**Draft**

 **Guidance Note**

**ICMAI Sustainability Standard ( ISS 1 )**

**General Requirements for Disclosure of Sustainability-related Information**

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**Objective** The objective of this non – authoritative Application Guidance is to support the implementation activities of preparers and others using ISS 1.

**1. Sustainability-related risks and opportunities**

**1.1** This Standard requires an entity to disclose information about all 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 and long term.

**1.2** An entity**’**s sustainability-related risks and opportunities arise out of the Interactions and dependencies - which can be direct and indirectand interdependent in which an entity both depends on resources and relationships throughout its value chain resulting from an entity’s system , processes and activities by which inputs are converted into outputs which lead to fulfilment of the objectives of the entity and the value chain framework encompassing the entire range of interactions, transactions, resources and relationships connected with the entity’s business model and strategic objectives including inter-alia inbound operations, operations, outbound logistics, marketing and sales, and services intertwined with procurement, human resource management, technological development, infrastructure and financing, in the context of geographical, and regulatory environments impacting the operations of the entity. These dependencies and impacts might give rise to sustainability-related risks and opportunities that could reasonably be expected to affect an entity**’**s existence, performance, cash flows and prospects over the short, medium and long term.

 Entity should applyStrategic cost analysis across its value chain to identify and manage sustainability related risks at optimum costacross the life cycle right from the raw material source till product is discarded after use

**1.3** For example, if 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 factorsmight 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 existence, performance, cash flows and prospects over the short, medium and long term.

**1.4** Any regeneration and preservation of waterthroughthe entity**’**s own activities and from other factors might positively affect the entity. 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 existence, performance, cash flows and prospects 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 some of these resources and relationships might not be recognised as assets in the entity**’**s financial statements 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.

**2. Identifying Sustainability related risks and opportunities (SRROs)**

Understand the organisation and its environment

**2.1** determine the parameters within which theSustainability related risks and opportunities should be identified – What is the form and structure of entity? Where does the organisation operate? This covers where it is physically located, as well as 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, 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:

1. the geographic location of the organization’s value chain (both upstream and downstream).
2. the organization’s assets and nature of operations.
3. the structure and dynamics of the organization’s supply and demand markets.
4. the organization’s customers.
5. the organization’s other key stakeholders.

**2.3** An organisation may consider and use 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.

**2.3** Besides identifying SRROs from information that is available and developed internally, the organisation may further consider, usage and applicability of corporate reports of industry peers, Reports published by analysts and other agencies, including information related to metrics and targets that might also be applicable to the entity.

**2.4** Entity should use resource consumption model 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

**2.5** Entity should use Impact Analysis 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

**2.6** Entity should useSocial Cost -Benefit analysis 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 environmental 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.

**2.7** Entity should useActivity-based management (ABM) which facilitates identification and monitoring of activities that an entity performs to assess their sustainability related impact for evaluating on performance, prospects as well as cash flows of the entity over the short, medium and long term.

**2.8** Entity should useEnvironmental cost-benefit analysis (CBA) 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.

**2.9** An entity shall use all reasonable, relevant and supportable information that is available to the entity at the reporting date without undue cost or effort

1. to identify the sustainability-related risks as well as opportunities that could reasonably be expected to affect the entity**’**s existence, performance, cash flows and prospects over the short, medium and long term.
2. 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 ensure value to cost balancing i.e value of Sustainability related disclosures should be commensurate and concurrent and commensurate with the incurrence of cost, as Cost incurred and value created are related to resources consumed. If additional information can be obtained but at a cost which does not justifiably enhance the quality of sustainability related disclosures, the entity should refrain from attempting to gather additional information.

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| **2.10 Reflect upon strategy to manage SRROs, taking into consideration proposed**  |   |
| 1. Introduction of new technology
2. Introduction of new processes within the entity
3. Investment and disposal plans
4. Change in value chain partners
5. planned sources of funding to implement strategy

**2.11 Disclose the organisation's strategy for managing Sustainability** **related risks and opportunities by consideration of the following aspects :**Explain how the SRROs affect the organisation's:**2.11.1 Business model** Describe: a) Current and anticipated effects b) Where the SRROs are concentrated (geography, facilities, types of assets)**2.11.2 Value chain** Describe: a) Current and anticipated effects  b) Where the SRROs are concentrated (geography, facilities, types of assets)**2.11.3 Strategy and decision making** 1. Describe how the organisation has responded to, and plans to respond to SRROs

 in its strategy and decision-making.1. Explain the progress of plans disclosed in previous reporting periods – use

 quantitative and qualitative information1. Describe trade-offs between SRROs that the organisation considered

**2.11.4 Resilience**1. Describe the organisation's capacity to adjust to uncertainties arising from sustainability-related risks
2. Disclose the qualitative and, if applicable, quantitative assessment of resilience

of strategy and business model1. Describe how the assessment of sustainability risks and opportunities was carried out
2. Identify the time horizon of the assessment of sustainability risks and opportunities
3. type of information to disclose
4. how to prepare those disclosures, including whether scenario analysis is required

**2.12 Define and disclose the time horizons and how these are linked to the** **organisation's planning horizons for strategic decision-making**Consider that time horizon can be short, medium and long term , and 1. Vary between entities
2. Depend on many factors including industry – specific characteristics
3. Cash flow
4. Investment made / proposed
5. Business cycles
6. Industry’s typical planning horizon for strategic decision – making
7. Industry’s typical planning horizon for capital investment
8. Typical time horizon stakeholders consider to conduct assessment of the entities in that industry

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 year. **2.13 When identifying SRROs that could reasonably be expected to affect the Entity’s** **existence, performance, cash flows and prospects in short, medium and long term ,consider:**1. Past events
2. Current conditions
3. Forecast of future conditions,

and whether1. Information is available , relevant and supportable
2. Information is available at reporting date
3. Information is available without undue cost or effort

**2.14 Risk management** **2.14.1** Every entity operates under different conditions and has different challenges, goals, and objectives, there’s no one-size-fits-all approach to identifying SRROs**2.14.2 Some social or environmental events or conditions can negatively impact all organizations,** **introducing risks driven by changing environmental, economic, and regulatory factors.****2.14.3** Sustainability risks can be identified across asset classes, sectors and geographies, or on The basis of length and maturity. **2.15 Sustainability Risk Assessment process****2.15.1 Define Scope and Objectives**1. Determine the boundaries of the assessment (e.g., specific projects, entire organisation,

 supply chain).1. Set clear objectives for what the assessment aims to achieve, such as identifying key

 sustainability risks, compliance with regulations, or improving corporate responsibility.**2.15.2 Stakeholder Engagement**1. Identify internal and external stakeholders (e.g., employees, customers, suppliers,

local communities).1. Engage with these stakeholders to understand their concerns and expectations

regarding sustainability.**2.15.3 Data Collection and Baseline Establishment**1. Collect relevant data on current sustainability practices, environmental impacts, social responsibilities,

 and governance structures. 1. Establish a baseline to measure future improvements.

**2.15.4 Risk Identification**1. Identify potential sustainability 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).1. tools such as [SWOT Analysis](https://purplegriffon.com/blog/fishbone-diagram-ishikawa) (Strengths, Weaknesses, Opportunities, Threats),

[PESTLE Analysis](https://purplegriffon.com/blog/pestle-analysis-template)  (Political, Economic, Social, Technological, Legal, Environmental), or scenario planning.**2.15.5 Risk Analysis and Prioritisation**1. Assess the likelihood and potential impact of identified risks.
2. Prioritise risks based on their severity and the organisation's ability to influence them.

**2.15.6 Risk Mitigation Strategy Development** 1. Develop strategies to mitigate high-priority risks. This could include process changes, adopting

 new technologies, policy revisions, or stakeholder engagement strategies.1. Consider opportunities for sustainability improvements that may emerge from risk

 mitigation strategies.**2.15.7Implementation** 1. Put the risk mitigation strategies into action.
2. This stage may involve changes in operations, training for staff, development of new

 policies, and more.**2.15.8 Monitoring and Review**1. Regularly monitor the effectiveness of the mitigation strategies.
2. Update risk assessment periodically to reflect changes in the organisation's operations, the

 external environment, or stakeholder expectations.**2.15.9 Reporting and Communication**1. Communicate the findings of the SRA and subsequent actions to stakeholders.
2. Transparency in reporting helps build trust and can enhance the organisation's reputation.

**2.16** 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 potential effects on the company’s stakeholders, the reputation of the company and its longevity**.****2.16.1** Describe the processes and related policies the entity uses to identify, assess, prioritise and monitor sustainability-related risks 1. Explain the inputs and parameters the entity uses (e.g., information about data sources

and the scope of operations covered in the processes)1. Explain whether and how the organisation uses scenario analysis to identify

 sustainability-related risks and opportunities1. 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)1. Explain whether and how the entity prioritises sustainability-related risks relative to

other types of risk1. Explain how the entity monitors sustainability-related risks and opportunities
2. Explain whether and how the entity has changed the processes it uses compared with the

previous reporting period**2.16.2** Describe the processes and related policies the entity uses to identify, assess, prioritise and monitor sustainability-related opportunities**2.16.3** 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

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| * + 1. Explain the inputs and parameters the entity uses (e.g., information about data sources

and the scope of operations covered in the processes)  |

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**2.17** Determine range of risk appetite of the entity

a) 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

**2.17.1** 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 Green washing. Green washing 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.g. BP 2010 oil spill where 11 people were killed and the equivalent of nearly 5 million barrels of oil were spilled into the Atlantic Ocean. This settlement agreement at that time added to the $43.8 billion that BP had previously set aside for criminal and civil penalties and clean up costs.

**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.

**e)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 plant 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.

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

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

Most of the entities are affected and impacted by social risks

1. **Diversity, inclusion, and wage equality** may be required by local regulations
2. **Potential health and safety risks** to employees, contractors, and customers and entity’s plans for mitigating them.
3. **Data privacy risks**are covered under regulations like [GDPR](https://www.memcyco.com/home/categories-of-personal-data-explained/) but should also be considered risks to the sustainability of a business.
4. **Anticompetitive behaviour**and business practices.

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

**i) Product liabilities risk -** Product reliability, guaranteeing the compliance with quality and safety regulations

**j) 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

**k) 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 existence, performance, cash flows and prospects over short, medium and long term

**l) 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,

**m) Competitive risk -** Competitive risk is the possibility that a business's competitors will prevent it from growing and being successful. It's 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.

One example of a business that has failed due to competition is Blockbuster. Unable to compete with Netflix and other on-demand streaming, Blockbuster failed to innovate and change with the times.

**n) 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.

**o) 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.

One example of a company that failed due to strategic risk is Nokia, who were the market leaders in mobile phones in the ‘90s and early 2000s. However, they failed to keep up with developing technology and embracing the use of mobile data. They have since tried to return to the market with an Android phone, but many deem it a complete failure.

**2.17.2 Industry specific sustainability risks**

**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 as a result 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 a number of 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.
* Worker 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 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 companies, 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](https://www.techtarget.com/searchdisasterrecovery/feature/Types-of-climate-risk-and-how-DR-teams-can-prepare-for-them) 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 use a lot of energy, water, and 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 telecom sector are governed by compliance with telecom legislation, ethical marketing, and adherence to a number of laws and standards controls that affects 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 a number of 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 have to comply with laws governing land usage, land management, and animal care. Additionally, they must adhere to a number of 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 – Sustainability risks**

* When Vedanta, a basic resources firm with $8bn of revenue and mining operations in Australia, India and Zambia sought to expand the scale of its alumina mining and refining operations in India the firm was required by its primary lender, Standard Chartered, to invest in an independent assessment of sustainability risks. The study recommended that Vedanta upgrade its corporate governance of sustainability firm-wide and implement much stronger policies and reporting. The requirement made by Standard Chartered followed a nine-month study by NGO Survival International into Vedanta’s human rights record in India, as well as a rejection of a Vedanta application to expand a Bauxite mine in Orissa by the Indian Environment Minister due to opposition from local tribes.
* An Automotive company evaluating
1. Financial materiality – How EV battery regulations impact revenue
2. Impact materiality – How Lithium mining affects local communities
* A fashion brand evaluating labour conditions in its factories even if poor labour practices don’t immediately impact its performance
* A real estate company assessing how rising sea levels might decrease property values and impact existence, performance, cash flows and prospects of the entity over short, medium and long term
* In 2019, the fast fashion retailer **H&M** 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 H&M's primary product line. This incident not only damaged H&M's reputation but also led to increased scrutiny of its overall sustainability claims. Multiple legal complaints were filed against the company,
* **Volkswagen.** The automaker faced global reputational damage and financial penalties due to a 2015 diesel emissions scandal. Volkswagen 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. Volkswagen has since committed to move toward electric vehicles and enhance its environmental compliance efforts.
* **Foxconn -** In 2010, for example, a series of suicides at Foxconn, Apple's leading manufacturing partner in China, shocked the tech industry. The tragedy thrust into the global spotlight an uncomfortable truth: The sleek iPhones and iPads that had become symbols of innovation and progress were produced under highly stressful conditions for workers.
* **The Delaware International Petroleum Corporation** (IPC) case is a clear example of this. The 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.

### **Facebook-Cambridge Analytical Data Scandal** **(2018) -**  This scandal highlighted the social risks associated with data privacy and management. Facebook 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.

### **Boohoo’s Supply Chain Labour Practices (2020) -** Reports of unethical working conditions and underpayment of workers in Boohoo’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.

 **2.18 Reasonable and supportable information**

**2.18.1** 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.

**2.18.2** 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.

**2.18.3** 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 existence, performance, cash flows and prospects 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 efforts for the entity and the benefits of the resulting information for stakeholders. However, that assessment can change over time as circumstances change.

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

**2.19.1** 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

1. 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;
2. a merger or acquisition that expands the entity**’**s value chain;
3. a supplier in the entity**’**s value chain may be affected by the introduction of a new regulation

**3. Materiality**

**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 or obscuring 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 primary users and their information needs. This means that, for example:

1. information about a sustainability-related risk or opportunity that management determines *could not reasonably be expected to* influence stakeholders decisions would not be considered to be material;
2. information cannot be assumed to be immaterial simply because users have not asked for it; and
3. 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:

1. buying, selling or holding equity and debt instruments;
2. providing or settling loans and other forms of credit; and
3. 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 focus on only the needs of, for example, existing investors, lenders and other creditors when determining the information it provides.

**3.6** Materiality judgements are specific to an entity. Consequently, this Standard 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

**3.6** 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 sustainability-related risks and opportunities, an entity needs to understand the resources and relationships it depends on and affects.

Resources and relationships can :

1. be Internal such as entity’s workforce, its know how or its organizational processes
2. be external such as the material and services the entity needs to access or the relationships it has with the suppliers, distributors and customers
3. include but not limited to the resources and relationships recognized as assets in the reporting statements of the entity

**4.2** To identify its 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 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:

1. depends on resources and relationships to generate cash flows; and
2. affects resources and relationships through its activities and outputs

**4.5** To identify 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-impact impacts / outcomes might be material either individually or in combination with information about other low-probability and high-impact outcomes

1. If a possible future event is expected to affect an entity’s prospects and cash flows a long time after in future, information about that event is in such case 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 in 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** 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.

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

**(a)** **Scale:** how grave the impact is

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

**(c)** **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 of time. 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. Whenever a qualitative analysis is sufficient for the entity to reasonably conclude that a matter is ‘not material’ or ‘material’, additional quantitative information would add 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.

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

(b) 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:

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

• The information’s relevance to the entity’s purpose and business, by taking into account the nature, magnitude and likelihood of actual or anticipated effects likely to emanate from the SRROs.

• 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

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

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

**5. Case study – Pfizer’s Materiality assessment**

**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

1. business impact
2. 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.

**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.

**7. Materiality judgements**

**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.

**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.

**For example**

1. Social media and privacy regulations were not financially material for Tech companies in the early 2000s, but have become today due to consumer data protection laws
2. 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

**11. Entity-specific qualitative factors**

Examples include: • the nature of the sustainability risk or opportunity; • the extent to which the entity’s business model and strategy depend on particular resources or relationships—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, for example, because of an unexpected variation compared to the prior-period amount provided in the sustainability-related disclosures.

**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 a number of external qualitative factors. External qualitative factors could remain constant over time or could change.

**11.2 Qualitative / 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.

**12. Disclosing material information**

**12.1** If an entity concludes that particular information that is necessary to enable stakeholders to understand the effects of a sustainability-related risk or opportunity on the entity’s existence, performance, cash flows and prospects is material, then I the entity 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 whether the information is omitted or misstated

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

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

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

1. the understand ability 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.

**13. Scenario analysis**

1. A scenario describes a path of development leading to a particular outcome.
2. 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.
3. They are hypothetical constructs, not forecasts or predictions
4. In a world of uncertainty, scenarios are intended to explore alternatives that may significantly alter the basis for “business-as-usual” assumptions.
5. The goal of scenario analysis is to explore the way that factors interact, and each action should have a reaction.
6. 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.
7. 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
8. 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.
9. 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**

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.

v)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:

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

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

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

**14. Commercially sensitive information**

* 1. If an entity determines that information about a sustainability-related opportunity is commercially sensitive ,the entity is permitted to omit that information from its sustainability-related disclosures.
	2. An entity qualifies for the exemption if, and only if:
1. information about the sustainability-related opportunity is not already publicly available;
2. 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:

(a) disclose the fact that it has used the exemption; and

(b) 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:

(a) 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

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

(c) 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:**

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

* 1. between disclosures on governance, strategy and risk management; and
	2. between qualitative information and quantitative information (including related metrics and targets and information in the related financial statements).

b) 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.

**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**

**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 particular business models, activities or other common features that characterise an industry.

**17.8** 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** how 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:

1. disclose a revised comparative amount, unless it is impracticable to do so;
2. explain the changes; and
3. 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**

**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:a) the metric used to set the target and to monitor progress towards reaching the target;b) the specific quantitative or qualitative target the entity has set or is required to meet;c) the period over which the target applies;d) the base period from which progress is measured;e) any milestones and interim targets;f) performance against each target and an analysis of trends or changes in the entity’s performance; andg) 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 : |   |
| (a) disclose a revised comparative amount, unless it is impracticable to do so;  |   |
| (b)explain the changes; and (c)explain the reasons for the changes, including why the redefined or replacement metric provides more  useful information.  |   |   |   |

**19.** **Disclosures on Judgements**

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

1. In the process of making sustainability - related disclosures
2. Have the most significant effect on the information included in those disclosures

For example, an entity makes judgement in

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

(b)Identifying material information to include in the sustainability - related disclosures

 (c) 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

1. 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
2. Significant change in entity’s business model ( e.g. a merger or acquisition that expands the entity’s value chain)
3. 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**

Disclosure on measurement uncertainty shall

1. Identify amounts that are subjected to high level of measurement uncertainty
2. In relation to each amount in (a) disclose information about
3. 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
4. Assumptions, approximations and judgements made in measuring the amount Errors

**21. Errors**

**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.

**21.3** Potential reporting period errors discovered in that period are corrected before the sustainability-related financial 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 financial disclosures, it shall disclose

i) 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**

**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

* Can aggregate sustainability KPIs across departments or geographic locations
* Could be optimized for fast querying
* Can perform trend analysis based on historical data
* Energy usage by facility and equipment, including peak usage times and energy sources
* Breakdown of GHG emissions based on geographic location and operational unit
* Data on water intake, waste recycling, and disposal methods across different stages of operations
* Supplier compliance score
* Metrics on employee engagement in sustainability programs and CSR initiatives

**Data Lake**

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

* Scalability in handling large volumes of diverse data
* Flexibility that allows raw data to be stored, which can later be transformed or processed
* More cost-effective for storing large amounts of data compared with traditional databases
* Real-time data streams from internet-of-things (IoT) devices tracking energy and resource usage in manufacturing
* Images for deforestation tracking, water body monitoring, and urban sprawl
* Unstructured data from social platforms to gauge public sentiment on the company’s sustainability
* Data that assesses the impact of operations on local community and wildlife
* Models and simulations that predict the potential impact of climate change on operations

**Data Lake house**

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

* Unified architecture that supports raw and structured data
* Support for large-scale and real-time data processing and analytics
* Reduced need for separate systems and data integration processes
* Data management capabilities that can provide better governance Real-time production line data such as monitoring outputs, energy use, and waste generation
* Logistics data tracking product movement, associated GHG emissions, and opportunities for route optimizations
* Commute data from the employees’ modes of transportation
* Internal and external sustainability audits
* Aggregated data on market trends and consumer preferences for sustainable products
* 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).

## 22.2 AI and machine learning for sustainability reporting

## 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.

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

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

## Deploying ML models for predicting future emissions

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

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

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

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

## 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