmental sustainability metrics often consist of both structured and unstructured data. This includes quantitative data such as amounts of materials recycled, types of materials used in packaging, and the efficiency percentage of recycling processes. They also include qualitative assessments like supplier sustainability practices, consumer feedback on packaging, images and videos of packaging and waste management, and data from IoT sensors.

The right data platform depends on the operational context of the organization. For companies primarily dealing with large volumes of diverse, unstructured data, a data lake or a data lake house would be more appropriate. However, for those focused on high-speed analysis and structured reporting, a data warehouse is a strong option.

22.1 IT infrastructure considerations for sustainability reporting

The IT infrastructure serves as the necessary technological foundation for managing and analysing sustainability data.

Cloud - Cloud solutions and services based on the organization's security, scalability, and performance needs. Encompasses hardware resources, development tools, and software. Affects scalability and flexibility in data storage and processing as well as collaboration and data sharing.

Integration of Advanced Analytics - Implementation of platforms for statistical analysis, predictive modelling, and machine learning algorithms as well as tools for converting data into visualized, dynamic reports. Supports faster decision-making and predictive insights into the company's sustainability performance.

Software and Applications - Tools for data ingestion, data cleansing, processing, and analytics, including specialized sustainability management software applications that create dynamic reports and visualizations to communicate sustainability performance, enables analysis and interpretation to uncover insights on sustainability performance Provides stakeholders with comprehensible and actionable sustainability reports.

Compliance - Solutions to protect data integrity and specialized tools to help manage compliance with environmental regulations and standards. Protects sensitive sustainability data and ensures that sustainability reporting practices comply with regulatory requirements.

Communication - Systems and collaborative platforms that enable the organization to share its sustainability initiatives across the company Solutions for securely exchanging sustainability data or report with external stakeholders such as third-party auditors.

Companies that operate across multiple regions or globally could have more significant challenges, particularly in consolidating complex and fragmented data that typically comes from both internal and external sources. These tools, technologies, and best practices can help:

Utilize a centralized repository: Cloud platforms such as Amazon Web Services (AWS), Google Cloud, and Microsoft Azure have extensive tools for data integration and management that help ensure a single source of truth for sustainability reporting. They can be complemented by cloud-native ETL services that provide capabilities for data extraction, transformation, and loading.

Employ automated data integration tools: Ensure seamless data flow from diverse sources into the central repository. Data virtualization techniques can create a unified representation of data from multiple sources without the need to move or copy the data. This helps maintain data integrity and reduces redundancy. Additionally, APIs enables smoother exchanges of data between different systems. These APIs can be customized or utilized from prebuilt selections, depending on the compatibility and needs related to systems that might not be natively supported.

Reinforce data governance: A robust data governance framework ensures the availability,

usability, integrity, and security of the data used. There should be data quality metrics, role-based access controls, and processes that manage changes in the data environment (such as adding new data sources or updating the IT infrastructure).

In implementing sustainability reporting with technology as an enabler, it is generally recommended that reporting entities:

i. Set a clear strategy for using technology to facilitate sustainability reporting

ii. Ensure the right level of governance is built into the technology

iii. Assess the credibility of technology used in sustainability reporting

However, in avoiding the risk of disclosure overload and users' difficulty of accessing information when technology is extensively used, it is additionally recommended that;

i. Entities should, where feasible, assess which technologies or information systems best support timely access to decision-useful information while helping to minimise information overload.

ii. Disclosures that are not expected to vary significantly from year to year may be provided as publicly accessible standing information, for example, on the entity's website.

22.2 AI and machine learning for sustainability reporting

i. Using AI and machine learning (ML) for sustainability is a growing trend that will further accelerate in the coming years. Many enterprises and public agencies have already implemented AI and ML in their sustainability initiatives, but they can also be applied to reporting.

ii. AI-powered tools that identify anomalies or inconsistencies and automate the validation process. ML algorithms that apply uniform metrics to all datasets.

iii. AI solution that consolidates various kinds of sustainability data across multiple regions into a unified, global sustainability report

iv. Deploying ML models for predicting future emissions

v. Using natural language processing (NLP) for transforming raw data into clear, comprehensible reports for all stakeholder

vi. Using vision-based AI systems, using ML to predict future waste

vii. Using AI to analyse sustainability data from multiple external sources and using ML algorithms to automatically generate reports

viii. NLP-powered systems automatically gathering and analysing reports and audit data from suppliers, ML models that predict potential compliance risks

ix. AI-powered solution that enhances existing datasets or maps missing data. Enabling the company to see how different actions or strategies could affect sustainability outcomes.

23. Change Management:[1]

The entity should formulate and disclose its policies for managing changes to the SRRO disclosure processes. Standard operating procedures and designated authority-responsibility matrix should be defined for the purpose. Whenever there is a change in the methods applied for the Identification and measurement of sustainability related risks and their impact during the reporting period and it has a material impact on the inferences drawn from and/or

[1] ISS 1 Para 17.2.8

interpretation of the presented information, the comparable prior period information should be recast as per the new methodology/process and major differences caused by the change should be ascertained, to the extent feasible. Where such ascertainment is not feasible, the fact should be disclosed along with the extent of risks of mistakes, misrepresentation and errors involved in the present report.

Guidance Note
ICMAI Sustainability Standard (ISS 2)
Climate related disclosures

ICMAI assumes no responsibility or liability whatsoever for the content or any consequences or damages - whether direct, indirect or incidental - arising from or following the advice or guidance contained in this document. This application guidance is sector-agnostic. Users of this document are advised to exercise their own professional judgment in applying ISS 2. Where content in this Guidance appears to contradict the requirements in the ISS 2, the requirements of ISS 2 shall prevail.

Objective: The objective of this non-authoritative Application Guidance is to support the implementation activities of preparers of Sustainability-related Disclosures and other users of ISS 2. ISS 2 requires an entity to consider its exposure to climate-related risks, their impact, as well as opportunities in the assessment of its context and circumstances while providing climate-related disclosures. This provides a basis for determining the relevant and appropriate approach to climate-related disclosures, which may be quantitative or non-quantitative.

1.Climate related risk[1]

Climate-related risks are a subset of the broader sustainability-related risks. The ISS 2 provides a focussed set of principles, methods, and disclosure norms specifically for the climate-related physical risks, climate-related transition risks and climate-related opportunities. There is a need for standardisation in the preparation and use of climate-related disclosures to make entity level reports comparable with other entities locally and globally. It will facilitate roll-up of the impact related data to assess the national and global impacts and measure the effectiveness of the measures (policies, projects, initiatives, drives) undertaken by the governments and the UN. The key difference between climate-related risks and other environmental or nature-related risks is the geographic location and extent of the impact. Climate refers to the atmospheric conditions of a particular location over time, and consists of temperature, atmospheric pressure, humidity, precipitation, wind patterns, sea levels and seasonality. Climate-related risks refer to the risks arising from change in climatic conditions over time. Climate-related risks often have a global impact and may be irreversible, and these events can exacerbate nature-related risks. Nature-related risks refer to a broader category of risks which arise from nature-dependent threats and impacts. Risks of depletion of natural resources, water pollution, earthquakes etc. are examples of nature-related risks, which may be seen in particular geographies. The impacts may be localised, and in some cases reversible through human intervention.

1.1 Physical Risks

Physical risks resulting from climate change can be event-driven (acute) or longer-term shifts (chronic) in climate patterns. Physical risks may have financial implications for organizations, such as direct damage to assets and indirect impacts such as those from supply chain

[1] ISS 2 Para 3 Scope and Para 4 Definitions

disruption. The organizations' financial performance may also be affected by changes in water availability, sourcing, and quality, food security, and extreme temperature changes, which are a direct fall-out of climate change. These affect the organizations' assets such as premises, operations, supply chain elements such as transport, and employee safety.

Explanatory Note: The natural disasters caused by earthquakes do not classify as acute climate-related events, as these are not caused by a change in climatic factors such as temperature, precipitation, a rise in the sea-level or an extreme weather event.

1.1.1 Acute Risk- Acute physical risks refer to those that are event-driven, including increased severity of extreme weather events, such as cyclones, hurricanes, floods, wildfires, heat waves, and cold waves. These hazards or events occur suddenly and can cause immediate disruptions and financial consequences. The suddenness of change in climatic factors and the severity of impact sets them apart. These events give very little time for damage control or mitigation.

1.1.2 Chronic Risk- Chronic physical risks refer to longer-term shifts in climate patterns (e.g., sustained higher temperatures) that may cause sea level rise or chronic heat waves. Chronic risks emerge slowly, with gradual shift in climatic factors such as temperature, rainfall, gradual soil erosion, prolonged droughts, and frequent floods. For a climate-related risk to be classed as chronic, it must satisfy the following conditions:

a. Its occurrence must be frequent, recurring, persistent over time (e.g. seasonal), and reasonably predictable, caused by gradual change in climate

b. Its impact on the lives, livelihood, infrastructure, and environment must be predictable

c. It must cause long-term accumulation of ecological, economic and social stress.

The physical risks of seasonal hurricanes in the state of Orissa are an example of chronic climate-related physical risks.

1.2 Transition Risks:

Transitioning to a lower-carbon economy may entail extensive policy, legal, technology, and market changes to address mitigation and adaptation requirements related to climate change. Depending on the nature, speed, and focus of these changes, transition risks may pose varying levels of financial and reputational risk to organizations.

Governments, society, and the global community are striving to control climate change. These climate actions manifest in the form of laws, regulations, societal pressures, multi-lateral accords and pacts, advocacy, etc. that make change-over to greener products, processes, and services imperative. This transition from the as-is to the new norms involve risk in many forms – economic, regulatory, social, reputational, obsolescence, and technological risks. The main criteria for a climate-related risk to be classed as a transition risk are:

a. It stems from policy reform or regulatory changes,

b. It poses a financial, market, technological, litigation and reputational risk arising from climate actions of climate-conscious governments, consumers, investors, or communities,

c. Technological, product, process, or other operational adaptations are required to meet the changes required.

Transition risks differ from the physical risks. The climate-related physical risks arise from the

changes in climate. The transition risks arise from climate action by governments and communities.

The risks arising from the issuance of the BS VII (planned) emission norms in India (in line with the Euro VII norms) is an example of climate-related transition risk.

1.2.1 Policy and Legal Risks- Policy actions around climate change continue to evolve. Their objectives generally fall into two categories—policy actions that attempt to constrain actions that contribute to the adverse effects of climate change or policy actions that seek to promote adaptation to climate change. Some examples include implementing carbon-pricing mechanisms to reduce GHG emissions, shifting energy use toward lower emission sources, adopting energy-efficiency solutions, encouraging greater water efficiency measures, and promoting more sustainable land-use practices. The risk associated with and financial impact of policy changes depend on the nature and timing of the policy change. Production Linked Incentive schemes for EV mobility in India is an example of policy change for climate action. Auto-makers run the risk of loss of demand for conventional fuel vehicles, and need to make changes to products, services, markets, technology and design to meet this challenge. This is a climate-related transition risk.

1.2.2 Technological risk- Technological improvements or innovations that support the transition to a lower-carbon, energy- efficient economic system can have a significant impact on organizations. For example, the development and use of emerging technologies such as renewable energy, battery storage, energy efficiency, and carbon sequestration (capture and storage) will affect the competitiveness of certain organizations, their production and distribution costs, and ultimately the demand for their products and services from end users. To the extent that new technology displaces old systems and disrupts some parts of the existing economic system, winners and losers will emerge from this “creative destruction” process. The timing of technology development and deployment, however, is a key uncertainty in assessing technology risk.

1.2.3 Market Risk- While the ways in which markets could be affected by climate change are varied and complex, one of the major ways is through shifts in supply and demand for certain commodities, products, and services, as climate-related risks and opportunities are increasingly considered. The changes in supply-demand dynamics, pricing, consumer and investor behaviour in response to such transition have a potential for financial impact on the entities. These risks are termed as market risks.

1.2.4 Reputational risk- Climate change has been identified as a potential source of reputational risk tied to changing customer or community perceptions of an entity’s contribution to or distraction from the transition to a lower carbon economy. These may arise from public perception, loss of stakeholders’ trust in the entity caused by poor ESG rating or assessment results, scrutiny, or punitive action against the entity by regulators, rather than from a direct result of market changes.

1.3 Climate-related risks include negative effects of climate change on performance, prospects and cash flows of an entity over the short, medium and long term. These risks are categorized as climate-related physical risks and climate-related transition risks. Climate-related opportunities refer to the positive effects and impacts arising from efforts to mitigate and adapt to climate change.

1.4 In identifying the climate-related risks and opportunities that could reasonably be expected to affect an entity’s prospects, the entity shall use all reasonable and supportable

information that is available to the entity at the reporting date without undue cost or effort, including information about past events, current conditions, and forecasts of future conditions.[1]

1.5 An entity should use climate-related scenario analysis to assess its climate resilience, using an approach that is commensurate with its circumstances. The entity is required to use an approach to climate-related scenario analysis that enables it to consider all reasonable and supportable information that is available to the entity at the reporting date without undue cost or effort.

1.6 An entity shall use an approach to climate-related scenario analysis that is commensurate with its circumstances as at the time the entity carries out its climate-related scenario analysis. To assess its circumstances the entity shall consider:

a. the entity's exposure to climate-related risks and opportunities and

b. the skills, capabilities, manpower and other resources available to the entity for the climate-related scenario analysis.

1.7 Climate-related scenario analysis can be resource intensive and might – through an iterative learning process – be developed and refined over multiple planning cycles. As an entity repeats the climate-related scenario analysis, it is likely to develop skills and capabilities that will enable the entity to strengthen its approach to climate-related scenario analysis over time.

1.8 An entity shall disclose information that enables stakeholders to understand[2] the climate-related risks and opportunities that could reasonably be expected to affect the entity's performance, prospects and cash flows, over the short, medium or long term. Specifically, the entity shall:

a. describe climate-related risks and opportunities that could reasonably be expected to affect the entity's performance, prospects and cash flows, over the short, medium or long term

b. explain, for each climate-related risk the entity has identified, whether the entity considers the risk to be a climate-related physical risk or climate-related transition risk;

c. specify, for each climate-related risk and opportunity the entity has identified, over which time horizons—short, medium or long term — the effects of each climate-related risk and opportunity could reasonably be expected to occur; and

d. explain how the entity defines 'short term,' 'medium term' and 'long term' and how these definitions are linked to the planning horizons used by the entity for strategic decision-making.

2. Determining the appropriate approach[3]

2.1 An entity shall use an approach for disclosure of climate risk - related information that is appropriate and in line with the context and circumstances prevailing at the time the entity provides sustainability- related Information. Context and circumstances may be assessed based on consideration of the following factors:

a. The susceptibility of the entity to climate-related risks and opportunities.

[1] ISS 2 Para 5 Principles of Identification and Measurement
[2] ISS 2 Para 6.4 Climate related risks and opportunities
[3] ISS 2 Para 5.2 Exposure to climate related risks and opportunities

b. The availability of necessary skills and resources for providing climate risk - related disclosures.

2.2 An entity shall determine an approach to climate-related scenario analysis that enables it to consider all reasonable and supportable information that is available to the entity at the reporting date without undue cost or effort. The determination of the approach shall be informed by the assessments of the entity's exposure to climate-related risks and opportunities and its available skills, capabilities, and resources. Making such a determination involves:

a. selecting inputs to the climate-related scenario analysis, and

b. making analytical choices about how to carry out the climate-related scenario analysis

2.3 An entity will need to use judgement to determine the mix of inputs and analytical choices that will enable the entity to consider all reasonable and supportable information that is available to the entity at the reporting date without undue cost or effort.

2.4 the entity might carry out its climate-related scenario analysis in line with its strategic planning cycle, including a multi-year strategic planning cycle (for example, every three to five years).

2.5 Selecting inputs[1]

2.5.1 When an entity selects the inputs to use in its climate-related scenario analysis, the entity shall consider all reasonable and supportable information—including scenarios, variables and other inputs which may be quantitative or qualitative that are available to the entity at the reporting date without undue cost or effort.

2.5.2 It is recommended that entities also access external data sources via third-party systems, such as open application programming interfaces (APIs), to support their sustainability reporting. For this purpose, data from sources like the IPCC and the International Energy Agency (IEA) can help inform assumptions and parameters used in scenario analysis when evaluating climate-related risks, including both physical and transition risks.

2.5.3 In considering whether the selected inputs are reasonable and supportable, an entity shall consider the objective of ISS 1 which requires the entity to disclose information that enables stakeholders to understand the impact and resilience of the entity's strategy and business model to climate-related changes, developments, and uncertainties, taking into consideration the entity's identified climate-related risks and opportunities. This means that the inputs to the entity's climate-related scenario analysis shall be relevant to the entity's circumstances,

2.6 Assessing Impacts[2]

Each type of climate risk exposure shall be treated as distinct. The process for determining material climate risk exposure shall be as under:

a. Understand the entity's context and circumstances.

b. Identify actual and potential risks and their likely impacts.

c. Assess the significance of the risks and their impact.

[1] ISS 2 Para 5.2 Selecting Inputs
[2] ISS 2 Para 5.3 Assessing Impacts and Para 6.6 Performance Cash flows and Prospects

d. Prioritize the most significant risks and their impacts for climate risk reporting.

ISS 2 describes the Resource Consumption Model (RCM), Resource to Value Mapping (RVM), Impact Analysis, Environmental Cost Analysis (ECA), and Activity Based Management (ABM) as the tools to assess the impact of climate-related risks on the entity. A note on the use of these tools in the Guidance Note on ISS 1 may be referred to.

ISS 2 requires that the details of measurement of impacts of climate-related risks on the performance, prospects and cash flows over the short, medium and long terms should be disclosed. It requires the entity to embed the climate-related risk and opportunity management processes in its business model and business planning. Disclosures describing this inclusion are required. The risk mitigation strategies and the way the entity plans to take advantage of the climate-related opportunities should be measured and disclosed. The plans for investments/ divestments, disposal/ acquisition of assets, technology and innovation, expansion/ diversification etc. are some examples of strategic adaptations to climate-related risks and opportunities that should be disclosed. The ISS 2 requires a detailed disclosure of the climate-related risks and opportunities, the level of exposure, the way the entity identifies, measures, prioritises and deals with/ plans to deal with them, and an assessment of the impact on the performance, prospects and cash flows in the short, medium and long terms, as on the date of disclosure.

The Management Accounting Guideline IV of the ICMAI provides the tools and techniques of environmental accounting, which are useful in linking the monetary and non-monetary aspects of climate-related risks and opportunities and their impacts.[1]

2.6.1 Climate related metrics cover a wide range of activities impacting climate, waste, and energy use. Climate related KPIs include:[2]

- CO2 emissions reduction in kt
- Energy consumption in kWh
- Water usage in metric tons
- Waste reduction in cubic meters
- Plastic reduction in metric tons
- Material efficiency in material input per unit of service (MIPS)
- Noise pollution in decibels
- Compliance with chemical safety requirements
- Compliance with environmental standards
- Number of suppliers audited against environmental standards
- Greenhouse Gas (GHG) emissions: A company may report on its Scope 1, Scope 2, and Scope 3 emissions, measured in metric tons of CO2 equivalent (CO2e).
- Energy consumption: Total energy usage is measured in megawatt-hours (MWh) or gigajoules (GJ). It can be further divided into renewable vs. non-renewable energy usage.
- Water usage: This metric typically measures the total amount of water a company withdraws, consumes, or discharges.
- Waste management: The amount of waste generated, diverted from landfills, or recycled, reported in metric tons.

[1] MAG4.pdf
[2] ISS 2 Para 6.7 Metrics and Targets

2.6.2 Entities should discuss how identified climate-related issues have affected their businesses, strategy, and financial planning. Entities should consider including the impact on their businesses and strategy in the following areas:

a. Products and services
b. Supply chain and/or value chain
c. Adaptation and mitigation activities
d. Investment in research and development
e. Operations (including types of operations and location of facilities)

The entity should provide a holistic picture of the interdependencies among the factors that affect their performance, prospects and cash flows in the short, medium and long term.

2.6.3 The entities should also consider including in their disclosures the impact on financial planning in the following areas:[1]

a. Operating costs and revenues
b. Capital expenditures and capital allocation
c. Acquisitions or divestments
d. Access to capital

2.7 Governance[2]

a. Disclose the organization's governance around climate- related risks and opportunities
b. Describe the board's oversight of climate-related risks and opportunities.
c. Describe management's role in assessing and managing climate-related risks and opportunities.

2.8 Strategy[3]

a. Disclose the actual and anticipated material impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.
b. Describe the material climate-related risks and opportunities the organization has identified over the short, medium, and long term.
c. Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios.

The Management Accounting Guideline 3 Implementing Corporate Environmental Strategies provides a comprehensive way of formulating and implementing corporate environmental strategies.[4]

2.9 Risk Management[5]

a. Disclose how the organization identifies, assesses, and manages climate-related risks.
b. Describe the organization's processes for identifying and assessing climate-related risks
c. Describe the organization's processes for managing climate-related risks.

[1] ISS 2 Para 6.4 Climate-related Risks and Responsibilities
[2] ISS 2 Para 6.2 Governance
[3] ISS 2 Para 6.3 Strategy
[4] Reference Link: MAG_3.pdf
[5] ISS 2 Para 6.5 Risk Management

d. Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.

2.10 Judgement and Assumptions

The entity must disclose the key assumptions and the use of professional judgement in material aspects of the climate risk-related disclosure. Key assumptions, judgements and estimates made regarding the inputs, impacts, the operating environment, value chain and relationships should be stated. Where significant, the estimation risks and sensitivity of the element to the risk should be disclosed.

2.11 Accuracy and Errors

The objective of ISS 2 is to bring reasonable accuracy to the climate-related disclosures required under the standard. Disclosures must be made regarding the use of estimates or forecasts and the level of accuracy involved. The use of factual and error-free data should be made to the extent feasible. Data from reliable sources, duly tested for accuracy should be used. The level of accuracy acceptable to the entity in the estimation and assessment processes should be defined and disclosed. Where data is aggregated, care should be taken to preserve the clarity and visibility of the major and material risks, opportunities, and impacts. Obscuring vital information with superfluous data and excessive aggregation or change of scale should not be done.

Where errors are observed after a disclosure has been made, the entity should take responsibility to correct and revise the same wherever feasible, and disclose the extent of change in the conclusions due to the correction.

Where prior period information is found to be incorrect or inaccurate, restatement of the information should be considered when feasible. Wherever it is not feasible to re-state the prior period information, the entity should disclose the impact of the error on the key elements of the report.

When new and pertinent information becomes available, after the issue of a disclosure report, the entity should consider revision to or recall of the earlier report, and issue a fresh or revised report after incorporating the new information.

2.12 Presentation and Disclosures

In the Indian context, the SEBI has issued the reporting requirements under Principle 6 of the BRSR report. Entities that wish to make a voluntary climate-related disclosure report may follow the Appendix I to the ISS 2 for conformity with the SEBI presentation requirements, adapted to meet the entity-specific circumstances.

The following should be kept in mind while making the climate-related disclosures:

a. **Materiality** and significance of the risks and opportunities, and the impact on the entity's performance, prospects and/or cash flows over the short, medium or long term should be communicated clearly and concisely.

b. **Relevant and complete** details and factual data on the climate-related risks, opportunities and impacts should be made available to the stakeholders, to the extent necessary for informed decision-making.

c. **Consistency** in the processes followed should be maintained. They should be sustainable, i.e., financially **feasible** and require reasonable effort commensurate with

the benefit. Any change in the methods, processes, basic premise, key assumptions, etc. for identification, measurement, estimation, and computation of the climate-related risks and opportunities, and their impact on the entity should be disclosed, with the effect such change has on the performance, prospects and cash flows of the entity and the disclosure, to the extent ascertainable for all significant or material effects. If the effect of such change is not ascertainable, the fact should be disclosed.

d. **Major assumptions** and **sensitivity** of the estimates, forecasts and impacts should be disclosed

e. **Clear definitions** and explanations, where necessary, should be provided for the terms used in the disclosure. Consistency and conformity with global norms in the use of terminology should be maintained.

f. Data used, computations made and conclusions drawn should be **verifiable** and **traceable** to the data sources.

2.13 Emission factors

As part of an entity's disclosure of the measurement approach, inputs and assumptions, the entity shall disclose information to enable users of general-purpose financial reports to understand which emission factors the entity uses in its measurement of its greenhouse gas emissions. ISS 2 does not specify emission factors an entity is required to use in its measurement of its greenhouse gas emissions instead, this Standard requires an entity to use emission factors that best represent the entity's activity as its basis for measuring its greenhouse gas emissions.

3. Scenario Analysis[1]

ISS 2 requires an entity to use climate-related scenario analysis to assess its climate resilience, using an approach that is commensurate with its circumstances. The entity is required to use an approach to climate-related scenario analysis that enables it to consider all reasonable and supportable information that is available to the entity at the reporting date without undue cost or effort.

In conducting scenario analysis, entities should strive to achieve

- transparency around parameters, assumptions, analytical approaches, and time frames;
- comparability of results across different scenarios and analytical approaches;
- adequate documentation for the methodology, assumptions, data sources, and analytics;
- consistency of methodology year over year;

3.1 sound governance over scenario analysis conduct, validation, approval, and application requires an entity to use climate-related scenario analysis to assess its climate resilience, using an approach that is commensurate with its circumstances. The entity is required to use an approach to climate-related scenario analysis that enables it to consider all reasonable and supportable information that is available to the entity at the reporting date without undue cost or effort.[2]

4. GHG accounting and reporting shall be based on the following principles:[3]

[1] ISS 2 Para 5.1 Assessing the circumstances
[2] Refer Para 13 of the Guidance Note on ISS 1
[3] Refer SEBI Disclosures requirements under Principle 6 of BRSR Core: Annexure_I-Format-of-BRSR-Core_p.pdf

This note provides detailed guidance for GHG accounting and reporting, to demonstrate the risk identification, measurement, and disclosure process, with a detailed discussion on the methods and techniques involved.

4.1 Relevance - Ensure the GHG inventory appropriately reflects the GHG emissions of the company and serves the decision-making needs of users – both internal and external to the company. An important aspect of relevance is the selection of an appropriate inventory boundary that reflects the substance and economic reality of the company's business relationships, not merely its legal form. The choice of the inventory boundary is dependent on the characteristics of the company, the intended purpose of information, and the needs of the users

When choosing the inventory boundary, several factors should be considered, such as: • Organizational structures: control (operational and financial), ownership, legal agreements, joint ventures, etc. • Operational boundaries: on-site and off-site activities, processes, services, and impacts • Business context: nature of activities, geographic locations, industry sector(s), purposes of information, and users of information

4.2 Completeness - Account for and report on all GHG emission sources and activities within the chosen inventory boundary. Disclose and justify any specific exclusions. All relevant emissions sources within the chosen inventory boundary need to be accounted for so that a comprehensive and meaningful inventory is compiled. In practice, a lack of data or the cost of gathering data may be a limiting factor. Sometimes it is tempting to define a minimum emissions accounting threshold (often referred to as a materiality threshold) stating that a source not exceeding a certain size can be omitted from the inventory. Technically, such a threshold is simply a predefined and accepted negative bias in estimates (i.e., an underestimate).

4.3 Consistency - Use consistent methodologies to allow for meaningful comparisons of emissions over time. Transparently document any changes to the data, inventory boundary, methods, or any other relevant factors in the time series.

Users of GHG information will want to track and compare GHG emissions information over time to identify trends and to assess the performance of the reporting company. The consistent application of accounting approaches, inventory boundary, and calculation methodologies is essential to producing comparable GHG emissions data over time. The GHG information for all operations within an organization's inventory boundary needs to be compiled in a manner that ensures that the aggregate information is internally consistent and comparable over time. If there are changes in the inventory boundary, methods, data, or any other factors affecting emission estimates, they need to be transparently documented and justified.

4.4 Transparency - Address all relevant issues in a factual and coherent manner, based on a clear audit trail. Disclose any relevant assumptions and make appropriate references to the accounting and calculation methodologies and data sources used.

Transparency relates to the degree to which information on the processes, procedures, assumptions, and limitations of the GHG inventory are disclosed in a clear, factual, neutral, and understandable manner based on clear documentation and archives (i.e., an audit trail). Information needs to be recorded, compiled, and analysed in a way that enables internal reviewers and external verifiers to attest to its credibility. Specific exclusions or inclusions need to be clearly identified and justified, assumptions disclosed, and appropriate references provided for the methodologies applied and the data sources used. The information should be sufficient to enable a third party to derive the same results if provided with the same source

data. A “transparent” report will provide a clear understanding of the issues in the context of the reporting company and a meaningful assessment of performance. An independent external verification is a good way of ensuring transparency and determining that an appropriate audit trail has been established and documentation provided.

4.5 Accuracy - Ensure that the quantification of GHG emissions is systematically neither over nor under actual emissions, as far as can be judged, and that uncertainties are reduced as far as practicable. Achieve sufficient accuracy to enable users to make decisions with reasonable assurance as to the integrity of the reported information.

Data should be sufficiently precise to enable intended users to make decisions with reasonable assurance that the reported information is credible. GHG measurements, estimates, or calculations should be systemically neither over nor under the actual emissions value, as far as can be judged, and that uncertainties are reduced as far as practicable. The quantification process should be conducted in a manner that minimizes uncertainty. Reporting on measures taken to ensure accuracy in the accounting of emissions can help promote credibility while enhancing transparency.

5. Setting Organizational Boundaries[1]

Business operations vary in their legal and organizational structures; they include wholly owned operations, incorporated and non-incorporated joint ventures, subsidiaries, and others. For the purposes of financial accounting, they are treated according to established rules that depend on the structure of the organization and the relationships among the parties involved. In setting organizational boundaries, a company selects an approach for consolidating GHG emissions and then consistently applies the selected approach to define those businesses and operations that constitute the company for the purpose of accounting and reporting GHG emissions.

For corporate reporting, two distinct approaches can be used to consolidate GHG emissions: the equity share and the control approaches. Companies shall account for and report their consolidated GHG data according to either the equity share or control approach.

5.1 Equity share approach

Under the equity share approach, a company accounts for GHG emissions from operations according to its share of equity in the operation. The equity share reflects economic interest, which is the extent of rights a company has to the risks and rewards flowing from an operation.

5.2 Control approach

Under the control approach, a company accounts for 100 percent of the GHG emissions from operations over which it has control. It does not account for GHG emissions from operations in which it owns an interest but has no control. Control can be defined in either financial or operational terms. When using the control approach to consolidate GHG emissions, companies shall choose between either the operational control or financial control criteria.

6. Consolidation at multiple levels

The consolidation of GHG emissions data will only result in consistent data if all levels of the organization follow the same consolidation policy. In the first step, the management of the parent company must decide on a consolidation approach (i.e., either the equity share or the financial or operational control approach). Once a corporate consolidation policy has been selected, it shall be applied to all levels of the organization.

[1] ISS 2 Para 6 Process of Identification and measurement and Para 11 Disclosures

7. Double counting

When two or more companies hold interests in the same joint operation and use different consolidation approaches (e.g., Company A follows the equity share approach while Company B uses the financial control approach), emissions from that joint operation could be double counted. This may not matter for voluntary corporate public reporting so long as there is adequate disclosure from the company on its consolidation approach. However, double counting of emissions needs to be avoided in trading schemes and certain mandatory government reporting programs.

8.1 Scope 1: Direct GHG emissions

Companies report GHG emissions from sources they own or control as scope 1. Direct GHG emissions are principally the result of the following types of activities undertaken by the company:

• Generation of electricity, heat, or steam. These emissions result from combustion of fuels in stationary sources, e.g., boilers, furnaces, turbines

• Physical or chemical processing. Most of these emissions result from manufacture or processing of chemicals and materials, e.g., cement, aluminium, adipic acid, ammonia manufacture, and waste processing

• Transportation of materials, products, waste, and employees. These emissions result from the combustion of fuels in company owned/controlled mobile combustion sources (e.g., trucks, trains, ships, airplanes, buses, and cars)

• Fugitive emissions. These emissions result from intentional or unintentional releases, e.g., equipment leaks from joints, seals, packing, and gaskets; methane emissions from coal mines and venting; hydrofluorocarbon (HFC) emissions during the use of refrigeration and air conditioning equipment; and methane leakages from gas transport.

8.2 Scope 2: Electricity indirect GHG emissions

Companies report the emissions from the generation of purchased electricity that is consumed in its owned or controlled equipment or operations as scope 2. Scope 2 emissions are a special category of indirect emissions. For many companies, purchased electricity represents one of the largest sources of GHG emissions and the most significant opportunity to reduce these emissions. Accounting for Scope 2 emissions enables companies to assess the risks and opportunities associated with changing electricity and GHG emissions costs. Another important reason for companies to track these emissions is that the information may be needed for some GHG programs. Companies can reduce their use of electricity by investing in energy efficient technologies and energy conservation. Additionally, emerging green power markets4 provide opportunities for some companies to switch to less GHG intensive sources of electricity. Companies can also install an efficient on-site co-generation plant, particularly if it replaces the purchase of more GHG intensive electricity from the grid or electricity supplier. Reporting of scope 2 emissions allows transparent accounting of GHG emissions and reductions associated with such opportunities.

8.3 Scope 3: Other indirect GHG emissions

This section provides an indicative list of scope 3 categories

Some of these activities will be included under Scope 1 if the pertinent emission sources are owned or controlled by the company (e.g., if the transportation of products is done in vehicles owned or controlled by the company). To determine if an activity falls within Scope 1 or Scope

3, the company should refer to the selected consolidation approach (equity or control) used in setting its organizational boundaries.

- Extraction and production of purchased materials and fuels
- Transport-related activities
- Transportation of purchased materials or goods
- Transportation of purchased fuels
- Employee business travel
- Employees commuting to and from work
- Transportation of sold products
- Transportation of waste
- Electricity-related activities not included in scope 2
    - Extraction, production, and transportation of fuels consumed in the generation of electricity (either purchased or own generated by the reporting company)
- Purchase of electricity that is sold to an end user (reported by utility company)
- Generation of electricity that is consumed in a T&D system (reported by end-user)

Leased assets, franchises, and outsourced activities— emissions from such contractual arrangements are only classified as scope 3 if the selected consolidation approach (equity or control) does not apply to them.

- Use of sold products and services
- Waste disposal
- Disposal of waste generated in operations
- Disposal of waste generated in the production of purchased materials and fuels
- Disposal of products (sold) at the end of their life

9.Tracking Emissions Over Time-

A meaningful and consistent comparison of emissions over time requires that companies set a performance datum with which to compare current emissions. This performance datum is referred to as the base year1 emissions. For consistent tracking of emissions over time, the base year emissions may need to be recalculated as companies undergo significant structural changes such as acquisitions, divestments, and mergers

10. Choosing a base year -

Companies shall choose and report a base year for which verifiable emissions data are available and specify their reasons for choosing that particular year.

11. Structural changes -

In the reporting organization that have a significant impact on the company's base year emissions. A structural change involves the transfer of ownership or control of emissions-generating activities or operations from one company to another. While a single structural change might not have a significant impact on the base year emissions, the cumulative effect of several minor structural changes can result in a significant impact. Structural changes

include:

a. Mergers, acquisitions, and divestments

b. Outsourcing and insourcing of emitting activities

c. Changes in calculation methodology or improvements in the accuracy of emission factors or activity data that result in a significant impact on the base year emissions data

d. Discovery of significant errors, or several cumulative errors, that are collectively significant.

Base year emissions shall be retroactively recalculated to reflect changes in the company that would otherwise compromise the consistency and relevance of the reported GHG emissions information.

No recalculation for organic growth or decline Base year emissions and any historic data are not recalculated for organic growth or decline. Organic growth/decline refers to increases or decreases in production output, changes in product mix, and closures and openings of operating units that are owned or controlled by the company. The rationale for this is that organic growth or decline results in a change of emissions to the atmosphere and therefore needs to be counted as an increase or decrease in the company's emissions profile over time.

12. Identifying and Calculating GHG Emissions

Once the inventory boundary has been established, companies generally calculate GHG emissions using the following steps:

1. Identify GHG emissions sources
2. Select a GHG emissions calculation approach
3. Collect activity data and choose emission factors
4. Apply calculation tools
5. Roll-up GHG emissions data to corporate level

13. Identify GHG emissions sources

categorize the GHG sources within that company's boundaries. GHG emissions typically occur from the following source categories:

• Stationary combustion: combustion of fuels in stationary equipment such as boilers, furnaces, burners, turbines, heaters, incinerators, engines, flares, etc.

• Mobile combustion: combustion of fuels in transportation devices such as automobiles, trucks, buses, trains, airplanes, boats, ships, barges, vessels, etc.

• Process emissions: emissions from physical or chemical processes such as CO2 from the calcination step in cement manufacturing, CO2 from catalytic cracking in petrochemical processing, PFC emissions from aluminium smelting, etc.

• Fugitive emissions: intentional and unintentional releases such as equipment leaks from joints, seals, packing, gaskets, as well as fugitive emissions from coal piles, wastewater treatment, pits, cooling towers, gas processing facilities, etc.

Every business has processes, products, or services that generate direct and/or indirect emissions from one or more of the above broad source categories. The GHG Protocol calculation tools are organised based on these categories.

14. Process for Identification and reporting of emissions

14.1 IDENTIFY SCOPE 1 EMISSIONS

As a first step, a company should undertake an exercise to identify its direct emission sources in each of the four source categories listed above. Process emissions are usually only relevant to certain industry sectors like oil and gas, aluminium, cement, etc. Manufacturing companies that generate process emissions and own or control a power production facility will likely have direct emissions from all the main source categories. Office-based organizations may not have any direct GHG emissions except in cases where they own or operate a vehicle, combustion device, or refrigeration and air-conditioning equipment. Often companies are surprised to realize that significant emissions come from sources that are not initially obvious.

14.2 IDENTIFY SCOPE 2 EMISSIONS

The next step is to identify indirect emission sources from the consumption of purchased electricity, heat, or steam. Almost all businesses generate indirect emissions due to the purchase of electricity for use in their processes or services.

14.3 IDENTIFY SCOPE 3 EMISSIONS

This optional step involves identification of other indirect emissions from a company's upstream and downstream activities as well as emissions associated with outsourced/ contract manufacturing, leases, or franchises not included in scope 1 or scope 2. The inclusion of scope 3 emissions allows businesses to expand their inventory boundary along their value chain and to identify all relevant GHG emissions. This provides a broad overview of various business linkages and possible opportunities for significant GHG emission reductions that may exist upstream or downstream of a company's immediate operations.

15. Scope 3 greenhouse gas emissions

An entity shall disclose information about its Scope 3 greenhouse gas emissions to enable users of general-purpose financial reports to understand the source of these emissions. The entity shall consider its entire value chain (upstream and downstream)

16. Scope 3 measurement framework

16.1 An entity's measurement of Scope 3 greenhouse gas emissions is likely to include the use of estimation rather than solely comprising direct measurement. In measuring Scope 3 greenhouse gas emissions an entity shall use a measurement approach, inputs and assumptions that result in a faithful representation of this measurement.

16.2 An entity's measurement of Scope 3 greenhouse gas emissions relies upon a range of inputs. This Standard does not specify the inputs the entity is required to use to measure its Scope 3 greenhouse gas emissions, but does require the entity to prioritize inputs and assumptions using these identifying characteristics (which are listed in no particular order):

i. data based on direct measurement

ii. data from specific activities within the entity's value chain

iii. timely data that faithfully represents the jurisdiction of, and the technology used for, the value chain activity and its greenhouse gas emissions, and

iv. data that has been verified

16. 3 Data based on direct measurement

Two methods are used to quantify Scope 3 greenhouse gas emissions: direct measurement and estimation. Of these two methods - and with all else being equal – an entity shall prioritize direct measurement.

'Direct measurement' refers to the direct monitoring of greenhouse gas emissions and, in theory, provides the most accurate evidence. However, it is expected that Scope 3 greenhouse gas emissions data will include estimation due to the challenges associated with direct measurement of Scope 3 greenhouse gas emissions.

16.4 Estimation of Scope 3 greenhouse gas emissions involves approximate calculations of data based on assumptions and appropriate inputs. An entity that measures its Scope 3 greenhouse gas emissions using estimation is likely to use two types of input:

a. data that represents the entity's activity that results in greenhouse gas emissions (activity data). For example, the entity might use distance travelled as activity data to represent the transport of goods within its value chain.

b. emission factors that convert activity data into greenhouse gas emissions. For example, the entity will convert the distance travelled (activity data) into greenhouse gas emissions data using emission factors.

16.4.1 Primary data for Scope 3 greenhouse gas emissions includes data provided by suppliers or other entities in the value chain related to specific activities in an entity's value chain. For example, primary data could be sourced from meter readings, utility bills or other methods that represent specific activities in the entity's value chain. Primary data could be collected internally (for example, through the entity's own records), or externally from suppliers and other value chain partners (for example, supplier-specific emission factors for purchased goods or services).

16.4.2 Secondary data for Scope 3 greenhouse gas emissions is data that is not obtained directly from specific activities within an entity's value chain. Secondary data is often supplied by third-party data providers and includes industry-average data (for example, from published databases, government statistics, literature studies and industry associations). Secondary data includes data used to approximate the activity or emission factors. Additionally, secondary data includes primary data from a specific activity (proxy data) used to estimate greenhouse gas emissions for another activity. If an entity uses secondary data to measure its Scope 3 greenhouse gas emissions, it shall consider the extent to which the data faithfully represents the entity's activities.

16.5 An entity shall disclose information about the measurement approach, inputs and assumptions it uses to measure its Scope 3 greenhouse gas emissions

16.6 In preparing disclosures to fulfil the requirements of ISS 2 , an entity shall:

a) consider the time horizons over which the effects of climate-related risks and opportunities could reasonably be expected to occur,

b) consider where in the entity's business model and value chain climate- related risks and opportunities are concentrated (for example, geographical areas, facilities, or types of assets)

c) consider the connections between the information disclosed to fulfil the requirements of BRSR. These connections include consistency in the data and assumptions used—to the extent possible.

17. Select a calculation approach

Direct measurement of GHG emissions by monitoring concentration and flow rate is not

common. More often, emissions may be calculated based on a mass balance or stoichiometric basis specific to a facility or process. However, the most common approach for calculating GHG emissions is through the application of documented emission factors. These factors are calculated ratios relating GHG emissions to a proxy measure of activity at an emissions source. The IPCC guidelines (IPCC, 1996) refer to a hierarchy of calculation approaches and techniques ranging from the application of generic emission factors to direct monitoring. In many cases, particularly when direct monitoring is either unavailable or prohibitively expensive, accurate emission data can be calculated from fuel use data. Even small users usually know both the amount of fuel consumed and have access to data on the carbon content of the fuel through default carbon content coefficients or through more accurate periodic fuel sampling. Companies should use the most accurate calculation approach available to them and that is appropriate for their reporting context.

18. Collect activity data and choose emission factors

For most small to medium-sized companies and for many larger companies, scope 1 GHG emissions will be calculated based on the purchased quantities of commercial fuels (such as natural gas and heating oil) using published emission factors. Scope 2 GHG emissions will primarily be calculated from metered electricity consumption and supplier-specific, local grid, or other published emission factors. Scope 3 GHG emissions will primarily be calculated from activity data such as fuel use or passenger miles and published or third-party emission factors. In most cases, if source- or facility-specific emission factors are available, they are preferable to more generic or general emission factors. Industrial companies may be faced with a wider range of approaches and methodologies. They should seek guidance from the sector-specific guidelines on the GHG Protocol website (if available) or from their industry associations.

19. Apply calculation tools

This section provides an overview of the GHG calculation tools and guidance available on the GHG Protocol Initiative website (www.ghgprotocol.org). Use of these tools is encouraged as they have been peer reviewed by experts and industry leaders, are regularly updated, and are believed to be the best available. The tools, however, are optional. Companies may substitute their own GHG calculation methods, provided they are more accurate than or are at least consistent with the GHG Protocol Corporate Standards approaches.

There are two main categories of calculation tools:

- Cross-sector tools that can be applied to different sectors. These include stationary combustion, mobile combustion, HFC use in refrigeration and air conditioning, and measurement and estimation uncertainty.
- Sector-specific tools that are designed to calculate emissions in specific sectors such as aluminium, iron and steel, cement, oil and gas, pulp and paper, office-based organizations.

Most companies will need to use more than one calculation tool to cover all their GHG emission sources. For example, to calculate GHG emissions from an aluminium production facility, the company would use the calculation tools for aluminium production, stationary combustion (for any consumption of purchased electricity, generation of energy on-site, etc), mobile combustion (for transportation of materials and products by train, vehicles employed on-site, employee business travel, etc), and HFC use (for refrigeration, etc). See Table 3 for the full list of tools.

TABLE 3. Overview of GHG calculation tools available on the GHG Protocol website

	CALCULATION TOOLS	MAIN FEATURES
CROSS-SECTOR TOOLS	Stationary Combustion	• Calculates direct and indirect CO_2 emissions from fuel combustion in stationary equipment • Provides two options for allocating GHG emissions from a co-generation facility • Provides default fuel and national average electricity emission factors
	Mobile Combustion	• Calculates direct and indirect CO_2 emissions from fuel combustion in mobile sources • Provides calculations and emission factors for road, air, water, and rail transport
	HFC from Air Conditioning and Refrigeration Use	• Calculates direct HFC emissions during manufacture, use and disposal of refrigeration and air-conditioning equipment in commercial applications • Provides three calculation methodologies: a sales-based approach, a life cycle stage based approach, and an emission factor based approach
	Measurement and Estimation Uncertainty for GHG Emissions	• Introduces the fundamentals of uncertainty analysis and quantification • Calculates statistical parameter uncertainties due to random errors related to calculation of GHG emissions • Automates the aggregation steps involved in developing a basic uncertainty assessment for GHG inventory data
	Aluminum and other non-Ferrous Metals Production	• Calculates direct GHG emissions from aluminum production (CO_2 from anode oxidation, PFC emissions from the "anode effect," and SF_6 used in non-ferrous metals production as a cover gas)
	Iron and Steel	• Calculates direct GHG emissions (CO_2) from oxidation of the reducing agent, from the calcination of the flux used in steel production, and from the removal of carbon from the iron ore and scrap
SECTOR-SPECIFIC TOOLS	Nitric Acid Manufacture	• Calculates direct GHG emissions (N_2O) from the production of nitric acid
	Ammonia Manufacture	• Calculates direct GHG emissions (CO_2) from ammonia production. This is for the removal of carbon from the feedstock stream only; combustion emissions are calculated with the stationary combustion module
	Adipic Acid Manufacture	• Calculates direct GHG emissions (N_2O) from adipic acid production
	Cement	• Calculates direct CO_2 emissions from the calcination process in cement manufacturing (WBCSD tool also calculates combustion emissions) • Provides two calculation methodologies: the cement-based approach and the clinker-based approach
	Lime	• Calculates direct GHG emissions from lime manufacturing (CO_2 from the calcination process)
	HFC-23 from HCFC-22 Production	• Calculates direct HFC-23 emissions from production of HCFC-22
	Pulp and Paper	• Calculates direct CO_2, CH_4, and N_2O emissions from production of pulp and paper. This includes calculation of direct and indirect CO_2 emissions from combustion of fossil fuels, bio-fuels, and waste products in stationary equipment
	Semi-Conductor Wafer Production	• Calculates PFC emission from the production of semi-conductor wafers
	Guide for Small Office-Based Organizations	• Calculates direct CO_2 emissions from fuel use, indirect CO_2 emissions from electricity consumption, and other indirect CO_2 emissions from business travel and commuting

STEEL USED

20. Roll-up GHG emissions data to corporate level

To report a corporation's total GHG emissions, companies will usually need to gather and summarize data from multiple facilities, possibly in different countries and business divisions. It is important to plan this process carefully to minimize the reporting burden, reduce the risk of errors that might occur while compiling data, and ensure that all facilities are collecting information on an approved, consistent basis. Ideally, corporations should integrate GHG reporting with their existing reporting tools and processes, and take advantage of any relevant data already collected and reported by facilities to division or corporate offices, regulators, or other stakeholders.

21. Emission Factors and Other Parameters

For a particular source category, emissions calculations will generally rely on emission factors and other parameters (e.g., utilization factors, oxidation rates, methane conversion factors).2 These factors and parameters may be published or default factors, based on company specific data, site-specific data, or direct emission or other measurements. For fuel consumption, published emission factors based on fuel energy content are generally more accurate than those based on mass or volume, except when mass or volume-based factors have been measured at the company- or site-specific level. Quality investigations need to assess the representativeness and applicability of emission factors and other parameters to the specific characteristics of a company. Differences between measured and default values need to be qualitatively explained and justified based upon the company's operational characteristics.

22. Emission Estimates

Estimated emissions for a source category can be compared with historical data or other estimates to ensure they fall within a reasonable range. Potentially unreasonable estimates provide cause for checking emission factors or activity data and determining whether changes in methodology, market forces, or other events are sufficient reasons for the change. In situations where actual emission monitoring occurs (e.g., power plant CO2 emissions), the data from monitors can be compared with calculated emissions using activity data and emission factors.

Estimation uncertainty arises any time GHG emissions are quantified. Therefore, all emissions or removal estimates are associated with estimation uncertainty. Estimation uncertainty can be further classified into two types: model uncertainty and parameter uncertainty.

22.1 Model uncertainty- refers to the uncertainty associated with the mathematical equations (i.e., models) used to characterize the relationships between various parameters and emission processes. For example, model uncertainty may arise either due to the use of an incorrect mathematical model or inappropriate input into the model. As with scientific uncertainty, estimating model uncertainty is likely to be beyond most company's inventory efforts; however, some companies may wish to utilize their unique scientific and engineering expertise to evaluate the uncertainty in their emission estimation models.

22.2 Parameter uncertainty-

refers to the uncertainty associated with quantifying the parameters used as inputs (e.g., activity data and emission factors) into estimation models. Parameter uncertainties can be evaluated through statistical analysis, measurement equipment precision determinations, and expert judgment. Quantifying parameter uncertainties and then estimating source category uncertainties based on these parameter uncertainties will be the primary focus of companies that choose to investigate the uncertainty in their emission inventories.

23. Climate-related targets

23.1 An entity to disclose the quantitative or qualitative climate-related targets it has set, and any it is required to meet by law or regulation, including any greenhouse gas emissions targets. In disclosing these climate-related targets, the entity is required to disclose information about the characteristics of these targets. If the climate-related target is quantitative, an entity is required to describe whether the target is an absolute target or an intensity target. An absolute target is defined as a total amount of a measure or a change in

the total amount of a measure, whereas an intensity target is defined as a ratio of a measure, or a change in the ratio of a measure, to a business metric.

23.2 Setting a GHG Target

As companies develop strategies to reduce the GHG emissions of their products and operations, corporate-wide GHG targets are often key elements of these efforts

Setting a GHG target involves making choices among various strategies for defining and achieving a GHG reduction. The business goals, any relevant policy context, and stakeholder discussions should inform these choices.

23.3 Obtain Senior Management Commitment

As with any corporate wide target, senior management buy-in and commitment particularly at the board/CEO level is a prerequisite for a successful GHG reduction program. Implementing a reduction target is likely to necessitate changes in behaviour and decision-making throughout the organization. It also requires establishing an internal accountability and incentive system and providing adequate resources to achieve the target. This will be difficult, if not impossible, without senior management commitment.

23.4 Decide on the Target Type

There are two broad types of GHG targets: absolute and intensity-based. An absolute target is usually expressed in terms of a reduction over time in a specified quantity of GHG emissions to the atmosphere, the unit typically being tonnes of CO2-e. An intensity target is usually expressed as a reduction in the ratio of GHG emissions relative to another business metric.[1] The comparative metric should be carefully selected. It can be the output of the company (e.g. tonne CO2-e per tonne product, per kWh, per tonne mileage) or some other metric such as sales, revenues, or office space. To facilitate transparency, companies using an intensity target should also report the absolute emissions from sources covered by the target.

23.5 Decide on the Target Boundary

The target boundary defines which GHGs, geographic operations, sources, and activities are covered by the target. The target and inventory boundary can be identical, or the target may address a specified subset of the sources included in the company inventory. The quality of the GHG inventory should be a key factor informing this choice. The questions to be addressed in this step include the following:

23.5.1 Which GHGs?

Targets usually include one or more of the six major GHGs covered by the Kyoto Protocol. For companies with significant non-CO2 GHG sources, it usually makes sense to include these to increase the range of reduction opportunities. However, practical monitoring limitations may apply to smaller sources.

23.5.2 Which Geographical Operations?

Only country or regional operations with reliable GHG inventory data should be included in the target. For companies with global operations, it makes sense to limit the target's geographical scope until a robust and reliable inventory has been developed for all operations. Companies that participate in GHG programs involving trading will need to decide whether to include the emission-sources covered in the trading program in their corporate target.

23.5.3 Which Direct and Indirect Emission Sources?

[1] ISS 2 Para 6.7 Metrics and Targets

Including indirect GHG emissions in a target will facilitate more cost-effective reductions by increasing the reduction opportunities available. However, indirect emissions are generally harder to measure accurately and verify than direct emissions although some categories, such as scope 2 emissions from purchased electricity, may be amenable to accurate measurement and verification. Including indirect emissions can raise issues regarding ownership and double counting of reductions, as indirect emissions are by definition someone else's direct emissions.

23.6 Separate Targets for Different Types of Businesses?

For companies with diverse operations, it may make more sense to define separate GHG targets for different core businesses, especially when using an intensity target, where the most meaningful business metric for defining the target varies across business units (e.g., GHGs per tonne of cement produced or barrel of oil refined).

23.6.1 Define the Length of the Commitment Period[1]

The target commitment period is the period of time during which emissions actual performance is measured against the target. It ends with the target completion date. Many companies use single-year commitment periods, whereas the Kyoto Protocol, for example, specifies a multi-year "first commitment period" of five years (2008–2012). The length of the target commitment period is an important factor in determining a company's level of commitment. Generally, the longer the target commitment period, the longer the period during which emissions performance counts towards the target.

23.6.2 For each target, the entity shall disclose:

the objective of the target (which could be mitigation, adaptation, or conformance with science-based initiatives);

a. the section or part of the entity to which the target is applicable;
b. the metric used to set the target and to monitor progress towards reaching the target;
c. the specific quantitative or qualitative target the entity has set or is required to meet;
d. the period over which the target applies;
e. the base period from which progress is measured;
f. any milestones and interim targets;
g. performance against each target and an analysis of trends or changes in the entity's performance; and
h. any revisions to the target and an explanation for those revisions.

23.6.3 In identifying and disclosing the metric used to set a climate-related target and measure progress, an entity shall consider the cross-industry metrics and industry-based metrics.

23.6.4 If an entity has a greenhouse gas emissions target, the entity is required to specify whether the target is a gross greenhouse gas emissions target or a net greenhouse gas emissions target. Gross greenhouse gas emissions targets reflect the total changes in greenhouse gas emissions planned within the entity's value chain. Net greenhouse gas emissions targets are the entity's targeted gross greenhouse gas emissions minus any planned offsetting efforts (for example, the entity's planned use of carbon credits to offset its greenhouse gas emissions).

[1] ISS 2 Para 5.4 Time frame

23.6.5 If an entity uses emission factors to estimate its greenhouse gas emissions, the entity shall use—as its basis for measuring its greenhouse gas emissions—the emission factors that best represent the entity's activity.

23.6.6 an entity to disclose the measurement approach, inputs and assumptions it uses to measure its greenhouse gas emissions.

24. Decide on the Use of GHG Offsets or Credits[1]

A GHG target can be met entirely from internal reductions at sources included in the target boundary or through additionally using offsets that are generated from GHG reduction projects that reduce emissions at sources (or enhance sinks) external to the target boundary. The use of offsets may be appropriate when the cost of internal reductions is high, opportunities for reductions limited, or the company is unable to meet its target because of unexpected circumstances. When reporting on the target, it should be specified whether offsets are used and how much of the target reduction was achieved using them.

It is also important to carefully assess the credibility of offsets used to meet a target and to specify the origin and nature of the offsets when reporting. Information needed includes:

- the type of project • geographic and organizational origin
- how offsets have been quantified
- whether they have been recognized by external programs (CDM, JI, etc.)

25. Track and Report Progress

Once the target has been set, it is necessary to track performance against it, to check compliance, and, to maintain credibility, to report emissions and any external reductions in a consistent, complete and transparent manner.

25.1 Regular Performance Checks

To track performance against a target, it is important to link the target to the annual GHG inventory process and make regular checks of emissions in relation to the target. Some companies use interim targets for this purpose (a target using a rolling target base year automatically includes interim targets every year).

26. Climate-Related Opportunities

Efforts to mitigate and adapt to climate change also produce opportunities for organizations, for example, through resource efficiency and cost savings, the adoption of low-emission energy sources, the development of new products and services, access to new markets, and building resilience along the supply chain. Climate-related opportunities will vary depending on the region, market, and industry in which an organization operates.

The Task Force on Climate related Financial Disclosures identifies several areas of opportunity described below.[2]

26.1 Resource Efficiency

There is growing evidence and examples of organizations that have successfully reduced operating costs by improving efficiency across their production and distribution processes, buildings, machinery/appliances, and transport/mobility - in particular, in relation to energy efficiency but also including broader materials, water, and waste management. Such actions

[1] ISS 2 Para 5.7 Resource to value mapping
[2] Reference Link: Task Force on Climate-related Financial Disclosures Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures.pdf

can result in direct cost savings to organizations' operations over the medium to long term and contribute to the global efforts to curb emissions. Innovation in technology is assisting this transition; such innovation includes developing efficient heating solutions and circular economy solutions, making advances in LED lighting technology and industrial motor technology, retrofitting buildings, employing geothermal power, offering water usage and treatment solutions, and developing electric vehicles.

26.2 Energy Source

According to the International Energy Agency (IEA), to meet global emission-reduction goals, countries will need to transition a major percentage of their energy generation to low emission alternatives such as wind, solar, wave, tidal, hydro, geothermal, nuclear, biofuels, and carbon capture and storage. For the fifth year in a row, investments in renewable energy capacity have exceeded investments in fossil fuel generation. The trend toward decentralized clean energy sources, rapidly declining costs, improved storage capabilities, and subsequent global adoption of these technologies are significant. Organizations that shift their energy usage toward low emission energy sources could potentially save on annual energy costs.

26.3 Products and Services

Organizations that innovate and develop new low-emission products and services may improve their competitive position and capitalize on shifting consumer and producer preferences. Some examples include consumer goods and services that place greater emphasis on a product's carbon footprint in its marketing and labeling (e.g., travel, food, beverage and consumer staples, mobility, printing, fashion, and recycling services) and producer goods that place emphasis on reducing emissions (e.g., adoption of energy-efficiency measures along the supply chain).

26.4 Markets

Organizations that pro-actively seek opportunities in new markets or types of assets may be able to diversify their activities and better position themselves for the transition to a lower-carbon economy. In particular, opportunities exist for organizations to access new markets through collaborating with governments, development banks, small-scale local entrepreneurs, and community groups in developed and developing countries as they work to shift to a lower-carbon economy. New opportunities can also be captured through underwriting or financing green bonds and infrastructure (e.g., low-emission energy production, energy efficiency, grid connectivity, or transport networks).

26.5 Resilience

The concept of climate resilience involves organizations developing adaptive capacity to respond to climate change to better manage the associated risks and seize opportunities, including the ability to respond to transition risks and physical risks. Opportunities include improving efficiency, designing new production processes, and developing new products. Opportunities related to resilience may be especially relevant for organizations with long-lived fixed assets or extensive supply or distribution networks; those that depend critically on utility and infrastructure networks or natural resources in their value chain; and those that may require longer-term financing and investment.

27. Tools and Data

This guidance note provides references to the available tools and data as on the date of publication.

27.1 Portals with a range of tools and data

27.1.1 IASA - IIASA provides a variety of land, energy, transition, and water tools as well as online databases, including for energy, GHG mitigation strategies, and climate policies consistent with 2°C and IPCC scenarios.

27.1.2 CLIPC - CLIPC provides access to climate information of direct relevance to a wide variety of users.

- It is a "one-stop-shop" platform that allows you to find answers to questions related to climate change and climate impact.
- It includes data from satellite and in-situ observations, climate models, data re-analyses, and transformed data products enabling assessment of climate change impact indicators.

27.2 Topic- and/or sector-specific tools

27.2.1 WRI - The World Resources Institute (WRI) built a tool/database to help companies, investors, governments, and communities better understand where and how water risks are emerging around the world.

27.2.2 U.S. EPA CREAT - The U.S. Environmental Protection Agency (EPA) provides a tool known as the Climate Resilience Evaluation and Awareness Tool (CREAT).

It is a risk assessment application for utilities in adapting to extreme weather events through a better understanding of current and future climate conditions.

27.2.3 UNEP & Copenhagen Centre for Energy Efficiency - Best Practices and Case Studies for Industrial Energy Efficiency Improvement.

27.2.4 MOSAICC - United Nations Food and Agricultural Organization's Modelling System for Agricultural Impacts of Climate Change.

28. AI and machine learning for Climate related reporting

Using AI and machine learning (ML) for Climate related reporting is a growing trend that will further accelerate in the coming years. Many enterprises and public agencies have already implemented AI and ML in their Climate related reporting initiatives. However, it is important to balance the decision-usefulness of information for the intended audience with the effort required to produce it. Smaller and lesser-resourced organisations may be required to report or to supply information to larger organisations as part of their value chain. In applying this standard, care must be taken to avoid the unintended consequence of information overload and undue cost

i. AI-powered tools that identify anomalies or inconsistencies and automate the validation process. ML algorithms that apply uniform metrics to all datasets.

ii. AI solution that consolidates various kinds of Climate related data across multiple regions into a unified, global sustainability report

iii. Deploying ML models for predicting future emissions

iv. Using natural language processing (NLP) for transforming raw data into clear, comprehensible reports for all stakeholder

v. Using vision-based AI systems, using ML to predict future waste

vi. Using AI to analyse Climate related data from multiple external sources and using ML

algorithms to automatically generate reports

vii. NLP-powered systems automatically gathering and analysing reports and audit data from suppliers, ML models that predict potential compliance risks

viii. AI-powered solution that enhances existing datasets or maps missing data. Enabling the company to see how different actions or strategies could affect sustainability outcomes.

Notes

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