Mapping of the Aligned Indicators for Sustainable Infrastructure (AISI) against Established ESG Systems

Selection No. 1272417

Final Submission
DRAFT FOR REVIEW

submitted to PPIAF

April 30, 2021

Prof. Spiro N. Pollalis
Evgenia Chatzistavrou
Olga Tzioti

Prof. Dr. S.N Pollalis, Inc., Belmont, MA

Contents

ACKNOWLEDGEMENTS

The authors would like to thank for their contribution: Philippe Neves, PPIAF, World Bank; Vaishnavi Rupavatharam, Research Assistant, PPIAF, World Bank; Merita Salihu, Consultant, Infrastructure PPPs, World Bank Group; and Xiaohan Shao, Consultant, Public-Private Infrastructure Advisory, World Bank Group.

EXECUTIVE SUMMARY

The Aligned Indicators for Sustainable Infrastructure (AISI) is the product of a research project of ISCA, ISI Envision, GBI, and GRESB, under the leadership of GIB, sponsored by the Public-Private Infrastructure Advisory Facility (PPIAF). AISI harmonizes sustainability indicators and thereby "mobilizes greater levels of private capital into emerging markets sustainable infrastructure." AISI intends to operate in a space currently occupied by three overlapping regimes: the SDGs, national laws and regulations, and the ESG (environmental, social, and governance) standards of various IFIs or other financiers.

This research report presents the methodology and the findings of mapping the AISI against established ESG systems. The mapping tracks how AISI "echoes" those ESG initiatives as a starting point at the government/developer early-stage and AISI's compatibility with other and more comprehensive standards downstream when private sector investors start considering a project.

The following ESG systems were used to map AISI:

- The European Union (EU) ESG Regulations.
- The 'group of five' Corporate Reporting System (5ISS).
- The World Economic Forum's (WEF) and the International Business Council (IBC) ESG Reporting Metrics and Disclosure Standards.
- The International Organization for Standardization (ISO's) TC322 Standards.
- The International Financial Reporting Standards Foundation's (IFRS) Standards.
- The Task Force on Climate-related Financial Disclosures (TCFD) Framework.

It should be noted that AISI has been designed to be applicable at the project level, while the ESG systems that we compared to AISI have been designed to be applicable at an enterprise level. As a result, certain assumptions were necessary to converge the two.

The mapping highlights AISI's set of topics and related indicators and their relations with the other systems when information is available. It also identifies important features of the ESG systems, which AISI does not address, as well as unique features of AISI. Some of the above ESG systems like ISO TC322 and IFRS, are still under development and the mapping was not possible.

After analyzing the above ESG systems, the mapping was carried at two levels: first, an overall high-level mapping of all systems. Then, the detailed mapping followed between AISI and each of the selected ESG systems. The high-level mapping investigated the compatibility between AISI and the compared ESG

systems for the tools' scope, compatibility, ease of use, compactness, comprehensiveness, relevance to infrastructure projects, structure, and content. The findings of the high-level mapping led to the selection of ESG systems to be included in the detailed mapping to follow. Those systems are WEF-IBC, SASB, and GRI (both part of the systems that constitute 5ISS), TCFD Recommended Disclosures, EU NFRD, and EU SFDR (both included in the EU ESG Regulations).

The detailed mapping aims to investigate the degree to which the ESG systems address the Environmental, Social Governance aspects (through their indicators and topics), to what degree they address the SDGs, and the level of alignment between the indicators of AISI and the mapped systems' content.

A cross-system reading of the results of mapping follows to present the findings of the high-level mapping. Then, the findings of the detailed mapping are presented as they relate to key sustainability issues: climate risk, GHG emissions, energy, water, solid waste, air quality, biodiversity, and human capital.

All findings are based either on the indicators or metrics identified as omitted by AISI but present in other ESG systems. The findings are also based on the observed similarities or differences in the approach and methodology used by each ESG system regarding the selected sustainability topics.

The cross-reading of the mapping reveals that AISI is a useful tool to its stated primary audience, i.e., governments and public authorities at the beginning of infrastructure planning, prioritization and procurement. Through its selection of indicators which tackle all ESG aspects, AISI provides guidance to decision-makers who are willing to further integrate sustainability in infrastructure projects.

It is also observed that the selection of AISI's sustainability topics is highly compatible with the mapped ESG systems. Considering that the mapped systems mainly refer to investors, it can be concluded that AISI's selection of topics is well-targeted to investors, being AISI's secondary audience. Infrastructure companies that collect and disclose information through the use of AISI's set of indicators can provide these data to investors who, with appropriate further elaboration according to their financial criteria, may draw conclusions in their own areas of interest.

1. INTRODUCTION

In recent years, momentum has grown towards a coalescence of the major non-financial reporting standards. Investors have started to join the discussion and reporting businesses have expressed interest in harmonized standards for non-financial reporting.[1] The main trends include work on proving or enhancing reporting systems alignment to the Sustainable Development Goals (SDGs), the Paris Agreement goals, and alignment to the Task Force for Climate-related disclosures (TCFD) recommendations.

[1] KPMG IMPACT. (December 2020) "The time has come: The KPMG Survey of Sustainability Reporting 2020." https://home.kpmg/xx/en/home/insights/2020/11/the-time-has-come-survey-of-sustainability-reporting.html

AISI, as its name highlights, Aligned Indicators for Sustainable Infrastructure, was envisioned as a response to the investors demand for SDG and Paris Agreement goals and targets alignment of infrastructure projects. Since the AISI project started, the ESG ecosystem is undergoing a fundamental transformation with the major established ESG systems updating their frameworks and standards to align and create one comprehensive global standard.

2. AISI SCOPE

"The AISI is a communication and synthesis effort by the leading sustainability standard-setters and benchmarkers to showcase an agreement on essential indicators that mark the path towards achieving infrastructure sustainability. This set of derived indicators signals characteristics that are deemed necessary but not sufficient to ensure a project's overall sustainability. AISI is compact and easy to use but it is not a new standard. The AISI is a publicly available guidance tool that seeks to raise investor awareness on how to enhance the sustainability of infrastructure assets and services. It is intended to bridge the universe of ESG indicators from different financial institutions, national systems and the SDGs. The AISI helps 'preposition' projects through sustainability design to facilitate the later adoption of standards. Plus, it does not have in principle an assurance system that might be required to validate the accuracy of the reported information on the indicators."[2]

The overall goal of AISI is to mobilize greater private capital levels into the emerging market of sustainable infrastructure. Due to the increasing demand by investors for SDG– and Paris Agreement– alignment, "AISI aims to assist investors to better understand the contribution of their investment to the SDGs." It is a set of indicators built upon existing global corporate indicators "but further includes the specificities of infrastructure assets." "It is not intended to fully cover the comprehensive range of sustainability characteristics which would be required to define sustainability in infrastructure', but rather highlight 'characteristics that deemed as necessary for early consideration by investors when prioritizing projects. Therefore, "the indicator set is not a comprehensive list of reporting requirements, but reporting on them as a minimum is a first step towards mainstreaming evidence-based sustainable infrastructure." AISI also contributes to further ESG disclosure and hence fosters transparency, as demonstrated through the inclusion of process-based indicators that require documenting processes and plans in place.

3. SCOPE OF THE MAPPING EXERCISE

"The present assignment aims at AISI addressing other ESG systems' efforts through "mapping." The mapping refers to tracking how AISI "echoes" other established ESG systems and related recent initiatives.[3] The mapping exercise is based on AISI's structure and content and enables to highlight how AISI's set of topics and related indicators are addressed by the other systems. Additionally, the mapping

[2] PPIAF. "Promoting Sustainable Infrastructure through an Aligned Set of Sustainability Indicators (AISI)" version March 2021.

[3] 'Objective and Scope of Work for the Mapping Exercise' document by PPIAF.

identifies important features from other systems that AISI may not address, e.g., sector-specific information.

The mapping exercise initially involved a list of ESG systems for mapping against AISI, which reflect the response of established ESG standards and frameworks and regulators –in the case of the EU– to the on-going discourse and research on the need for a globally relevant set of standards for ESG disclosure of companies. These ESG systems have either been recently developed or are in the process of development.

List of suggested ESG Systems:

- The European Union (EU) ESG Regulations:[4]
  - EU Taxonomy Regulation
  - EU SFDR – Disclosure Regulation
  - EU NFRD - Non-financial Reporting Directive
- The 'group of five' Corporate Reporting System, a joint effort by:
  - CDP (former Carbon Disclosure Project's)
  - Climate Disclosure Standards Board's (CDSB)
  - Global Reporting Initiative's (GRI)
  - International Integrated Reporting Council's (IIRC)
  - Sustainability Accounting Standards Board's (SASB)
- The World Economic Forum's (WEF) and the International Business Council (IBC) ESG Reporting Metrics and Disclosure Standards
- The International Organization for Standardization (ISO's) TC322 Standards
- The International Financial Reporting Standards Foundation's (IFRS) Standards
- The Task Force on Climate-related Financial Disclosures' (TCFD) Framework

The on-going efforts by each ESG system for disclosure of companies are summarized below:

- In March 2018, the EU Commission issued its Action plan on Financing Sustainable Growth, also known as the 'Action Plan'. The plan includes ten action points, three regulations in the areas of taxonomy, disclosure and low carbon benchmark. As part of one of the 10 actions of the Plan EU commits to review the EU Non-financial Reporting Directive (NFRD). In June 2019 Supplemental Guidelines were published on reporting climate-related information and in 2020 the EU launched two public consultations on the revision of NFRD. Based on the results of the consultations, in April 2021 the European Commission presented a proposal for a Corporate Sustainability Reporting Directive as a revision of the NFRD reporting rules.

[4] The under revision EU Regulations are part of a broader plan, the EU Action Plan for sustainable finance, that includes three regulations: the EU Taxonomy regulation, the EU Disclosure regulation, and the Climate Benchmark regulation. The latter will not be part of the mapping exercise, given that benchmarking is out of ASSI's scope. The EU Non-financial Reporting Directive is included in the mapping exercise as along with the EU Taxonomy sits at the center of the EU ESG Regime "with the NFRD providing the raw ESG data (at least from large EU corporates) and the taxonomy providing the official ESG classifications and associated technical criteria." (source: EU ESG Regulations guide, 2020).

- Five major non-financial reporting organizations (GRI, SASB, IIRC, CDSB and CDP) have published in September 2020 a Statement of Intent, committing to work together towards comprehensive corporate reporting.
- The World Economic Forum and International Business Council (IBC) launched a project to develop a common set of baseline ESG metrics for consistent reporting for sustainable value creation and released its paper defining 21 core metrics in September 2020.
- ISO formed in 2018 the ISO/TC 322, a technical committee on Sustainable Finance to establish a framework under which new standards may be developed to define and guide certain sustainable finance activities.[5] A Supporting statement to ISO/TC 322 scope was released in September 2019 and the ISO/TC 322 Strategic Business Plan v1 became publicly available in April 2020. The under development work is estimated to be completed in a 4 to 8 years period.
- The IFRS Foundation issued a consultation in September 2020 to end of December 2020 to calibrate market views on a global standard for sustainability reporting. Though the consultation results are not yet published, it has received strong support from other organizations, like IOSCO (International Organization of Securities Commissions).
- The Task Force for Climate- related Disclosures (TCFD) published its Recommendations on Climate-related disclosures in June 2017 along with an Implementation guide for companies, including example metrics. Since then TCFD has been growingly adopted by major organizations, who seeked to align with the TCFD framework. In October 2020 TCFD published Guidance on Scenario Analysis for Non-Financial Companies and realized a consultation during October 2020- January 2021 to determine whether further TCFD financial sector guidance on forward-looking metrics is needed. [6]

A more detailed presentation of the evolution of the systems under review is presented in a timeline in Appendix A.

The 13 listed ESG systems are categorized in three main types:

- ESG regulations and related guidelines.
- Conceptual reporting frameworks.
- ESG reporting standards.

AISI is an ESG guidance tool, however none of the other under review systems is identified as such therefore no relevant category was added. Though AISI does not belong in the category of reporting

[5] ISO/TC 322 will seek contributions from other ISO/TCs (several of which already have directly applicable standards; for example, supporting management and reporting) and from external stakeholders and organizations. More specifically, TC 322 has close cooperation with TC 68 in the field of financial services, TC 207 in the field of environmental management, TC 251 in the field of asset management and TC 309 in the field of governance of organizations. (https://www.iso.org/committee/7203746.html)

[6] On December 4, 2015, the Financial Stability Board (FSB) established the industry-led Task Force on Climate-related Financial Disclosures (TCFD) with mission to develop voluntary, consistent, climate-related financial disclosures for use by companies in providing information to lenders, insurers, investors and other stakeholders, which were published in the TCFD Recommendations Report on June 29, 2017.

standards, it relates more to this category. Therefore for the purposes of the present mapping exercise AISI is considered to be sufficiently represented by the category 'standards'.

The mapping exercise could not be performed in equal terms for the three types of ESG systems. It is important to define what the 'mapping exercise' aims to demonstrate. The terms 'consistency,' 'compatibility,' and 'alignment' were explored to determine if applicable:

- **alignment** is the process of reaching compatibility, and
- **consistency** suggests a higher level of precision, that would be a high bar to reach or even assess.' Therefore, consistency is not a term to use for AISI mapping.

The choice of the right term depends on the type of the ESG system that is mapped. Each of the three main identified types of systems are mapped to serve a different purpose, expressed by the appropriate term:

Identified system types	Purpose of mapping
ESG Regulations	explore AISI's alignment with mandatory requirements.
Frameworks	explore if and how AISI seeks to implement the framework; moreover, because the framework may have a broader scope, compatibility should be explored along their common ground, of relevant scope.
Standards	explore **overlaps, omissions, and additions;** there is no need for proving compatibility or not in similar to AISI of ESG guidance, but rather highlight if there is a duplication of effort or a significant degree of covering the same issues through similar indicators. This is basically where the added value of AISI can be proven.

4. OVERVIEW OF METHODOLOGY DEVELOPMENT

The exact methodology for the AISI mapping exercise included the following tasks:

Task 1: Analysis of AISI (latest version March 19, 2021)
The AISI tool manual of March 19, 2021 is used as the basis for the mapping exercise. The tool has been studied in terms of scope, boundary of assessment, structure and content to determine what the mapping exercise should entail. Given that mapping will refer to AISI, i.e., the other systems will be mapped against AISI, its analysis determines the mapping exercise 'areas of comparison.'

Task 2: Analysis of the suggested ESG systems

The latest up-to-date information on the suggested systems has been used as the basis for the mapping. It is essential to provide a full description of each system and select those features that are considered essential to enable comparison or determine the appropriate or possible level of comparison. The systems documentation review is focused on the objectives of the mapping exercise.

Task 3: Development of a methodology for the high-level mapping of AISI against the suggested systems
The high-level mapping aims to provide a broad overview of the systems to help track compatible features in terms of scope, ESG focus, methodological and analytical tools used, infrastructure project relevance, etc. This task includes developing a matrix for the ESG systems to be studied, consisting of selected features. This matrix is used as the primary tool for high-level identification of each system's alignment. The methodology is presented in Section 7 of this report.

Task 4: Interpretation of the systems matrix
After the methodology of the high-level mapping was established, an initial high-level exercise started. This exercise aimed to determine the final selection of systems to be included in the detailed mapping exercise to draw meaningful conclusions according to the mapping objectives. As a result of the completed review of systems and after completing the high-level mapping, the level of relevance in terms of scope, structure, and content compatibility to AISI is revealed for each ESG system.

Task 5: Development of methodology for detailed mapping
After performing a high-level mapping, the mapping exercise moves on to a higher level of detail. This task focuses on assessing the alignment between the examined systems indicators and units. It aims to investigate:

- the mapped systems structural alignment and their level of relevance with the ESG aspects,
- how and in what degree they address the SDGs, and
- the level of alignment between the indicators of AISI and the indicators of the mapped system.

To complete the above objectives, two different methodologies were applied for mapping, depending on the type of systems mapped against AISI, as presented in Section 8.2.

5. HIGH - LEVEL OVERVIEW OF SUGGESTED SYSTEMS (SYSTEMS MATRIX)

A main objective of the high-level mapping is to select the systems to be used for mapping. As part of this task, a spreadsheet was developed, a matrix of all ESG systems, containing four broad categories of data:

- **General system data;**
- **System scope data;**
- **System structure data; and**
- **System content data**

The following fields of data in the systems matrix are grouped under the four broad categories of data as follows:

General system data

- name of the ESG system,
- system developer,
- development status, and
- released versions (if more than one).

System scope data

- type of ESG guidance (reporting frameworks, standards, combined frameworks & standards, reporting guidelines or regulations),
- mandatory or voluntary,
- target audience,
- global or regional,
- ESG focus (Environmental, Social, or Governance),
- climate-specific (Y/N),
- project level or corporate,
- infrastructure-specific (Y/N), and
- infrastructure relevant (Y/N).

System structure data

- number of guidance documents,
- main structural components,
- economy sector-specific (Y/N),
- target economy sectors/industries (list of sectors/industries considered),
- sustainability topics, and
- number of indicators.

System content data

- inclusion of benchmarks,
- infrastructure- relevant indicators,
- prescription of metrics,
- number of quantitative indicators,
- number of qualitative indicators,
- connection to project phases (Y/N),
- connection/reference to other ESG systems (Y/N and list of referenced ESG systems),
- connection to Sustainable Development Goals (SDGs) (direct or indirect), and
- connection to the TCFD framework.

The proposed fields of systems matrix are based on AISI, however, they draw from other systems those features that will enable a full system description without omitting key features of the other systems that AISI does not address (e.g. sector-specific information).

The individual frameworks and standards of the 5ISS system (CDP, CDSB, GRI, IR and SASB) have been analyzed in addition to the 5ISS. Therefore, the systems matrix contains data of **13 systems**.

The following tables are part of the entire matrix and present two of the four categories of data: the "system scope" and "systems content." The respective tables of the remaining categories (i.e. "systems general data" and "systems structure") are in the Appendix B.

Table 1: System Matrix Table (systems scope-related data)

SYSTEMS SCOPE									
SYSTEM	TYPE OF ESG GUIDANCE	MANDATORY OR VOLUNTARY	TARGET AUDIENCE	GLOBAL OR REGIONAL	ESG FOCUS	CLIMATE-SPECIFIC	PROJECT or CORPORATE	INFRASTRUCTURE - SPECIFIC	INFRASTRUCTURE - RELEVANT
AISI	ESG Guidance tool	Voluntary	public authorities in EMDEs, Investors and private financiers, International Financial Institutions (IFIs)	Global	E,S,G	NO	Project	YES	YES
EU TAXONOMY (PHASE 1)	ESG Regulation (classification of environmentally sustainable activities)	Mandatory	Financial market participants, Large companies required to provide non-financial statement under NFRD, EU and member states when setting standards or labels for green financial products or green bonds	Regional (however certain criteria are of international relevance[7]	E[8]	YES (Phase 1 focuses on criteria for substantial contribution to climate change mitigation and adaptation)	Business activities	NO	YES
EU SFDR	ESG Regulation (sustainability disclosure obligations)	Mandatory	Investors	Regional	E,S	NO	Corporate	NO	YES
EU NFRD	Guidelines on non-financial reporting & Supplement guidelines on reporting climate-related information	Mandatory[9]	Investors	Regional	E,S	YES[10]	Corporate	NO	YES

[7] A taxonomy reflecting only a single jurisdiction and its associated activities will not allow issues and investors to cover all of their international activities or investments. To resolve this issue, the Technical Expert Group on Sustainable FInance (TEG) –set by the European Commission to develop the Taxonomy– has identified certain criteria in the EU taxonomy as being of "international relevance", meaning that users of the taxonomy could use them for economic activities located outside the EU. The EC also launched an International Platform on Sustainable Finance (IPSF) in September 2019 as a way to facilitate the exchange of views on best practices, promote international cooperation and, when appropriate, coordination in the area of environmentally sustainable finance.

[8] The EU defines "Sustainable Finance" as the process of considering the environmental and social impact in investment decision-making, leading to a growth of long-term investments and sustainable activities. While the plan recognizes the key role of governance, there's a clear focus on environmental and social considerations.

[9] EU NFRD requires public-interest entities (PIEs) with more than 500 employees (and that have either a balance sheet total of more than EUR 20 million or a net turnover of more than EUR 40 million) to include a non-financial statement in their annual report

[10] EU. (2019)Supplement on reporting climate-related information

5ISS	Corporate Reporting System on **Climate Change** (Combination of Frameworks & Standards)	Voluntary	Investors	Global	E, G	YES	Firm- & Product level	NO	YES
CDP Questionnaires	Initiative [11] not Standard	Voluntary	Investors	Global	E,G	YES	Both but mainly corporate	NO	YES
CDSB Framework	Framework for reporting environmental & climate change information	Voluntary	Investors	Global	E	YES (additional focus)	Corporate	NO	YES
GRI Standards	Reporting principles and standards[12]	Voluntary	All stakeholders, including customers, employees, civil society, governments, and investors	Global	E,S,G	NO	Both	NO	YES
INTERNATIONAL <IR> FRAMEWORK	Integrated Reporting Framework	Voluntary	Investors	Global		NO	Corporate	NO	YES
SASB Standards	Reporting system (Conceptual Framework & Standards)	Voluntary	Providers of financial capital, such as investors, lenders, and underwriters	Regional (US)	E,S,G	NO	Both but mainly corporate	NO	YES
WEF-IBC ESG Reporting Metrics and Disclosure Standards	~~Tool/~~ ESG Reporting Metrics and Disclosure Standards	Voluntary	Investors	Global	E,S,G	NO	Both but mainly corporate	NO	YES
ISO / TC 322	Standards	Voluntary		Global	E,S,G	NO	-	NO	YES
IFRS Consultation	Financial reporting standards integrating sustainability and climate change	Voluntary	Investors, lenders and other creditors	Global	-	-	Corporate	YES	-
TCFD Framework	Framework/ Recommendations for climate-related disclosures	Voluntary	Lenders, insurers, investors and other stakeholders	Global	E,G	YES	Both but mainly corporate	NO	YES

[11] CDP is not a standard but rather considered a precursor to standards or de-facto standards. Platform = the repository for sustainability information (Source: 5ISS Statement of Intent)

[12] GRI Reporting standards are aimed to be used to prepare a sustainability report which is based on the Reporting Principles and focuses on material topics

Table 2: System Matrix Table (systems content-related data)

SYSTEMS CONTENT							
SYSTEM	**INCLUSION OF BENCHMARKS**	**QUANTITATIVE INDICATORS**	**QUALITATIVE INDICATORS**	**CONNECTION TO PROJECT PHASES**	**CONNECTION/REFERENCE TO OTHER ESG SYSTEMS**	**CONNECTION TO SDGs (DIRECT OR INDIRECT)**	**CONNECTION TO TCFD FRAMEWORK**
AISI	NO	10	17	YES	GRESB, ISCA, CEEQUAL, GIB, ISI ENVISION, TCFD	YES (DIRECT)	YES
EU TAXONOMY (PHASE 1)	YES technical screening criteria (per sector and activity)			NO	NO	YES (INDIRECT)[13]	NO
EU SFDR	NO	YES	YES	NO	EU TAXONOMY	YES (INDIRECT)	NO
EU NFRD	NO	YES	YES	NO	TCFD, GRI, CDP, CDSB, SASB, IIRC and EU EMAS (Eco-Management and Audit Scheme) EU TAXONOMY	YES (INDIRECT)	YES
5ISS	NO			-	CDP, CDSB, GRI, IR, SASB		YES
CDP	NO	YES	YES	NO		YES (DIRECT)	YES
CDSB	NO	NO	NO	NO		YES (DIRECT)	YES
GRI	NO	YES (quantitative reporting requirements)	YES			YES (DIRECT)	NO
<IR>	NO	NO	NO			YES (DIRECT)	NO
SASB	NO	YES (quantitative accounting metrics specific per industry)	YES (accounting metrics specific per industry; called 'Discussion and Analysis'			YES (DIRECT)[14]	NO

[13] Translates the Paris Agreement and SDGs considered where necessary in the 'do no significant harm' evaluation

[14] SDG Mapping performed and SASB disclosure topics linked to SDG goals and targets, however the Materiality map, the main interactive SASB tool or the various industry standards does not include this information.

WEF-IBC	NO	YES	YES	NO	Indicators sources: the CDP, CDSB, GRI, IIRC and SASB.	YES (directly linked with each pillar)	YES (DIRECT)
ISO TC322	N/A	-	-	NO	-	YES	
IFRS	-	-	-	-	reference to TCFD, SASB, GRI,CDSB, CDP	-	YES
TCFD	NO	YES	YES	NO	EU, CDP, CDSB, GRI, IIRC, SASB	YES (SDG 13)	

6. ESG SYSTEMS ANALYSIS

As part of the analysis, the information on AISI and the under review systems is summarized and presented through the same format 'tables:' "System Overview Tables" and "Structure Tables," as a more consistent and comparable way of presenting the ESG systems. They build upon the 'Systems matrix' and expand and illustrate the information further.

6.1. Analysis of AISI

Reference document: PPIAF. Promoting Sustainable Infrastructure through an aligned set of sustainability indicators (AISI). Version March 19, 2021.

Table 3: AISI Overview Table

AISI OVERVIEW TABLE	
GENERAL SYSTEM DATA	
NAME OF ESG SYSTEM	Aligned Indicators for Sustainable Infrastructure(AISI)
SYSTEM DEVELOPER	World Bank's Public-Private Infrastructure Advisory Facility (PPIAF) with support from the Global Infrastructure Facility (GIF)
DEVELOPMENT STATUS	Under review to incorporate feedback from consultations
AMENDMENT OF PRIOR VERSION OR NOT	NO
BRIEF DESCRIPTION	AISI is a new ESG guidance tool for investors that assists to more informed decisions during infrastructure projects' prioritization for funding and understanding the contribution of an investment to the SDGs. It is a set of indicators built upon existing global corporate indicators "but further includes the specificities of infrastructure assets." "It is not intended to fully cover the comprehensive range of sustainability characteristics which would be required to define sustainability in infrastructure', but rather highlight 'characteristics that are deemed as necessary for early consideration by investors when prioritizing projects.

	Therefore, "the indicator set is not a comprehensive list of reporting requirements.
SYSTEM SCOPE	
TYPE OF ESG GUIDANCE	ESG Guidance tool
MANDATORY OR VOLUNTARY	Voluntary
TARGET AUDIENCE	Government clients in emerging economies, development finance institutions, and private investors among other[15]
GLOBAL OR REGIONAL	Global (for developed and developing countries)
ESG FOCUS	E, S and G (Environmental, Social and Governance)
CLIMATE-SPECIFIC	NO
PROJECT OR CORPORATE	Project
INFRASTRUCTURE-SPECIFIC	YES
INFRASTRUCTURE-RELEVANT	YES
SYSTEM STRUCTURE	
NO. OF GUIDANCE DOCUMENTS	1
MAIN STRUCTURE COMPONENTS	28 indicators organized in 15 sustainability topics
ECONOMY SECTORS-SPECIFIC	NO
TARGET ECONOMY SECTORS/INDUSTRIES	-
SUSTAINABILITY TOPICS	1. Option Assessment 2. Project Sustainability Management 3. Gender 4. Resilience 5. Stakeholder Engagement 1. Water

[15] Source: Inter-American Development Bank (IDB's) Climate Change Division. (September 2020) MDB Infrastructure Cooperation Platform: A Common Set of Aligned Sustainable Infrastructure Indicators (SII)

	2. Energy/GHG 3. Materials Lifecycle approach 4. Air Quality 5. Biodiversity 6. Sustainable Supply Chain 7. Anti-corruption 8. Project Procurement 9. Working Conditions 10. Service Affordability		
CATEGORIZATION OF TOPICS AS E, S, or/and G	**ENVIRONMENTAL** Water Energy/GHG Materials Lifecycle approach Air quality Biodiversity	**SOCIAL** Gender Stakeholder Engagement Working Conditions Service affordability	**GOVERNANCE** Option Assessment Project Sustainability Management Resilience Sustainable Supply Chain Anti-corruption Project Procurement
NUMBER OF INDICATORS	28		
NUMBER OF INDICATORS PER ESG ASPECT	E:9, S:12, G:7		
NUMBER OF INDICATORS PER SECTOR	Not Applicable		
NUMBER OF INFRASTRUCTURE-RELEVANT INDICATORS	28		
SYSTEM CONTENT			
INCLUSION OF BENCHMARKS	NO		
QUANTITATIVE VS. QUALITATIVE METRICS	13 quantitative indicators	15 qualitative indicators	
REPORTABLE VALUE PER PROJECT PHASE	YES		
CONNECTION/ REFERENCE TO OTHER ESG SYSTEMS	YES		

CONNECTION TO SDGs (DIRECT OR INDIRECT)	YES DIRECT (connection of indicators to specific SDGs & targets)
CONNECTION TO TCFD FRAMEWORK	YES (Reference of TCFD as part of the 'Climate risk resilience' indicator

AISI's analysis includes the classification of indicators according to their relevance to ESG aspects and according to their type (quantitative or qualitative). This analysis is presented in the following table:

Table 4: AISI's structure and content highlighting ESG aspects and types of indicators

SUSTAINABILITY TOPICS	INDICATORS	METRICS	E, S, G	TYPE OF INDICATOR
Option Assessment	**1 Strategic options assessment**	Existence of a strategic options assessment	**G**	process-based
Project Sustainability Management	**2 Sustainability management system**	Implementation of a sustainable management system and reporting	**G**	process-based
Gender	**3 Gender equality, inclusiveness and empowerment**	Existence and Implementation of a comprehensive gender action plan (GAP).	**S**	process-based
Resilience	**4 Climate Risk Resilience**	Implementation of a climate risk adaptation plan	**G**	process-based
	5 Cybersecurity resilience	Number of system vulnerabilities identified affecting infrastructure's critical assets or processes	G	quantitative
Stakeholder Engagement	**6 Stakeholder engagement plan**	Existence of a meaningful and inclusive stakeholder engagement process and plan.	**S**	process-based
	7 Free, Prior and Informed Consent (FPIC)	Obtainment of Free, Prior and Informed Consent (FPIC)	**S**	process-based
	8 Involuntary Resettlement	People physically or economically impacted by the project	**S**	quantitative
	9 Heritage assessment	Implementation of adequate cultural heritage protection measures	**S**	process-based
	10 Public health and safety management plan	Implementation of a public health and safety management plan	**S**	process-based
Water	**11 Freshwater withdrawal**	Annual volume of fresh water used	**E**	quantitative

		by the infrastructure project		
Energy / GHG	**12 GHG emissions**	Volume of Greenhouse gas emissions emitted by the project	**E**	quantitative
	13 Efficient use of energy	Amount of energy consumed by the project	**E**	quantitative
Materials lifecycle approach	**14 Materials lifecycle thinking**	Consideration of materials lifecycle impacts	**E**	process-based
	15 Reduction of Waste	Percentage of total waste diverted from incineration and landfills	**E**	quantitative
Air Quality	**16 Fine particulate matter emission**	Mean $PM_{2.5}$ and PM_{10} emissions	**E**	quantitative
Biodiversity	**17 Threatened species**	Number of Aquatic and Terrestrial Species Impacted (Fauna and Flora)	**E**	quantitative
	18 Watershed Management	Existence of an Integrated Watershed Assessment and Management Program	**E**	process-based
	19 Previously Disturbed Land	Percentage of land used by the project that has been previously disturbed or maintained as non-disturbed	**E**	quantitative
Sustainable Supply chain	**20 Project supply chain sustainability management**	Existence of a sustainable procurement plan and compliance monitoring	**G**	process-based
Anti-corruption	**21 Anticorruption program**	Implementation of an anti-corruption program	**G**	process-based
Project Procurement	**22 Sustainability in project award**	Integration of the AISI in project tender process	**G**	process-based
Working Conditions	**23 Labor rights**	Integration of International Labour Organisation's (ILO) fundamental conventions	**S**	process-based
	24 Occupational Health & Safety (OH&S) Management Systems	Implementation of a Comprehensive OH&S Management System	**S**	process-based
	25 Frequency rates of fatal and non-fatal occupational injuries	Number of fatal and non-fatal occupational injuries	**S**	quantitative
	26 Fair Wages	Percentage of employees who are paid a fair wage	**S**	quantitative
	27 Local jobs created	Number of local jobs created	**S**	quantitative

Service Affordability	**28 User affordability**	Ability to pay (ATP) of project beneficiaries	**S**	quantitative

AISI's set of indicators are aligned with the SDGs and collectively contribute to all SDGs. This contribution is highlighted within the manual in each indicator's description under a dedicated section that connects to SDG goals and targets.

Table 5: AISI alignment to SDGs

AISI indicator	Related SDGs
indicator 1	SDG 6, SDG 9
indicator 2	None directly. Cross-cutting effect
indicator 3	SDG 5; cross-cutting indicator contributes to 12 of the 17 SDGs
indicator 4	SDG 9, SDG 11, SDG 13
indicator 5	SDG 9
indicator 6	SDG 16, SDG 17
indicator 7	SDG 1, SDG 10, SDG 16
indicator 8	SDG 1
indicator 9	SDG 11
indicator 10	SDG 3
indicator 11	SDG 6
indicator 12	SDG 9, SDG 13
Indicator 13	SDG 7
Indicator 14	SDG 11, SDG 12, SDG 13
Indicator 15	SDG 11, SDG 12, SDG 14
Indicator 16	SDG 3, SDG 7, SDG 11
Indicator 17	SDG 14, SDG 15
Indicator 18	SDG 3, SDG 4, SDG 6, SDG 14, SDG 15
Indicator 19	SDG 11, SDG 15
Indicator 20	SDG 8, SDG 12, SDG 17
Indicator 21	SDG 10, SDG 16
Indicator 22	SDG 9, SDG 11, SDG 12
Indicator 23	SDGs were developed using the UDHR as a starting point, so they are quite interconnected
Indicator 24	SDG 8
indicator 25	SDG 8
indicator 26	SDG 8, SDG 10
indicator 27	SDG 8
indicator 28	SDG 9

6.2. Analysis of WEF IBC

Reference document: "Measuring Stakeholder Capitalism towards Common Metrics and Consistent Reporting of Sustainable Value Creation" white paper published by the World Economic Forum in September 2020.[16]

Table 6: WEF IBC's Overview Table

WEF IBC OVERVIEW TABLE	
GENERAL SYSTEM DATA	
NAME OF ESG SYSTEM	WEF-IBC ESG Reporting Metrics and Disclosure Standards
SYSTEM DEVELOPER	World Economic Forum (WEF) and International Business Council (IBC)
DEVELOPMENT STATUS	Completed (released in September 2020)
AMENDMENT OF PRIOR VERSION OR NOT	NO PRIOR VERSION
BRIEF DESCRIPTION	"WEF's work is a core set of "Stakeholder Capitalism Metrics" (SCM) and disclosures that can be used by companies to align their mainstream reporting on performance against environmental, social and governance (ESG) indicators and track their contributions towards the SDGs on a consistent basis."
SYSTEM SCOPE	
TYPE OF ESG GUIDANCE	Standards
MANDATORY OR VOLUNTARY	Voluntary
TARGET AUDIENCE	Investors
GLOBAL OR REGIONAL	Global
ESG FOCUS	E, S and G (Environmental, Social and Governance)
CLIMATE-SPECIFIC	NO
PROJECT OR CORPORATE	BOTH but mainly CORPORATE (it can be applied in projects of the non financial sector)
INFRASTRUCTURE-SPECIFIC	
INFRASTRUCTURE-RELEVANT	YES

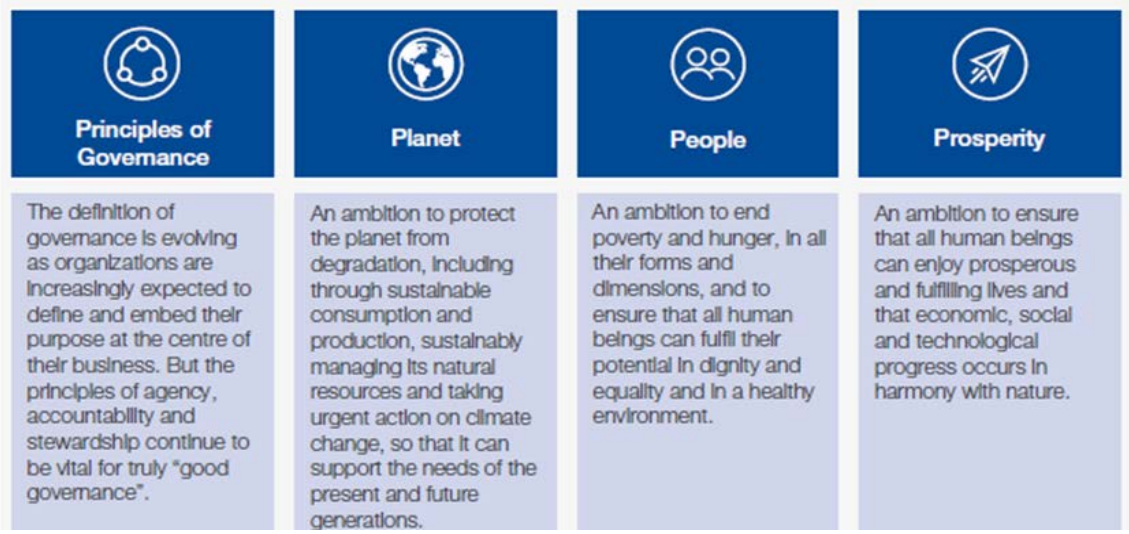
[16] The white paper was prepared in collaboration with Deloitte, EY, KPMG and PwC.

SYSTEM STRUCTURE			
NO. OF GUIDANCE DOCUMENTS	1		
MAIN STRUCTURE COMPONENTS	**4 PILLARS:** 1. Principles of Governance 2. Planet 3. People 4. Prosperity		
ECONOMY SECTORS-SPECIFIC	NO		
TARGET ECONOMY SECTORS/INDUSTRIES	-		
SUSTAINABILITY TOPICS (THEMES)	1. Governing purpose 2. Quality of governing body 3. Stakeholder engagement 4. Ethical behaviour 5. Risk and opportunity oversight 6. Climate change 7. Nature loss 8. Freshwater availability 9. Air pollution 10. Water pollution 11. Solid waste 12. Resource availability 13. Dignity and equality 14. Health and wellbeing 15. Skills for the future 16. Employment and wealth generation 17. Innovation of better products and services 18. Community and social vitality		
CATEGORIZATION OF TOPICS AS E, S, or/and G	**ENVIRONMENTAL** • Climate change • Nature loss • Freshwater availability • Air pollution • Water pollution • Solid waste • Resource availability	**SOCIAL** • Dignity and equality • Health and wellbeing • Skills for the future • Employment and wealth generation • Innovation of better products and services • Community and social vitality	**GOVERNANCE** • Governing purpose • Quality of governing body • Stakeholder engagement • Ethical behaviour • Risk and opportunity oversight
NUMBER OF INDICATORS (METRICS & DISCLOSURES)	TOTAL: 55 metrics and disclosures (21 core and 34 expanded metrics and disclosures)		

NUMBER OF INDICATORS PER ESG ASPECT	E: 16, S:27, G:12		
NUMBER OF INDICATORS PER SECTOR	Not Applicable		
NUMBER OF INFRASTRUCTURE-RELEVANT INDICATORS	55		
SYSTEM CONTENT			
INCLUSION OF BENCHMARKS	NO		
QUANTITATIVE VS. QUALITATIVE METRICS	29 quantitative indicators	18 qualitative indicators	8 indicators that include both types
CONNECTION TO PROJECT PHASES	NO		
CONNECTION/ REFERENCE TO OTHER ESG SYSTEMS	YES Indicators sources: CDP, CDSB, GRI, IIRC and SASB (more sources are mentioned which are not part of the mapping exercise)		
CONNECTION TO SDGs (DIRECT OR INDIRECT)	DIRECT (linked with each pillar) 1. Principles of Governance: SDG 12, 16, 17 2. Planet: SDG 6, 7, 12, 13, 14, 15 3. People: SDG 1,3,4, 5, 8, 10 4. Prosperity: SDG 1, 8, 9, 10		
CONNECTION TO TCFD FRAMEWORK	YES		

STRUCTURE:

- The 55 recommended metrics and disclosures are organized under four pillars that are aligned with the SDGs and principal ESG domains: Principles of Governance, Planet, People and Prosperity.
- The first three pillars are directly related to governance, environmental and social indicators respectively, whereas the 4th Pillar (Prosperity) highlights the importance of prosperous societies and the role of business in fuelling economic growth, innovation and shared wealth.



METRICS AND DISCLOSURES

- The metrics and disclosures are drawn wherever possible from existing standards and disclosures, with the aim of amplifying the rigorous work already done by standard setters.
- The WEF project has scanned several hundreds of ESG metrics and highlighted just 21 core metrics that are well-established, universal, industry-agnostic, which we believe to be material to create sustainable value.
- The remaining 34 metrics and disclosures are called "expanded." These tend to be less well-established in existing practice and standards and have a wider value chain scope or convey impact in a more sophisticated or tangible way, such as in monetary terms.

Table 7: WEF IBC's Main structural elements

WEF-IBC			
PILLARS	THEMES	METRICS & DISCLOSURES	
		CORE	EXPANDED
PRINCIPLE OF GOVERNANCE	Governing purpose	Y	Y
	Quality of governing body	Y	Y
	Stakeholder engagement	Y	Y
	Ethical behaviour	Y	Y
	Risk and opportunity oversight	Y	Y
PLANET	Climate change	Y	Y
	Nature loss	Y	Y
	Freshwater availability	Y	Y
	Air pollution		Y
	Water pollution		Y
	Solid waste		Y
	Resource availability		Y

PEOPLE	Dignity and equality	Y	Y
	Health and well-being	Y	Y
	Skills for the future	Y	Y
PROSPERITY	Employment and wealth generation	Y	Y
	Innovation of better products and services	Y	Y
	Community and social vitality	Y	Y

Table 8: WEF IBC's Structure and Content table highlighting ESG aspects and types of indicators

PILLARS	THEMES	METRICS & DISCLOSURES	ESG	type of indicator
PRINCIPLE OF GOVERNANCE	**Governing purpose**	Setting purpose	G	process-based
		Purpose-led management	G	process-based
	Quality of governing body	Governance body composition	G	process-based
		Progress against strategic milestones	G	process-based
		Remuneration	G	process-based
	Stakeholder engagement	Material issues impacting stakeholders	G	process-based
	Ethical behaviour	Anti-corruption	G	both
		Protected ethics advice and reporting mechanisms	G	process-based
		Alignment of strategy and policies to lobbying	G	process-based
		Monetary losses from unethical behaviour	G	quantitative
	Risk and opportunity oversight	Integrating risk and opportunity into business process	G	process-based
		Economic, environmental and social topics in capital allocation framework	G	process-based
PLANET	**Climate change**	Greenhouse gas (GHG) emissions	E	quantitative
		TCFD Implementation	E	process-based
		Paris-aligned GHG emissions targets	E	process-based
		Impact of GHG emissions	E	process-based
	Nature loss	Land use and ecological sensitivity	E	process-based
		Land use and ecological sensitivity	E	quantitative
		Impact of land use and conversion	E	quantitative
	Freshwater availability	Water consumption and withdrawal in water-stressed areas	E	quantitative
		Impact of freshwater consumption and withdrawal	E	process-based
	Air pollution	Air pollution	E	quantitative
		Impact of air pollution	E	quantitative
	Water pollution	Nutrients	E	quantitative
		Impact of water pollution	E	quantitative
	Solid waste	Single-use plastics	E	both
		Impact of solid waste disposal	E	quantitative
	Resource availability	Resource circularity	E	both
PEOPLE	**Dignity and equality**	Diversity and inclusion (%)	S	quantitative
		Pay equality (%)	S	quantitative
		Wage level (%)	S	quantitative
		Risk for incidents of child, forced or compulsory	S	process-based

		labour		
		Pay gap (%, #)	S	quantitative
		Discrimination and harassment incidents (#) and the total amount of monetary losses ($)	S	quantitative
		Freedom of association and collective bargaining at risk (%)	S	both
		Human rights review, grievance impact & modern slavery (#, %)	S	quantitative
		Living wage (%)	S	quantitative
	Health and well-being	Health and safety (%)	S	both
		Monetized impacts of work-related incidents on organization (#, $)	S	quantitative
		Employee well-being (#, %)	S	quantitative
	Skills for the future	Training provided (#, $)	S	quantitative
		Number of unfilled skilled positions (#, %)	S	quantitative
		Monetized impacts of training – Increased earning capacity as a result of training intervention (%, $)	S	quantitative
PROSPERITY	**Employment and wealth generation**	Absolute number and rate of employment	S	quantitative
		Economic contribution	S	both
		Financial investment contribution	S	both
		Infrastructure investments and services supported	S	process-based
		Significant indirect economic impacts	S	process-based
	Innovation of better products and services	Total R&D expenses ($)	S	quantitative
		Social value generated (%)	S	quantitative
		Vitality Index	S	both
	Community and social vitality	Total tax paid	S	quantitative
		Total Social Investment ($)	S	quantitative
		Additional tax remitted	S	quantitative
		Total tax paid by country for significant locations	S	quantitative

Table 9: WEF- IBC's alignment to SDGs

PILLARS	THEMES	RELATED SDG's																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	PER PILLAR
PRINCIPLE OF GOVERNANCE	Governing purpose		SDG 2 is not included in WEF									SDG 11 is not included in WEF	12					17	12, 16, 17
	Quality of governing body																16		
	Stakeholder engagement																	17	
	Ethical behaviour																16		
	Risk and opportunity oversight												12					17	
PLANET	Climate change							7					12	13					6, 7, 12, 13, 14, 15
	Nature loss												12			15			
	Freshwater availability						6												
	Air pollution													13					
	Water pollution						6								14				
	Solid waste												12	13					
	Resource availability							7					12						
PEOPLE	Dignity and equality	1				5			8		10								1,3,4, 5, 8,

	Health and well-being			3															10
	Skills for the future				4														
PROSPERITY	Employment and wealth generation	1							8										1, 8, 9, 10
	Innovation of better products and services									9									
	Community and social vitality										10								

6.3. Analysis of 5ISS or 'Group of Five' joint effort

6.3.1. Under-development sustainability-related financial reporting framework & standard

5ISS or the 'group of five' initiative, is the joint effort of five well-established standard-setters, CDSB, CDP, IIRS, GRI and SASB, as a response to the growing calls from capital market participants, regulators and other stakeholders for a globally accepted comprehensive corporate reporting system, *through their specific and complementary expertise*. The initiative has stated its intention to develop a Sustainability-related Financial Disclosure Framework and Standard. In December 2020, it presented its progress of developing a prototype climate-related financial disclosure standard. However, as highlighted in the presentation paper, "the prototype is not a standard. The technical content has not been through any due process of the authors' organization; and is provided for illustrative purposes only." Information prepared according to the Prototype Standard aims to be presented to complement financial reports, including financial statements, management commentary and other financial information.

Part of the work carried out by the 5ISS[17] shows how the current systems and standards can be used together.[18] More specifically, how certain components of the current frameworks and standards, along with the recommendations set out by the Task Force on Climate-related Financial Disclosures (TCFD) can provide a starting point for the development of global standards for sustainability-related financial disclosure.[19] All of TCFD's 11 final recommendations have been included, but the scope has been widened from climate-related risks and opportunities to sustainability-related financial risks and opportunities.

According to 5ISS, the four pillars of the TCFD provide a useful structure for organizing the presentation of climate and other sustainability-related financial information. The four pillars of the TCFD: Governance, Strategy, Risk Management, and Metrics & Targets represent core elements of how organizations operate.

[17] The work is facilitated by the Impact Management Project, World Economic Forum and Deloitte. *The five collaborating organizations form part of the IMP Structured Network*. https://impactmanagementproject.com/impact-management/structured-network/

[18] The five frameworks and standards have a long history of collaboration, such as the Corporate Reporting Dialogue and its Better Alignment Project. Other collaborations are presented in a Timeline in the Appendix A.

[19] Sustainability-related financial disclosure standards would enable disclosure of how sustainability matters create or erode enterprise value. This type of reporting is distinct from sustainability reporting, which is designed to illuminate a company's most significant impacts on the environment, people and economy. We believe that sustainability reporting and sustainability-related financial disclosure must be seen as interrelated reporting concepts, with shared methodologies wherever appropriate, regardless of their distinct aims.

A systems mapping of the five systems involved in the 5ISS joint effort against the TCFD framework had been performed as part of the Corporate Reporting Dialogue's Better Alignment Project for CDSB, CDP, <IR>, GRI and SASB. This mapping demonstrated a shared approach to reporting and alignment of content between the TCFD and CDSB. While CDSB adopts a broader environmental focus that reflects the intrinsic interconnection between climate and other environmental matters, both organizations have sought to ensure the disclosure of material climate-related information through reporting on enterprise value in a way that complements existing disclosure practices.

The five systems have different and complementary perspectives to materiality. By working together they intend to eliminate duplication and ambiguity between frameworks and disclosures of sustainability information that is material for creating enterprise value and those focused on significant impacts on sustainable development.

Moreover, the five systems collaboration is based on the understanding that frameworks and standards are complementary tools and each has its critical function: "frameworks generally provide principles-based guidance on how information is structured, how it is prepared, and what broad topics are covered. Meanwhile, standards provide specific, detailed, and replicable requirements for what should be reported for each topic, including metrics." In short, standards make frameworks actionable.[20] This is reaffirmed by TCFD's own reference to the majority of the group of five systems as part of its supplementary implementation guidance. More specifically, TCFD presents how its recommended disclosures are covered by CDP, GRI and CDSB and provides example metrics for non-financial sectors based on the CDP, GRI and SASB metrics.

The 5ISS is still under development. However, its approach to be built upon the existing work of its participants, directed the present analysis to further focus on the standards of the five systems, GRI, and SASB, presented in the following sections. This focus does not aim to provide a 'preview' of the 5ISS sustainability-related financial disclosure standard, but rather gives an opportunity for a meaningful mapping exercise, given that standards are more comparable to AISI. Moreover, GRI and SASB are two sets of widely used non-financial reporting standards, often used together by companies. The GRI Standards focus on the economic, environmental, and social impacts of the activities of a company, and hence its contributions— positive or negative—towards sustainable development. The GRI standards are intended to be used by all stakeholders, including customers, employees, civil society, governments, and investors. Meanwhile, the industry-specific SASB standards identify the sustainability-related risks and opportunities most likely to affect a company's financial condition (i.e., its balance sheet), operating performance (i.e., its income statement), or risk profile (i.e., its market valuation and cost of capital) in the near, medium, or long term. The SASB standards are designed to meet the unique information needs of

[20] Response of the Sustainability Accounting Standards Board to the Public Consultation on the Revision of the Non-Financial Reporting Directive.

providers of financial capital, such as investors, lenders, and underwriters.[21] Moreover, SASB is industry-specific, while GRI is not.

6.3.2. Analysis of GRI Standards

Reference documents:

- GSSB. (11 June 2020). GRI Universal Standards: GRI 101, GRI 102, and GRI 103 – Exposure draft
- GRI 200, 300 & 400 Series (various dates).

The Exposure draft, though in consultation, was used instead of the previous documents: GRI 101. Foundation, GRI 102. General Disclosures and 103. Management Approach. The Exposure draft provides a complete version of the GRI universal standards that better reflects their future final form with significantly simplified reporting requirements (34 disclosures instead of the previous 56).

Table 10: GRI Overview Table

GRI OVERVIEW TABLE	
GENERAL SYSTEM DATA	
NAME OF ESG SYSTEM	GRI Standards
SYSTEM DEVELOPER	Global Reporting Initiative (GRI)
DEVELOPMENT STATUS	Developed in various dates (The Universal Standards are currently under revision to address the recommendations from 25 the GRI Technical Committee on Human Rights Disclosure (a stakeholder group on labor-related disclosures) to align with recent developments in the area of responsible business conduct and due diligence, related to the work of key authoritative intergovernmental instruments in the area of human rights. Following the release of the revised GRI Universal Standards in the second half of 2021, the GRI human rights-specific Topic Standards will be revised and new standards may be developed if not yet covered
AMENDMENT OF PRIOR VERSION OR NOT	Yes
BRIEF DESCRIPTION	GRI standards are the most widely adopted global standards for sustainability reporting. Sustainability reporting, as promoted by the GRI Standards, is an organization's practice of reporting publicly on its contributions – positive or negative – towards sustainable development. The Standards are designed to enhance the global comparability and quality of information on these impacts, thereby enabling greater organizational transparency and accountability. The GRI Standards are structured as a set of interrelated, modular standards, three universal Standards that apply to every organization preparing a sustainability report, and an organization further selects from the set of topic-specific standards for reporting on its material topics. These standards are organized into three series – economic, environmental and social.

[21] Response of the Sustainability Accounting Standards Board to the Public Consultation on the Revision of the Non-Financial Reporting Directive

SYSTEM SCOPE	
TYPE OF ESG GUIDANCE	Standards
MANDATORY OR VOLUNTARY	Voluntary
TARGET AUDIENCE	All stakeholders, including customers, employees, civil society, governments, and investors
GLOBAL OR REGIONAL	Global
ESG FOCUS	E,S and G
CLIMATE-SPECIFIC	No
PROJECT OR CORPORATE	Both
INFRASTRUCTURE-SPECIFIC	No
INFRASTRUCTURE-RELEVANT	Yes
SYSTEM STRUCTURE	
NO. OF GUIDANCE DOCUMENTS	37
MAIN STRUCTURE COMPONENTS	**3 Universal standards:** - GRI 101 Foundation - GRI 102 General disclosures - GRI 103 Management Approach **& 34 Topic- specific standards:** - GRI 200 series (Economic topics) - GRI 300 series (Environmental topics) - GRI 400 series (Social topics)
ECONOMY SECTORS-SPECIFIC	The G4 Sector Disclosures were GRI's previous sector-specific reporting guidance, developed to be used together with the GRI G4 Guidelines. The G4 Guidelines have been superseded by the GRI Standards. The G4 Sector Disclosures were not updated when transitioning to the GRI Standards. Instead, as part of its Sector Program GRI is developing Sector Standards that will provide more up-to-date, authoritative guidance for sector-specific sustainability reporting. GRI has initiated a new GRI Sector Program, still under development. Sector standards for the oil, gas, and coal sectors have been prioritized because of their widely documented impacts across the economic, environmental and social dimensions and are the first pilot project under the new GRI Sector Program, initiated in March 2019.
TARGET ECONOMY SECTORS/INDUSTRIES	Oil, gas and coal (first priority sectors)
SUSTAINABILITY TOPICS	**Universal topics:** REP- Organizational details and reporting practices ACT- Organizational activities GOV- Governance RBC- Responsible business conduct SE- Stakeholder engagement MT- Reporting on material topics **Specific topics:**

	GRI 201 Economic performance GRI 202 Market presence GRI 203 Indirect economic impacts GRI 204 Procurement practices GRI 205-Anti-corruption GRI 206 Anti-competitive behavior GRI 207 Tax GRI 301 Materials GRI 302 Energy GRI 303 Water and effluents GRI 304 Biodiversity GRI 305 Emissions GRI 306 Waste GRI 307 Environmental compliance GRI 308 Supplier environmental assessment GRI 401 Employment GRI 402 Labor management relations GRI 403 Occupational health and safety GRI 404 Training and education GRI 405 Diversity and equal opportunity GRI 406 Non-discrimination GRI 407 Freedom of- association and collective bargaining GRI 408 Child labor GRI 409 Forced or compulsory labor GRI 410 Security practices GRI 411 Rights of indigenous people GRI 412 Human rights assessment GRI 413 Local communities GRI 414 Supplier social assessment GRI 415 Public policy GRI 416 Customer health and safety GRI 417 Marketing and labelling GRI 418 Customer privacy GRI 419 Socioeconomic compliance		
CATEGORIZATION	**ENVIRONMENTAL**	**SOCIAL**	**GOVERNANCE**

OF TOPICS AS E, S, or/and G	● Materials ● Energy ● Water and effluents ● Biodiversity ● Emissions ● Waste ● Environmental compliance ● Supplier environmental assessment	● Employment ● Labor management relations ● Occupational health and safety ● Training and education ● Diversity and equal opportunity ● Non-discrimination ● Freedom of- association and collective bargaining ● Child labor ● Forced or compulsory labor ● Security practices ● Rights of indigenous people ● Human rights assessment ● Local communities ● Supplier social assessment ● Public policy ● Customer health and safety ● Marketing and labelling ● Customer privacy ● Socioeconomic compliance	**as part of Topic-specific Standards** ● Economic performance ● Market presence ● Indirect economic impacts ● Procurement practices ● Anti-corruption ● Anti-competitive behavior **as part of Universal Standards** ● Organizational details and reporting practices ● Organizational activities ● Governance ● Responsible business conduct ● Stakeholder engagement ● Reporting on material topics
NUMBER OF INDICATORS	89 topic-specific disclosures 31 organization-related disclosures 3 material topic-related disclosures **Total 123 disclosures**		
NUMBER OF INDICATORS PER ESG ASPECT	**E: 32 reporting requirements**	**S: 40 reporting requirements**	**G:** 17 topic-specific 31 universal (organization-level) & 3 universal (material topic-related) **Total 51 reporting requirements**
	(out of the total 123 disclosures)		
NUMBER OF INDICATORS PER SECTOR	The exposure draft of Sector Standard: Oil and Gas sectors was presented for public consultation during the period July 8 to October 6, 2020. The draft identified 22 likely material topics for organizations with oil and gas activities – covering climate change, the environment, health and safety, employment, communities, and governance. **(These disclosures were not part of the current analysis)**		
NUMBER OF INFRASTRUCTURE-RELEVANT INDICATORS	83 topic-specific disclosures (6 of the 89 topic-specific disclosures are not accounted as part of the analysis for being not relevant to project level analysis) 21 organization-related disclosures (10 of the 31 organization-level disclosures are not accounted as part of the analysis for being not relevant to project level analysis) 3 material topic-related disclosures **Total 107 disclosures as infrastructure-project relevant**		
SYSTEM CONTENT			
INCLUSION OF BENCHMARKS	No		
INCLUSION OF METRICS	Yes (Reporting requirements)		

QUANTITATIVE VS. QUALITATIVE METRICS	**50 quantitative Reporting requirements**	**39 qualitative Reporting requirements**	**18 Reporting requirements with both quantitative and qualitative metrics**
	(considering only 107 infrastructure project relevant disclosures included in the detailed mapping exercise)		
CONNECTION TO PROJECT PHASES	No		
CONNECTION/REFERENCE TO OTHER ESG SYSTEMS	Yes		
	(If yes which ESG systems)		
CONNECTION TO SDGs (DIRECT OR INDIRECT)	Yes direct, on a disclosure and reporting requirement level, however presented in a separate document and not as part of the main guidance manuals		
CONNECTION TO TCFD FRAMEWORK	No		

107 of the total 123 disclosures of GRI are considered for the mapping as infrastructure project-relevant. Some of the required universal disclosures were not included in the mapping, as they refer to organizational details, and company organizational structure, not related to the project level scope of AISI.

Table 11: GRI Structure Table

GRI UNIVERSAL STANDARDS[22]		
series	**UNIVERSAL TOPICS**	**DISCLOSURES**
102	**Organizational details and reporting practices**	REP-5 External assurance
102	**Organizational activities**	ACT-1 Activities, value chain, and other business relationships
		ACT-2 Employees and other workers
102	Governance	GOV-1 Governance structure and composition
		GOV-2 Nomination and selection of the highest governance body
		GOV-3 Responsibilities for sustainable development topics and delegation
		GOV-4 Stakeholder consultation on sustainable development topics
		GOV-6 Conflicts of interest
		GOV-7 Role of the highest governance body in setting purpose, values, and strategy
		GOV-10 Identification and management of impacts
		GOV-13 Remuneration policies
		GOV-14 Process for determining remuneration
		GOV-15 Annual total compensation ratio
102	**Responsible business conduct**	RBC-1 Statement on sustainable development strategy
		RBC-2 Policy commitments
		RBC-3 Embedding the policy commitments throughout the organization

[22] Based on GRI Universal Standards: GRI 101, GRI 102, and GRI 103 – Exposure draft & Selection of infrastructure project relevant disclosures

		RBC-4 Grievance mechanisms and other remediation processes
		RBC-5 Mechanisms for seeking advice and raising concerns
		RBC-6 Compliance with laws and regulations
102	**Stakeholder engagement**	SE-1 Approach to stakeholder engagement
		SE-2 Collective bargaining agreements
103	**Reporting on material topics**	MT-1 Identification of material topics and related impacts
		MT-2 Material topics and related impacts
		MT-3 Management of material topics and related impacts
GRI TOPIC SPECIFIC STANDARDS		
series	**SPECIFIC TOPICS**	**DISCLOSURES**
201	**Economic Performance**	201-1 Direct economic value generated and distributed
		201-2 Financial implications and other risks and opportunities due to climate change
202	**Market Presence**	202-1 Ratios of standard entry level wage by gender compared to local minimum wage
		202-2 Proportion of senior management hired from the local community
203	**Indirect Economic Impacts**	203-1 Infrastructure investments and services supported
		203-2 Significant indirect economic impacts
204	**Procurement Practices**	204-1 Proportion of spending on local suppliers
205	**Anti-corruption**	205-1 Operations assessed for risks related to corruption
		205-2 Communication and training about anti-corruption policies and procedures
		205-3 Confirmed incidents of corruption and actions taken
206	**Anti-competitive Behavior**	206-1 Legal actions for anti-competitive behavior, antitrust, and monopoly practices
207	**Tax**	207-3 Stakeholder engagement and management of concerns related to tax
301	**Materials**	301-1 Materials used by weight or volume
		301-2 Recycled input materials used
		301-3 Reclaimed products and their packaging materials
302	**Energy**	302-1 Energy consumption within the organization
		302-2 Energy consumption outside of the organization
		302-3 Energy intensity
		302-4 Reduction of energy consumption
		302-5 Reduction in energy requirements of products and services
303	**Water and Effluents**	303-1 Interactions with water as a shared resource
		303-2 Management of water discharge-related impacts
		303-3 Water withdrawal
		303-4Water discharge
		303-5Water consumption
304	**Biodiversity**	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas
		304-2 Significant impacts of activities, products, and services on biodiversity
		304-3 Habitats protected or restored
		304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations
305	**Emissions**	305-1 Direct (Scope 1) GHG emissions

		305-2 Energy indirect (Scope 2) GHG emissions
		305-3 Other indirect (Scope 3) GHG emissions
		305-4 GHG emissions intensity
		305-5 Reduction of GHG emissions
		305-6 Emissions of ozone-depleting substances (ODS)
		305-7 Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions
306	**Waste**	306-1 Waste generation and significant waste-related impacts
		306-2 Management of significant waste-related impacts
		306-3 Waste generated
		306-4 Waste diverted from disposal
		306-5 Waste directed to disposal
307	**Environmental Compliance**	307-1 Non-compliance with environmental laws and regulations
308	**Supplier Environmental Assessment**	308-1 New suppliers that were screened using environmental criteria
		308-2 Negative environmental impacts in the supply chain and actions taken
401	**Employment**	401-1 New employee hires and employee turnover
		401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees
		401-3 Parental leave
402	**Labor/Management Relations**	402-1 Minimum notice periods regarding operational changes
403	**Occupational Health and Safety**	403-1 Occupational health and safety management system
		403-2 Hazard identification, risk assessment, and incident investigation
		403-3 Occupational health services
		403-4 Worker participation, consultation, and communication on occupational health and safety
		403-5 Worker training on occupational health and safety
		403-6 Promotion of worker health
		403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships
		403-8 Workers covered by an occupational health and safety management system
		403-9 Work-related injuries
		403-10 Work-related ill health
404	**Training and Education**	404-1 Average hours of training per year per employee
		404-2 Programs for upgrading employee skills and transition assistance programs
		404-3 Percentage of employees receiving regular performance and career development reviews
405	**Diversity and Equal Opportunity**	405-1 Diversity of governance bodies and employees
		405-2 Ratio of basic salary and remuneration of women to men
406	**Non-discrimination**	406-1 Incidents of discrimination and corrective actions taken
407	**Freedom of Association and Collective Bargaining**	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk
408	**Child Labor**	408-1 Operations and suppliers at significant risk for incidents of child labor
409	**Forced or Compulsory Labor**	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor
410	**Security Practices**	410-1 Security personnel trained in human rights policies or procedures

411	**Rights of Indigenous Peoples**	411-1 Incidents of violations involving rights of indigenous peoples
412	**Human Rights Assessment**	412-1 Operations that have been subject to human rights reviews or impact assessments
		412-2 Employee training on human rights policies or procedures
		412-3 Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening
413	**Local Communities**	413-1 Operations with local community engagement, impact assessments, and development programs
		413-2 Operations with significant actual and potential negative impacts on local communities
414	**Supplier Social Assessment**	414-1 New suppliers that were screened using social criteria
		414-2 Negative social impacts in the supply chain and actions taken
416	**Customer Health and Safety**	416-1 Assessment of the health and safety impacts of product and service categories
		416-2 Incidents of non-compliance concerning the health and safety impacts of products and services
417	**Marketing and Labeling**	417-1 Requirements for product and service information and labeling
		417-2 Incidents of non-compliance concerning product and service information and labeling
		417-3 Incidents of non-compliance concerning marketing communications
418	**Customer Privacy**	418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data
419	**Socioeconomic Compliance**	419-1 Non-compliance with laws and regulations in the social and economic area

Table 12: GRI Structure and Content table highlighting ESG aspects and types of indicators

GRI UNIVERSAL STANDARDS			
series	**Universal topics**	**Disclosures**	**type**
102	**Organizational details and reporting practices**	REP-5 External assurance	qualitative
102	**Organizational activities**	ACT-1 Activities, value chain, and other business relationships	qualitative
		ACT-2 Employees and other workers	both
102	**Governance**	GOV-1 Governance structure and composition	both
		GOV-2 Nomination and selection of the highest governance body	qualitative
		GOV-3 Responsibilities for sustainable development topics and delegation	qualitative
		GOV-4 Stakeholder consultation on sustainable development topics	qualitative
		GOV-6 Conflicts of interest	qualitative
		GOV-7 Role of the highest governance body in setting purpose, values, and strategy	qualitative
		GOV-10 Identification and management of impacts	qualitative
		GOV-13 Remuneration policies	both
		GOV-14 Process for determining remuneration	qualitative
		GOV-15 Annual total compensation ratio	both

102	**Responsible business conduct**	RBC-1 Statement on sustainable development strategy	qualitative
		RBC-2 Policy commitments	qualitative
		RBC-3 Embedding the policy commitments throughout the organization	qualitative
		RBC-4 Grievance mechanisms and other remediation processes	qualitative
		RBC-5 Mechanisms for seeking advice and raising concerns	qualitative
		RBC-6 Compliance with laws and regulations	both
102	**Stakeholder engagement**	SE-1 Approach to stakeholder engagement	qualitative
		SE-2 Collective bargaining agreements	both
103	**Reporting on material topics**	MT-1 Identification of material topics and related impacts	qualitative
		MT-2 Material topics and related impacts	qualitative
		MT-3 Management of material topics and related impacts	qualitative
GRI TOPIC SPECIFIC STANDARDS			
series	**Specific Topics**	**Disclosures**	**type**
201	**Economic Performance**	201-1 Direct economic value generated and distributed	quantitative
		201-2 Financial implications and other risks and opportunities due to climate change	both
202	**Market Presence**	202-1 Ratios of standard entry level wage by gender compared to local minimum wage	both
		202-2 Proportion of senior management hired from the local community	quantitative
203	**Indirect Economic Impacts**	203-1 Infrastructure investments and services supported	qualitative
		203-2 Significant indirect economic impacts	qualitative
204	**Procurement Practices**	204-1 Proportion of spending on local suppliers	quantitative
205	**Anti-corruption**	205-1 Operations assessed for risks related to corruption	both
		205-2 Communication and training about anti-corruption policies and procedures	quantitative
		205-3 Confirmed incidents of corruption and actions taken	quantitative
206	**Anti-competitive Behavior**	206-1 Legal actions for anti-competitive behavior, antitrust, and monopoly practices	both
207	**Tax**	207-3 Stakeholder engagement and management of concerns related to tax	qualitative
301	**Materials**	301-1 Materials used by weight or volume	quantitative
		301-2 Recycled input materials used	quantitative
		301-3 Reclaimed products and their packaging materials	quantitative
302	**Energy**	302-1 Energy consumption within the organization	quantitative
		302-2 Energy consumption outside of the organization	quantitative
		302-3 Energy intensity	quantitative
		302-4 Reduction of energy consumption	quantitative
		302-5 Reduction in energy requirements of products and services	quantitative
303	**Water and Effluents**	303-1 Interactions with water as a shared resource	qualitative
		303-2 Management of water discharge-related impacts	qualitative
		303-3 Water withdrawal	quantitative
		303-4Water discharge	quantitative

		303-5Water consumption	quantitative
304	**Biodiversity**	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	both
		304-2 Significant impacts of activities, products, and services on biodiversity	both
		304-3 Habitats protected or restored	both
		304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations	quantitative
305	**Emissions**	305-1 Direct (Scope 1) GHG emissions	quantitative
		305-2 Energy indirect (Scope 2) GHG emissions	quantitative
		305-3 Other indirect (Scope 3) GHG emissions	quantitative
		305-4 GHG emissions intensity	quantitative
		305-5 Reduction of GHG emissions	quantitative
		305-6 Emissions of ozone-depleting substances (ODS)	quantitative
		305-7 Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	quantitative
306	**waste**	306-1 Waste generation and significant waste-related impacts	qualitative
		306-2 Management of significant waste-related impacts	qualitative
		306-3 Waste generated	quantitative
		306-4 Waste diverted from disposal	quantitative
		306-5 Waste directed to disposal	quantitative
307	**Environmental Compliance**	307-1 Non-compliance with environmental laws and regulations	quantitative
308	**Supplier Environmental Assessment**	308-1 New suppliers that were screened using environmental criteria	quantitative
		308-2 Negative environmental impacts in the supply chain and actions taken	quantitative
401	**Employment**	401-1 New employee hires and employee turnover	quantitative
		401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	qualitative
		401-3 Parental leave	quantitative
402	**Labor/Management Relations**	402-1 Minimum notice periods regarding operational changes	both
403	**Occupational Health and Safety**	403-1 Occupational health and safety management system	qualitative
		403-2 Hazard identification, risk assessment, and incident investigation	qualitative
		403-3 Occupational health services	qualitative
		403-4 Worker participation, consultation, and communication on occupational health and safety	qualitative
		403-5 Worker training on occupational health and safety	qualitative
		403-6 Promotion of worker health	qualitative
		403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	qualitative
		403-8 Workers covered by an occupational health and safety management system	quantitative
		403-9 Work-related injuries	both
		403-10 Work-related ill health	both

404	**Training and Education**	404-1 Average hours of training per year per employee	quantitative
		404-2 Programs for upgrading employee skills and transition assistance programs	qualitative
		404-3 Percentage of employees receiving regular performance and career development reviews	quantitative
405	**Diversity and Equal Opportunity**	405-1 Diversity of governance bodies and employees	quantitative
		405-2 Ratio of basic salary and remuneration of women to men	quantitative
406	**Non-discrimination**	406-1 Incidents of discrimination and corrective actions taken	both
407	**Freedom of Association and Collective Bargaining**	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	qualitative
408	**Child Labor**	408-1 Operations and suppliers at significant risk for incidents of child labor	qualitative
409	**Forced or Compulsory Labor**	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	qualitative
410	**Security Practices**	410-1 Security personnel trained in human rights policies or procedures	quantitative
411	**Rights of Indigenous Peoples**	411-1 Incidents of violations involving rights of indigenous peoples	both
412	**Human Rights Assessment**	412-1 Operations that have been subject to human rights reviews or impact assessments	quantitative
		412-2 Employee training on human rights policies or procedures	quantitative
		412-3 Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	quantitative
413	**Local Communities**	413-1 Operations with local community engagement, impact assessments, and development programs	quantitative
		413-2 Operations with significant actual and potential negative impacts on local communities	qualitative
414	**Supplier Social Assessment**	414-1 New suppliers that were screened using social criteria	quantitative
		414-2 Negative social impacts in the supply chain and actions taken	quantitative
416	**Customer Health and Safety**	416-1 Assessment of the health and safety impacts of product and service categories	quantitative
		416-2 Incidents of non-compliance concerning the health and safety impacts of products and services	quantitative
417	**Marketing and Labeling**	417-1 Requirements for product and service information and labeling	qualitative
		417-2 Incidents of non-compliance concerning product and service information and labeling	quantitative
		417-3 Incidents of non-compliance concerning marketing communications	quantitative
418	**Customer Privacy**	418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	quantitative
419	**Socioeconomic Compliance**	419-1 Non-compliance with laws and regulations in the social and economic area	quantitative

Table 13: GRI's Alignment to SDGs[23]

DISCLOSURES	RELATED SDGs																
102-REP-5																	
102-ACT-1																	
102-ACT-2								SDG 8		SDG 10							
102-GOV-1					SDG 5											SDG 16	
102-GOV-2					SDG 5											SDG 16	
102- GOV-3																SDG 16	
102- GOV-4																SDG 16	
102- GOV-7																SDG 16	
102- GOV-10																SDG 16	
102- RBC-1																	
102- RBC-2																	
102- RBC-3																	
102-RBC-5																SDG 16	
102-SE-1																	
102-SE-2								SDG 8									
102- MT-1																	
102-MT-2																	
102-MT-3																	
201								SDG 8	SDG 9				SDG 13				
202	SDG 1				SDG 5			SDG 8									
203	SDG 1		SDG 3		SDG 5			SDG 8	SDG 9		SDG 11						
204								SDG 8									
205																SDG 16	
206																SDG 16	
207	SDG 1									SDG 10							SDG 17
301								SDG 8				SDG 12					
302							SDG 7	SDG 8				SDG 12	SDG 13				
303						SDG 6											
304						SDG 6								SDG 14	SDG 15		
305			SDG 3									SDG 12	SDG 13	SDG 14	SDG 15		
306			SDG 3			SDG 6					SDG 11	SDG 12					
307																SDG 16	
308																	
401			SDG 3		SDG 5			SDG 8		SDG 10							
402								SDG 8									
403			SDG 3					SDG 8								SDG 16	
404				SDG 4	SDG 5			SDG 8		SDG 10							
405					SDG 5			SDG 8		SDG 10							
406					SDG 5			SDG 8									
407								SDG 8									
408								SDG 8								SDG 16	
409								SDG 8									
410																SDG 16	
411		SDG 2															
412																	
413		SDG 2															
414					SDG 5			SDG 8								SDG 16	

[23] GRI. (Last updated September 2020) Linking the SDGs and the GRI Standards

415															SDG 16	
416															SDG 16	
417												SDG 12			SDG 16	
418															SDG 16	
419															SDG 16	

6.3.3. Analysis of SASB Standards

Reference documents:

- SASB Materiality Map®[24]
- (Selected Industry-specific) Sustainability Accounting Standards[25]

SASB is an industry-specific standard, that aims to reflect each industry's own unique sustainability profile. The disclosure topics included in SASB's industry-specific standards are therefore a subset of sustainability issues, tailored to an industry's specific context. "SASB's standard-setting process surfaces the disclosure topics and metrics most likely to have material financial impacts on the typical company in a given industry. However, business models can differ significantly, even within an industry. For this reason, companies may find topics and metrics in other industry standards that are relevant to their business, especially in related industries."[26]

Therefore, SASB encourages users to review other industry standards as well, and make their own determinations about the sustainability risks and opportunities their company faces. Infrastructure specific disclosure topics and their associated accounting metrics were selected to provide a comparable base for mapping against AISI, apart from the cross-industry issue categories that SASB provides.

Table 14: SASB Overview Table

SASB OVERVIEW TABLE	
GENERAL SYSTEM DATA	
NAME OF ESG SYSTEM	SASB Accounting Standards
SYSTEM DEVELOPER	Sustainability Accounting Standards Board
DEVELOPMENT STATUS	Developed in 2018. Currently, the SASB conceptual framework is under revision.
AMENDMENT OF PRIOR VERSION OR NOT	No

[24] https://materiality.sasb.org/
[25] https://www.sasb.org/standards/download/
[26] Sustainability Accounting Standards Board. (November 2020) SASB Human Capital Bulletin.

BRIEF DESCRIPTION	SASB has adopted an industry-specific approach to financial materiality. SASB explains: 'When evaluating the financial materiality of environmental and social issues, industry-specificity is critical, because such issues often manifest in unique ways in the context of specific business models. Thus, the decisions of companies and investors are shaped in large part by their assessments of sector-specific value-drivers, risks, and opportunities.'
SYSTEM SCOPE	
TYPE OF ESG GUIDANCE	Combined Framework & Standard
MANDATORY OR VOLUNTARY	Voluntary
TARGET AUDIENCE	Providers of financial capital, such as investors, lenders, and underwriters
GLOBAL OR REGIONAL	Regional(US)
ESG FOCUS	E, S and G
CLIMATE-SPECIFIC	No
PROJECT OR CORPORATE	Both (mainly corporate)
INFRASTRUCTURE -SPECIFIC	No
INFRASTRUCTURE -RELEVANT	Yes
SYSTEM STRUCTURE	
NO. OF GUIDANCE DOCUMENTS	An on-line interactive tool, the 'SASB Materiality map', that identifies and compares disclosure topics across different industries and sectors. 77 industry-specific disclosure standards with guidance on the accounting metrics
MAIN STRUCTURE COMPONENTS	SASB's structure is based on the sectors and industries it addresses. SASB includes 77 industry-specific standards that provide 444 disclosure topics categorized in 5 sustainability dimensions: 1. Environment 2. Social capital 3. Human capital 4. Business model & Innovation 5. Leadership and Governance Sustainability dimensions group General issue categories (cross-industry financially material issues)--> -->accounting metrics per issue category (however industry –specific)
ECONOMY SECTORS-SPECIFIC	YES
TARGET	11 Sectors and 77 industries:

ECONOMY SECTORS/INDUSTRIES	1. Consumer goods (7 industries) 2. Extractives & Minerals Processing (8 industries) 3. Financials (7 industries) 4. Food & Beverage (8 industries) 5. Healthcare (6 industries) 6. Infrastructure (8 industries) 7. Renewable Resources & Alternative Energy (6 industries) 8. Resource Transformation (5 industries) 9. Services (7 industries) 10. Technology & Communications (6 industries) 11. Transportation (9 industries) SASB's Sustainable Industry Classification System® (SICS®) uses an impact-focused methodology categorizing companies under a sustainability lens. SICS builds on and complements traditional classification systems by grouping companies into sectors and industries in accordance with a fundamental view of their business model, their resource intensity and sustainability impacts, and their sustainability innovation potential.		
SUSTAINABILITY TOPICS	(26 General issue categories) 1.GHG Emissions 2.Air Quality 3.Energy Management 4.Water & Wastewater Management 5.Waste & Hazardous Materials Management 6. Ecological Impacts 7.Human Rights & Community Relations 8.Customer Privacy 9.Data Security 10.Access & Affordability 11.Product Quality & Safety 12.Customer Welfare 13. Selling Practices & Product Labelling 14. Labor Practices 15. Employee Health & Safety 16. Employee Engagement, Diversity & Inclusion 17.Product Design & Lifecycle Management 18. Business Model Resilience 19. Supply Chain Management 20. Materials Sourcing & Efficiency 21. Physical Impacts of Climate Change 22. Business Ethics 23. Competitive Behavior 24. Management of the Legal & Regulatory Environment 25. Critical Incident Risk Management 26. Systemic Risk Management		
CATEGORIZATION	**ENVIRONMENTAL**	**SOCIAL**	**GOVERNANCE**

OF TOPICS AS E, S, or/and G	GHG Emissions Air Quality Energy Management Water & Wastewater Management Waste & Hazardous Materials Management Ecological Impacts	Human Rights & Community Relations Customer Privacy Data Security Access & Affordability Product Quality & Safety Customer Welfare Selling Practices & Product Labelling Labor Practices Employee Health & Safety Employee Engagement, Diversity & Inclusion	Product Design & Lifecycle Management Business Model Resilience Supply Chain Management Materials Sourcing & Efficiency Physical Impacts of Climate Change Business Ethics Competitive Behavior Management of the Legal & Regulatory Environment Critical Incident Risk Management Systemic Risk Management
NUMBER OF INDICATORS / NUMBER OF INDICATORS PER INDUSTRY	77 industry-specific disclosure standards include 444 industry-specific disclosure topics Given that Disclosure topics are classified per industry, in the case of SASB the total no.of disclosures does not constitute a representative characteristic. Moreover, the no. of disclosure topics varies per industry, based on the materiality of topics for each industry, therefore an average of disclosure topics can only be provided. **Avg. no of. disclosure topics= 6 per industry.**		
NUMBER OF INDICATORS PER ESG ASPECT	**E:** 6 general issue categories 16 disclosure topics	**S:** 10 general issue categories 12 disclosure topics	**G:** 10 general issue categories 29 disclosure topics
NUMBER OF INFRASTRUCTURE -RELEVANT INDICATORS	57		
SYSTEM CONTENT			
INCLUSION OF BENCHMARKS	No		
INCLUSION OF METRICS	Yes, industry-specific accounting metrics		
QUANTITATIVE VS. QUALITATIVE METRICS	(Number of quantitative indicators)		(Number of qualitative indicators)
CONNECTION TO PROJECT PHASES	No		
CONNECTION/REFERENCE TO OTHER ESG SYSTEMS	No		
CONNECTION TO SDGs (DIRECT OR INDIRECT)	Direct (however in a separate document)		

CONNECTION TO TCFD FRAMEWORK	No

The SASB Standards structure is best illustrated in the figure below.

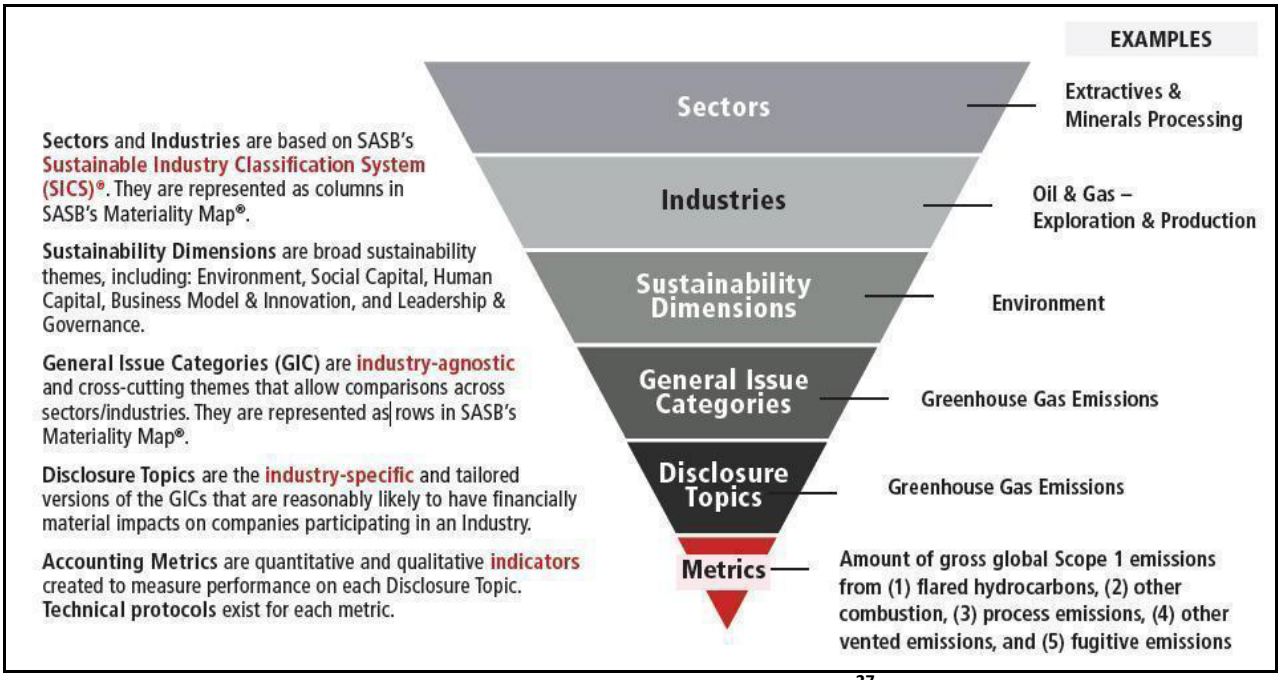


Fig. 1: Structure of SASB Standards[27]

Table 15: SASB Structure Table

DIMENSION	GENERAL ISSUE CATEGORY	DISCLOSURE TOPICS
ENVIRONMENT	**GHG Emissions**	Greenhouse emissions
		Emissions Reduction Services & Fuels management
		Greenhouse Gas Emissions & Energy Resource Planning
		Fleet fuel management
	Air Quality	Air quality
	Energy Management	Energy management
	Water & Wastewater Management	Water Management
		Distribution Network Efficiency
		Effluent Quality Management
	Waste & Hazardous Materials Management	Waste Management
		Coal ash management

[27] Sustainability Accounting Standards Board. (September 2020) SASB Implementation Supplement: Greenhouse Gas Emissions and SASB Standards.

		Management of Leachate & Hazardous Waste
		Hazardous Waste Management
	Ecological Impacts	Environmental impacts of project development
		Biodiversity impacts
		Land use & Ecological impacts
SOCIAL CAPITAL	**Human Rights & Community Relations**	Rights of Indigenous people
		Security, Human rights & Rights of indigenous people
		Community relations
	Customer Privacy	Data Privacy
	Data Security	Data Security
	Access & Affordability	(Energy/ water/ gas) affordability
	Product Quality & Safety	Structural Integrity & Safety
		Drinking Water Quality
HUMAN CAPITAL	**Labor Practices**	Labor Practices
	Employee Health & Safety	Workforce Health & Safety
	Employee Engagement, Diversity & Inclusion	Workforce Diversity & Engagement/ Employee recruitment, Inclusion & Performance
		Employee recruitment, Development & Retention
Business model & Innovation	**Product Design & Lifecycle Management**	Product End-of- life Management
		Product Innovation
		Lifecycle Impacts of Buildings & Infrastructure
		Climate impacts of business mix
		Management of Energy Infrastructure Integration & Related Regulations
		Fuel Economy & Use-phase Emissions
		RR-WT Ecological Impacts of Project Development
	Business Model Resilience	End-Use Efficiency & Demand
		Recycling & Resource Recovery
	Supply Chain Management	Supply Chain Management
		Environmental & Social Impacts of supply chain
	Materials Sourcing & Efficiency	Water Supply Resilience
		Materials Sourcing
		Product end of life management
		RR-WT Materials Efficiency

	Physical Impacts of Climate Change	Network Resiliency & Impacts of Climate Change
		Climate Change Adaptation
LEADERSHIP & GOVERNANCE	**Business Ethics**	Business ethics
		Business ethics & Payments Transparency
		Professional Integrity
	Competitive Behavior	Competitive Behavior
		Pricing Integrity & Transparency
	Management of the Legal & Regulatory Environment	Management of the Legal & Regulatory Environment
	Critical Incident Risk Management	Critical Incident Risk Management
		Nuclear safety & Emergency management
		Integrity of Gas Delivery Infrastructure
		Accident & Safety Management
	Systemic Risk Management	Grid Resiliency
		Managing Systemic Risks from Technology Interruptions

It is worth noting that the above table is result of two processes:

1. A selection of the industry-specific disclosure topics that appear for each cross-industry General Issue category. The disclosure topics selected are identified as infrastructure- relevant.
2. Two General issue categories were excluded from the table:

- The 'Customer Welfare' category and
- The 'Selling Practices & Product Labelling' category

Based on the categories definition[28] and the specific disclosure topics they include, the two categories are targeted to the 'Food & Beverage', 'Healthcare', and 'Services' sector that are not relevant to infrastructure.

Table 16: SASB Structure and Content table highlighting ESG aspects and types of indicators

[28] The 'Customer Welfare' category addresses welfare concerns over issues including, but is not limited to, health and nutrition of foods and beverages, antibiotic use in animal production, and management of controlled substances. The category addresses the company's ability to provide consumers with manufactured products and services that are aligned with societal expectations. It does not include issues directly related to quality and safety malfunctions of manufactured products and services, but instead addresses qualities inherent to the design and delivery of products and services where customer welfare may be in question. The scope also captures companies' ability to prevent counterfeit products.
The 'Selling Practices & Product Labelling' category addresses social issues that may arise from a failure to manage the transparency, accuracy and comprehensibility of marketing statements, advertising, and labeling of products and services. It includes, but is not limited to, advertising standards and regulations, ethical and responsible marketing practices, misleading or deceptive labeling, as well as discriminatory or predatory selling and lending practices. This may include deceptive or aggressive selling practices in which incentive structures for employees could encourage the sale of products or services that are not in the best interest of customers or clients.

DIMENSION	GENERAL ISSUE CATEGORY	DISCLOSURE TOPICS	ACCOUNTING METRICS	TYPE
ENVIRONMENT	GHG Emissions	Greenhouse emissions	Gross global Scope 1 emissions and percentage of Scope 1 emissions emitted in areas that are subject to emissions-limiting or emissions-reporting regulation	Quantitative
			Percentage of of Scope 1 emissions associated with the emission of a specific (per industry) substance	Quantitative
			Discussion of long-term and short-term strategy or plan to manage Scope 1 and lifecycle emissions, emissions reduction targets, and an analysis of performance against those targets	Discussion and Analysis
			(1) Total landfill gas generated (2) percentage flared (3) percentage used for energy	Quantitative
		Emissions Reduction Services & Fuels management	Total fuel consumed; percentage renewable; percentage used in: (1) on-road equipment and vehicles (2) off-road equipment	Quantitative
			Discussion of strategies or plans to address air-emissions related risks, opportunities and impacts	Discussion and Analysis
			Percentage of engines in service that meet Tier 4 compliance for non-road diesel engine emissions	Quantitative
		Greenhouse Gas Emissions & Energy Resource Planning	(1) Number of customers served in markets to renewable portfolio standards (RPS) and (2) percentage fulfillment of RPS target by market	Quantitative
		Fleet fuel management	Fleet fuel consumed (2) percentage natural gas, (3) percentage renewable	Quantitative
			Percentage of alternative fuel vehicles in fleet	Quantitative
	Air Quality	Air quality	Air emissions of the following pollutants: (1) NOx (excluding N2O), (2) SOx, (3) particulate matter (PM10),volatile organic compounds (VOCs), and (4) hazardous air pollutants (HAPs); percentage of each in or near areas of dense population	Quantitative
			Number of facilities in or near areas of dense population	Quantitative
			Number of incidents of non-compliance associated with air emissions	Quantitative
	Energy Management	Energy management	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable	Quantitative
			(1) Total energy consumed by portfolio area with data coverage, (2) percentage grid electricity, and (3) percentage renewable, by property subsector	Quantitative
			Like-for-like percentage change in energy consumption for the portfolio area with data coverage, by property subsector	Quantitative
			Percentage of eligible portfolio that (1) has an energy rating and (2) is certified to ENERGY STAR, by property subsector	Quantitative
	Water & Wastewater Management	Water Management	(1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	Quantitative
			Number of incidents of non-compliance associated with water quantity and/or quality permits, standards, and regulations	Quantitative

			Description of water management risks and discussion of strategies and practices to mitigate those risks	Discussion and Analysis
		Distribution Network Efficiency	Water main replacement rate	Quantitative
			Volume of non-revenue real water losses	Quantitative
		Effluent Quality Management	Number of incidents of non-compliance associated with water effluent quality permits, standards, and regulations	Quantitative
			Discussion of strategies to manage effluents of emerging concern	Discussion and Analysis
	Waste & Hazardous Materials Management	Waste Management	Amount of waste generated, percentage hazardous, percentage recycled	Quantitative
		Coal ash management	Amount of coal combustion residuals (CCR) generated, percentage recycled	Quantitative
			Total number of coal combustion residual (CCR) impoundments, broken down by hazard potential classification and structural integrity assessment	Quantitative
		Management of Leachate & Hazardous Waste	(1) Total Toxic Release Inventory (TRI) releases, (2) percentage released to water	Quantitative
			Number of corrective actions implemented for landfill releases	Quantitative
			Number of incidents of non-compliance associated with environmental impacts	Quantitative
		Hazardous Waste Management	Amount of hazardous waste generated, percentage recycled	Quantitative
			Number and aggregate quantity of reportable spills, quantity recovered	Quantitative
	Ecological Impacts	Environmental impacts of project development	Number of incidents of non-compliance with environmental permits, standards, and regulations	Quantitative
			Discussion of processes to assess and manage environmental risks associated with project design, siting, and construction	Discussion and Analysis
			Number and duration of project delays related to ecological impacts	Quantitative
			Description of efforts in (solar energy system) project development to address community and ecological impacts	Discussion and Analysis
		Biodiversity impacts	Terrestrial acreage disturbed, percentage of impacted area restored	
		Land use & Ecological impacts	Number of (1)lots and (2) homes delivered on redevelopment sites (in Home builders)	
			Total amount of monetary losses as a result of legal proceedings associated with environmental regulations	
SOCIAL CAPITAL	**Human Rights & Community Relations**	Rights of Indigenous people	Discussion of engagement processes and due diligence practices with respect to the management of indigenous rights	Discussion and Analysis
		Security, Human rights & Rights of indigenous people	Discussion of engagement processes and due diligence practices with respect to management of human rights, indigenous rights, and operation in areas of conflict	Discussion and Analysis

		Community relations	Discussion of process to manage risks and opportunities associated with community rights and interests	Discussion and Analysis
			Number and duration of non-technical delays	Quantitative
	Customer Privacy	Data Privacy	Description of policies and practices relating to behavioral advertising and customer privacy	Discussion and Analysis
			Number of customers whose information is used for secondary purposes	Quantitative
			Total amount of monetary losses as a result of legal proceedings associated with customer privacy	Quantitative
			(1) Number of law enforcement requests of customer information, (2) number of customers whose information was requested, (3) percentage resulting in disclosure	Quantitative
	Data Security	Data Security	(1) Number of data breaches, (2) percentage involving personally identifiable information (PII), (3) number of customers affected	Quantitative
			Description of approach to identifying and addressing data security risks, including use of third-party cybersecurity standards	Discussion and Analysis
			(1) Number of data breaches, (2) percentage involving customers' confidential business information (CBI) or personally identifiable information (PII), (3) number of customers affected	Quantitative
	Access & Affordability	(Energy/ water/ gas) affordability	Average retail (electric/ water/gas) rate for (1) residential, (2) commercial, and (3) industrial customers	Quantitative
			Typical monthly (electric/ water/gas) bill for residential customers for (1) 500 kWh and (2) 1,000 kWh of electricity delivered per month	Quantitative
			Number of residential customer (electric/ water/gas) disconnections for non-payment, percentage reconnected within 30 days	Quantitative
			Discussion of impact of external factors on customer affordability of ([service] (electricity/ water/gas) including the economic conditions of the service territory	Discussion and Analysis
	Product Quality & Safety	Structural Integrity & Safety	Amount of defect- and safety-related rework costs	Quantitative
			Total amount of monetary losses as a result of legal proceedings associated with defect- and safety-related incidents	Quantitative
		Drinking Water Quality	Number of (1) acute health-based, (2) non acute health-based, and (3) non-health-based drinking water violations	Quantitative
			Discussion of strategies to manage drinking water contaminants of emerging concern	Discussion and Analysis
HUMAN CAPITAL	**Labor Practices**	Labor Practices	Percentage of active workforce covered under collective bargaining agreements	Quantitative
			(1) Number of work stoppages and (2) total days idle	Quantitative
			(1) Average wage and (2) percentage of employees earning minimum wage, by region	Quantitative
			(1) Voluntary and (2) involuntary turnover rate for employees	Quantitative

			Description of policies and programs to prevent worker harassment	
			Total amount of monetary losses as a result of legal proceedings associated with labor law violations; employment discriminations	Quantitative
			Percentage of employees working maximum hours	Quantitative
			Percentage of employees paid for overtime	Quantitative
			Percentage of drivers classified as independent contractors	Quantitative
	Employee Health & Safety	Workforce Health & Safety	Discussion of management systems used to integrate a culture of safety	Discussion and Analysis
			Description of efforts to assess, monitor, and reduce exposure of workforce to human health hazards	Discussion and Analysis
			Total amount of monetary losses as a result of legal proceedings associated with employee health and safety violations	Quantitative
			(1) Total recordable incident rate (TRIR), (2) fatality rate, and (3) near miss frequency rate (NMFR) for (a) direct employees and (b) contract employees	Quantitative
			Safety Measurement System BASIC percentiles for: (1) Unsafe Driving, (2) Hours-of-Service Compliance, (3) Driver Fitness, (4) Controlled Substances/Alcohol, (5) Vehicle Maintenance, and (6) Hazardous Materials Compliance	Quantitative
	Employee Engagement, Diversity & Inclusion	Workforce Diversity & Engagement/ Employee recruitment, Inclusion & Performance	Percentage of gender and racial/ethnic group representation for (1) executive management and (2) all other employees	Quantitative
			(1) Voluntary and (2) involuntary turnover rate for employees	Quantitative
			Employee engagement as a percentage	Quantitative
		Employee recruitment, Development & Retention	Discussion of talent recruitment and retention efforts	Discussion and Analysis
Business model & Innovation	**Product Design & Lifecycle Management**	Product End-of- life Management	Percentage of materials with recycled content	Quantitative
			Weight of end-of-life material recovered, percentage recycled	Quantitative
			Description of approach and strategies to design products for high-value recycling	Discussion and Analysis
			Description of approach to manage use, reclamation, and disposal of hazardous materials	Discussion and Analysis
		Product Innovation	Percentage of products that qualify for credits in sustainable building design and construction certifications	Quantitative
			Total addressable market and share of market for products that reduce energy, water, and /or material impacts during usage and/or production	Quantitative
		Lifecycle Impacts of Buildings & Infrastructure	Discussion of process to incorporate operational-phase energy and water efficiency considerations into project planning and design	Discussion and Analysis
		Climate impacts of business mix	Amount of backlog for (1) hydrocarbon related projects and (2) renewable energy projects	Quantitative

			Amount of backlog cancellations associated with hydrocarbon-related projects	Quantitative
			Amount of backlog for non-energy projects associated with climate change mitigation	Quantitative
		Management of Energy Infrastructure Integration & Related Regulations	Description of risks associated with integration of solar energy into existing energy infrastructure and discussion of efforts to manage those risks	Discussion and Analysis
			Description of risks and opportunities associated with energy policy and its impact on the integration of solar energy into existing energy infrastructure	Discussion and Analysis
		Fuel Economy & Use-phase Emissions	Discussion of strategy for managing fleet fuel economy and emissions risks and opportunities	Discussion and Analysis
			Fleet utilization rate	Quantitative
		RR-WT Ecological Impacts of Project Development	Average A-weighted sound power level of wind turbines, by wind turbine class	Quantitative
			Backlog cancellations associated with community or ecological impacts	Quantitative
			Description of efforts to address ecological and community impacts of wind energy production through turbine design	Discussion and Analysis
	Business Model Resilience	End-Use Efficiency & Demand	Percentage of electric/gas utility revenues from rate structures that (1) are decoupled and (2) contain a lost revenue adjustment mechanism (LRAM)	Quantitative
			Percentage of water utility revenues from rate structures that are designed to promote conservation and revenue resilience	Quantitative
			Percentage of electric load served by smart grid technology	Quantitative
			Customer electricity/water/gas savings from efficiency measures, by market	Quantitative
		Recycling & Resource Recovery	(1) Amount of waste incinerated, (2) percentage hazardous, (3) percentage used for energy recovery	Quantitative
			Percentage of customers receiving (1) recycling and (2) composting services, by customer type	Quantitative
			Amount of material (1) recycled, (2) composted, and (3) processed as waste-to- energy	Quantitative
			Amount of electronic waste collected, percentage recovered through recycling	Quantitative
	Supply Chain Management	Supply Chain Management	Discussion of strategy to manage environmental and social risks arising from the supply chain	Discussion and Analysis
		Environmental & Social Impacts of supply chain	Percentage of [materials] sourced that are certified to a third-party environmental and/or social standard, and percentages by standard	Quantitative
			Suppliers' social and environmental responsibility audit (1) non-conformance rate and (2) associated corrective action rate for (a) major and (b) minor conformances	Quantitative
			Discussion of strategy to manage environmental and social risks arising from contract growing and commodity	Discussion and Analysis

			sourcing	
			Number of facilities audited to a social responsibility code of conduct	Quantitative
	Materials Sourcing & Efficiency	Water Supply Resilience	Total water sourced from regions with High or Extremely High Baseline Water Stress, percentage purchased from a third party	Quantitative
			Volume of recycled water delivered to customers	Quantitative
			Discussion of strategies to manage risks associated with the quality and availability of water resources	Discussion and Analysis
		Materials Sourcing	Description of the management of risks associated with the use of critical materials	Discussion and Analysis
			Description of environmental and social risks associated with sourcing priority raw materials	Discussion and Analysis
		Product end of life management	(1) Materials recovered through take back programs, percentage of recovered materials that were reused, (3) recycled and (4)landfilled	Quantitative
		Materials Efficiency	Top five materials consumed, by weight	Discussion and Analysis
			Description of approach to optimize materials efficiency of wind turbine design	Discussion and Analysis
	Physical Impacts of Climate Change	Network Resiliency & Impacts of Climate Change	Wastewater treatment capacity located in 100-year flood zones	Quantitative
			(1) Number and (2) volume of sanitary sewer overflows (SSO), (3) percentage of volume recovered	Quantitative
			(1) Number of unplanned service disruptions, and (2) customers affected, each by duration category	Quantitative
		Climate Change Adaptation	Area of properties located in 100-year flood zones, by property subsector	Quantitative
			Description of climate change risk exposure analysis, degree of systematic portfolio exposure, and strategies for mitigating risks	Discussion and Analysis
Leadership & Governance	**Business Ethics**	Business ethics	(1) Number of active projects and (2) backlog in countries that have the 20 lowest rankings in Transparency International's Corruption Perception Index	Quantitative
			Total amount of monetary losses as a result of legal proceedings associated with charges of (1) bribery or corruption and (2) anticompetitive practices	Quantitative
			Description of policies and practices for prevention of (1) bribery and corruption, and (2) anti-competitive behavior in the project bidding processes	Discussion and Analysis
		Business ethics & Payments Transparency	Amount of net revenue in countries that have the 20 lowest rankings in Transparency International's Corruption Perception Index	Quantitative
		Professional Integrity	Description of approach to ensuring professional integrity	Discussion and Analysis

			Total amount of monetary losses as a result of legal proceedings associated with professional integrity	Quantitative
	Competitive Behavior	Competitive Behavior	Total amount of monetary losses as a result of legal proceedings associated with anticompetitive behavior regulations	Quantitative
		Pricing Integrity & Transparency	Total amount of monetary losses as a result of legal proceedings associated with price fixing or price manipulation	Quantitative
	Management of the Legal & Regulatory Environment	Management of the Legal & Regulatory Environment	Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry	Discussion and Analysis
			Amount of subsidies received through government programs	Quantitative
	Critical Incident Risk Management	Critical Incident Risk Management	Description of management systems used to identify and mitigate catastrophic and tail-end risks	Discussion and Analysis
		Nuclear safety & Emergency management	Total number of nuclear power units, broken down by US Nuclear Regulatory Commission Action Matrix Column	Quantitative
			Description of efforts to manage nuclear safety and emergency preparedness	Discussion and Analysis
		Integrity of Gas Delivery Infrastructure	Number of (1) reportable pipeline incidents, (2) Corrective Action Orders (CAO), and (3) Notices of Probable Violation (NOPV)	Quantitative
			Percentage of distribution pipeline that is (1) cast and/or wrought iron and (2) unprotected steel	Quantitative
			Percentage of gas (1) transmission and (2) distribution pipelines inspected	Quantitative
			Description of efforts to manage the integrity of gas delivery infrastructure, including risks related to safety and emissions	Discussion and Analysis
		Accident & Safety Management	Number of road accidents and incidents	Quantitative
			Safety Measurement System BASIC percentiles for: (1) Unsafe Driving, (2) Hours-of-Service Compliance, (3) Driver Fitness, (4) Controlled Substances/Alcohol, (5) Vehicle Maintenance, and (6) Hazardous Materials Compliance	Quantitative
			(1) Number and (2)aggregate volume of spills and releases to the environment	Quantitative
	Systemic Risk Management	Grid Resiliency	Number of incidents of non-compliance with physical and/or cybersecurity standards or regulations	Quantitative
			(1) System Average Interruption Duration Index (SAIDI), (2) System Average Interruption Frequency Index (SAIFI), and (3) Customer Average Interruption Duration Index (CAIDI), inclusive of major event days	Quantitative
		Managing Systemic Risks from Technology Interruptions	(1) System average interruption frequency and (2) customer average interruption duration	Discussion and Analysis
			Discussion of systems to provide unimpeded service during service interruptions	Quantitative

SASB has developed a document demonstrating its alignment to SDGs.[29] The results of SDG mapping exercise are presented as percentages of the SDG targets per goal that are addressed by SASB disclosure topics. Given that SASB is industry-specific and that each industry has a different contribution to SDGs, a more detailed SGD-level mapping is not feasible as part of the present mapping exercise.

Table 17: SASB SDG Mapping Breakdown by Goal[30]

	Targets in Goal	Mapped to SASB	%
1	7	5	71%
2	8	5	63%
3	13	13	100%
4	10	5	50%
5	9	3	33%
6	8	5	63%
7	5	5	100%
8	12	7	58%
9	8	6	75%
10	10	7	70%
11	10	9	90%
12	11	10	91%
13	5	3	60%
14	10	8	80%
15	12	10	83%
16	12	7	58%
17	19	3	16%

6.4.Analysis of TCFD Recommendations

Reference documents:

- Recommendations of the Task Force on Climate-related Financial disclosures - Final Document, June 2017
- Implementing the Recommendations of the Task Force on Climate-related Financial disclosures

Table 18: TCFD Overview Table

TCFD OVERVIEW TABLE	
GENERAL SYSTEM DATA	
NAME OF ESG SYSTEM	Task Force on Climate-related Financial disclosures (TCFD)

[29] Sustainability Accounting Standards Board. (June 2020) 'SASB Industry Guide to the Sustainable Development Goals'.
[30] Ibid.

SYSTEM DEVELOPER	Task Force (established by the G20's Financial Stability Board in June 2017)
DEVELOPMENT STATUS	completed / Framework published in June 2017 along with Implementation guide. Consultation held October 2020-January 2021 focused on forward-looking metrics
AMENDMENT OF PRIOR VERSION OR NOT	NO
BRIEF DESCRIPTION	The report is setting out our recommendations for helping businesses disclose climate-related financial information. The TCFD recommendations are already established as the primary framework for disclosure of information on the management of climate-related risks and opportunities in main annual filings. The TCFD has developed recommendations on climate change disclosure in an annually updated, publicly available report which is applicable for all sectors. The recommendations cover climate strategy, governance, risk management and metrics and targets. As part of their risk management, companies must identify and measure the financial implications of their material risks and opportunities under at least two widely recognized climate scenarios.
SYSTEM SCOPE	
TYPE OF ESG GUIDANCE	Framework / Recommendations for climate-related disclosures
MANDATORY OR VOLUNTARY	Voluntary
TARGET AUDIENCE	lenders, insurers, investors and other stakeholders
GLOBAL OR REGIONAL	Global
ESG FOCUS	E,G
CLIMATE-SPECIFIC	YES
PROJECT OR CORPORATE	CORPORATE - Includes Infrastructure Sector focus
INFRASTRUCTURE-SPECIFIC	NO
INFRASTRUCTURE-RELEVANT	YES
SYSTEM STRUCTURE	
NO. OF GUIDANCE DOCUMENTS	3
MAIN STRUCTURE COMPONENTS	Structure of the Recommendations and Guidance(chapters):1)Recommendations, 2)Recommended disclosures 3)Guidance for All Sectors 4) Supplemental Guidance for all Sectors Structure of Recommended disclosures (core elements): GOVERNANCE, STRATEGY, RISK

	MANAGEMENT, METRICS & TARGETS		
ECONOMY SECTORS-SPECIFIC	NO - it can be applied to all sectors (additional sector-specific guidance is included)		
TARGET ECONOMY SECTORS/INDUSTRIES	**FINANCIAL SECTOR** Banks Insurance Companies Asset Owners Asset Managers		**NON-FINANCIAL SECTOR** Energy Transportation Materials & Buildings Agriculture, Food and Forest products
SUSTAINABILITY TOPICS	(LIST OF TOPICS)		
CATEGORIZATION OF TOPICS AS E, S, or/and G	**ENVIRONMENTAL** climate-related metrics: - GHG emissions - Energy / Fuel - Water - Land Use - Location - Risk Adaptation & Mitigation	**SOCIAL**	**GOVERNANCE** Governance -related metrics: Risk Adaptation & Mitigation
NUMBER OF INDICATORS	11 recommended disclosures		
NUMBER OF INDICATORS PER ESG ASPECT	**E:** 11 recommended disclosures	**S:** **N/A**	**G:** **N/A**
NUMBER OF INDICATORS PER SECTOR	**N/A**		
NUMBER OF INFRASTRUCTURE-RELEVANT INDICATORS	11 recommended disclosures (all disclosures)		
SYSTEM CONTENT			
INCLUSION OF BENCHMARKS	NO		
INCLUSION OF METRICS	YES		
QUANTITATIVE VS. QUALITATIVE METRICS	1 recommended disclosure that includes several metrics relevant to each economy sector		10 recommended disclosures with qualitative content

CONNECTION TO PROJECT PHASES	NO
CONNECTION/REFERENCE TO OTHER ESG SYSTEMS	YES
	mentions the disclosures coverage by the systems: G20/OECD, CDP, GRI, CDSB, SASB, <IR>
CONNECTION TO SDGs (DIRECT OR INDIRECT)	NO

The TCFD's report provides recommendations for helping businesses disclose climate-related financial information. These recommendations are already established as the primary framework for disclosure of information on the management of climate-related risks and opportunities in main annual filings.

The recommendations are structured around four thematic areas that represent core elements of how organizations operate: governance, climate strategy, risk management and metrics and targets. As part of their risk management, companies must identify and measure the financial implications of the material risks and opportunities under at least two widely recognized scenarios. The structure of the recommendation is shown in the following table.

Table 19: TCFD's Main structure elements

	TCFD			
	GOVERNANCE	**STRATEGY**	**RISK MANAGEMENT**	**METRICS AND TARGETS**
	Disclose the organization's governance around climate-related risks and opportunities.	Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	Disclose how the organization identifies, assesses, and manages climate-related risks.	Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.
RECOMMENDED DISCLOSURES	a) Describe the board's oversight of climate-related risks and opportunities.	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	a) Describe the organization's processes for identifying and assessing climate-related risks.	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.
	b) Describe management's role in assessing and managing climate-related	b) Describe the impact of climate-related risks and opportunities on the	b) Describe the organization's processes for managing climate-related	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG)

	risks and opportunities.	organization's businesses, strategy, and financial planning.	risks.	emissions, and the related risks.
		c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.	c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

The TCFD's guidance includes context and suggestions for implementing the recommended disclosures for all organizations. Additionally, the report also provides supplemental guidance for the major industries of the financial sector and the non-financial groups as follows:

Financial Sector:

The Task Force developed supplemental guidance for the financial sector, which it organized into four major industries largely based on activities performed. The four industries are:

- banks (lending),
- insurance companies (underwriting),
- asset managers (asset management),
- asset owners, which include public- and private-sector pension plans, endowments, and foundations (investing).

The Task Force believes that disclosures by the financial sector could foster an early assessment of climate-related risks and opportunities, improve pricing of climate-related risks, and lead to more informed capital allocation decisions.

However, the financial sector's organizations do not fall within AISI's scope, which intends to be used by organizations and companies that own and operate hard infrastructure assets. Consequently, for the purposes of this mapping exercise, the supplemental guidance for financial groups (including example metrics) has not been considered.

Non-Financial Groups:

The Task Force developed supplemental guidance for non-financial industries that account for the largest proportion of GHG emissions, energy usage, and water usage. These industries were organized into four groups (i.e., non-financial groups):

1. Energy;
2. Materials and Buildings;
3. Transportation;

4. Agriculture, Food, and Forest Products

The groupings are based on similarities in climate-related risks. While this supplemental guidance focuses on a subset of non-financial industries, organizations in other industries with similar business activities may wish to review and consider the issues and topics contained in the supplemental guidance.

For the purposes of this mapping exercise, the fourth non-financial industry's supplemental guidance (Agriculture , Food and Forest products) has not been considered because the included groups are not relevant to infrastructure organizations that AISI is designated for.

As shown in the following table, supplemental disclosures of non-financial groups are related to TCFD's "Strategy" and "Metrics and targets" core elements.

Table 20: TCFD - Areas of supplemental guidance industry/group

		Governance		Strategy			Risk Management			Metrics and Targets		
	Industries and Groups	a)	b)	a)	b)	c)	a)	b)	c)	a)	b)	c)
Financial	Banks			■			■			■		
	Insurance Companies				■	■	■	■		■		
	Asset Owners				■	■	■	■		■	■	
	Asset Managers				■		■	■		■	■	
Non-financial	Energy				■	■				■		
	Transportation				■	■				■		
	Materials and Buildings				■	■				■		
	Agriculture, Food, and Forest Products				■	■				■		

The supplemental guidance includes several example metrics for each of the four non-financial groups[31]. These metrics together with the corresponding climate-related categories are presented in the following table:

[31] The specific disclosure for Supplemental Guidance for Non-Financial Groups mentions: "For all relevant metrics, organizations should consider providing historical trends and forward-looking projections (by relevant country and/or jurisdiction, business line, or asset type). Organizations should also 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. Organizations should consider providing key metrics related to GHG emissions, energy, water, land use, and, if relevant, investments in climate adaptation and mitigation that address potential financial aspects of shifting demand, expenditures, asset valuation, and cost of financing. Illustrative examples of metrics for each of the four non-financial groups are

Table 21: TCFD Example metrics for Non-Financial Groups

METRICS AND TARGETS Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.			
Supplemental Guidance for Non-Financial Groups			
NON FINANCIAL SECTOR	**FINANCIAL CATEGORY**	**EXAMPLE METRICS**	**CLIMATE - RELATED CATEGORY**
ENERGY	**Revenues**	Estimated Scope 3 emissions, including methodologies and emission factors used	GHG Emissions
		Revenues/savings from investments in low-carbon alternatives (e.g., R&D, equipment, products or services)	Risk Adaptation & Mitigation
	Expenditures	Describe current carbon price or range of prices used	GHG Emissions
		Expenditures (OpEx) for low-carbon alternatives (e.g., R&D, equipment, products, or services)	Risk Adaptation & Mitigation
		Proportion of capital allocation to long-lived assets versus short-term assets	Risk Adaptation & Mitigation
		Percent water withdrawn in regions with high or extremely high baseline water stress	Water
		Amount of gross global Scope 1 emissions from: (1) combustion, (2) flared hydrocarbons, (3) process emissions, (4) directly vented releases, and (5) fugitive-emissions/leaks	GHG Emissions
		Indicative costs of supply for current and committed future projects (e.g., through a cost curve or indicative price range. This could be broken down by product, asset, or geography)	Energy/Fuel
	Assets	Assets committed in regions with high or extremely high baseline water stress	Water
		Investment (CapEx) in low-carbon alternatives (e.g., capital equipment or assets)	Risk Adaptation & Mitigation
		A breakdown of reserves by type and an indication of associated emissions factors to provide insight into potential future emissions	GHG Emissions
	Capital	Capital payback periods or return on capital deployed	Risk Adaptation & Mitigation
TRANSPORTATION	**Revenues**	Sales-weighted average fleet fuel economy, by region and weight/number of people transported	Energy/Fuel
		Revenues/savings from investments in low-carbon alternatives (e.g., R&D, equipment, products or services)	Risk Adaptation & Mitigation
		Vehicle sales (historical, current and projected) by category (e.g., gas vehicles, diesel vehicles, battery electric vehicles, plug-in hybrid electric vehicles, alternative-powered vehicles (LPG, CNG, fuel cells, compressed air)	Risk Adaptation & Mitigation
		Energy Efficiency Design Index (EEDI) for new ships	Risk Adaptation & Mitigation
	Expenditures	Expenditures (OpEx) for R&D for low-carbon transportation equipment or transportation services	Risk Adaptation & Mitigation

provided in the tables listed below." Source: TCFD "Implementing the recommendations of the Task Force on the climate-related financial disclosures", June 2017

		Total fuel consumed and percent renewable for road, airlines, marine, rail	Energy/Fuel
		Road vehicles—Geographic breakdown of GHG emissions: emissions and/or emission intensity of products for key geographies against regulatory requirements/targets	GHG Emissions
	Assets	Life cycle reporting of GHG emissions of Transportation products (air, ship, rail, truck, auto)	GHG Emissions
		Investments (CapEx) in low-carbon transportation equipment or transportation services	Risk Adaptation & Mitigation
MATERIALS & BUILDINGS	**Revenues**	Revenues/savings from investments in low-carbon alternatives (e.g., R&D, equipment, products or services)	Risk Adaptation & Mitigation
	Expenditures	Expenditures (OpEx) for low-carbon alternatives (e.g., R&D, technology, products, or services)	Risk Adaptation & Mitigation
		Total energy consumed, broken down by source (e.g., purchased electricity and renewable sources)	Energy/Fuel
		Total fuel consumed—percentage from coal, natural gas, oil, and renewable sources	Energy/Fuel
		Total energy intensity—by tons of product, amount of sales, number of products depending on informational value	Energy/Fuel
		Building energy intensity (by occupants or square area)	Energy/Fuel
		Percent of fresh water withdrawn in regions with high or extremely high baseline water stress	Water
		Building water intensity (by occupants or square area)	Water
		GHG emissions intensity from buildings (by occupants or square area) and from new construction and redevelopment	GHG Emissions
	Assets	Area of buildings, plants or properties located in designated flood hazard areas	Location
		A breakdown of reserves and an indication of associated emissions factors to provide insight into potential future emissions	GHG Emissions
		For each property type, the percentage certified as sustainable	Risk Adaptation & Mitigation
		Investment (CapEx) in low-carbon alternatives (e.g., capital equipment or assets)	Risk Adaptation & Mitigation

As shown in the table above, The TCFD guide classifies by default the example metrics for each non-financial group under the financial impact categories (revenues, expenditures, assets, capital). This classification does not serve for mapping purposes, as the structural compatibility with respect to AISI's content is very weak. As a result, or the purposes of the mapping exercise, it was decided to present the example metrics classified under the climate - related categories which are compatible with AISI's topics. This modification provides a more compatible structure to AISI's indicators and metrics as shown in the following table.

Table 22: TCFD example metrics classification according to climate-related categories

CLIMATE - RELATED CATEGORY	EXAMPLE METRICS	FINANCIAL IMPACT CATEGORY	NON FINANCIAL GROUPS

GHG Emissions	Estimated Scope 3 emissions, including methodologies and emission factors used	Revenues	Energy
GHG Emissions	Describe current carbon price or range of prices used	Expenditures	Energy
GHG Emissions	Amount of gross global Scope 1 emissions from: (1) combustion, (2) flared hydrocarbons, (3) process emissions, (4) directly vented releases, and (5) fugitive emissions/leaks	Expenditures	Energy
GHG Emissions	Road vehicles—Geographic breakdown of GHG emissions: emissions and/or emission intensity of products for key geographies against regulatory requirements/targets	Expenditures	Transportation
GHG Emissions	GHG emissions intensity from buildings (by occupants or square area) and from new construction and redevelopment	Expenditures	Materials & Buildings
GHG Emissions	A breakdown of reserves by type and an indication of associated emissions factors to provide insight into potential future emissions	Assets	Energy Materials & Buildings
GHG Emissions	Life cycle reporting of GHG emissions of Transportation products (air, ship, rail, truck, auto)	Assets	Transportation
Energy/Fuel	Sales-weighted average fleet fuel economy, by region and weight/number of people transported	Revenues	Transportation
Energy/Fuel	Indicative costs of supply for current and committed future projects (e.g., through a cost curve or indicative price range. This could be broken down by product, asset, or geography)	Expenditures	Energy
Energy/Fuel	Total fuel consumed—percentage from coal, natural gas, oil, and renewable sources	Expenditures	Transportation Materials & Buildings
Energy/Fuel	Total energy consumed, broken down by source (e.g., purchased electricity and renewable sources)	Expenditures	Materials & Buildings
Energy/Fuel	Total energy intensity—by tons of product, amount of sales, number of products depending on informational value	Expenditures	Materials & Buildings
Energy/Fuel	Building energy intensity (by occupants or square area)	Expenditures	Materials & Buildings
Water	Percent water withdrawn in regions with high or extremely high baseline water stress	Expenditures	Energy Materials & Buildings
Water	Building water intensity (by occupants or square area)	Expenditures	Materials & Buildings
Water	Assets committed in regions with high or extremely high baseline water stress	Assets	Energy
Risk Adaptation & Mitigation	Revenues/savings from investments in low-carbon alternatives (e.g., R&D, equipment, products or services)	Revenues	Energy Transportation Materials & Buildings
Risk Adaptation & Mitigation	Vehicle sales (historical, current and projected) by category (e.g., gas vehicles, diesel vehicles, battery electric vehicles, plug-in hybrid electric vehicles, alternative-powered vehicles (LPG, CNG, fuel cells, compressed air)	Revenues	Transportation
Risk Adaptation & Mitigation	Energy Efficiency Design Index (EEDI) for new ships	Revenues	Transportation
Risk Adaptation & Mitigation	Expenditures (OpEx) for low carbon alternatives (e.g., R&D, equipment, products, or services)	Expenditures	Energy Transportation Materials & Buildings
Risk Adaptation & Mitigation	Proportion of capital allocation to long-lived assets versus short term assets	Expenditures	Energy
Risk Adaptation & Mitigation	Capital payback periods or return on capital deployed	Capital	Energy
Risk Adaptation	Investment (CapEx) in low carbon alternatives (e.g. capital	Assets	Energy

& Mitigation	equipment or assets)		Transportation
			Materials & Buildings
Risk Adaptation & Mitigation	For each property type, the percentage certified as sustainable	Assets	Materials & Buildings
Location	Area of buildings, plants or properties located in designated flood hazard areas	Assets	Materials & Buildings

6.5. Analysis of the EU ESG Regulations

The nascent EU ESG Regime comprises a suite of measures, with the Taxonomy Regulation and the Non-Financial Reporting Directive sitting at the centre of the overall Regime structure. These two ESG rules along with the Sustainable Finance Disclosure Regulation are the most pressing for investment firms.
The three EU ESG rules are highly interconnected as shown in the graph below:

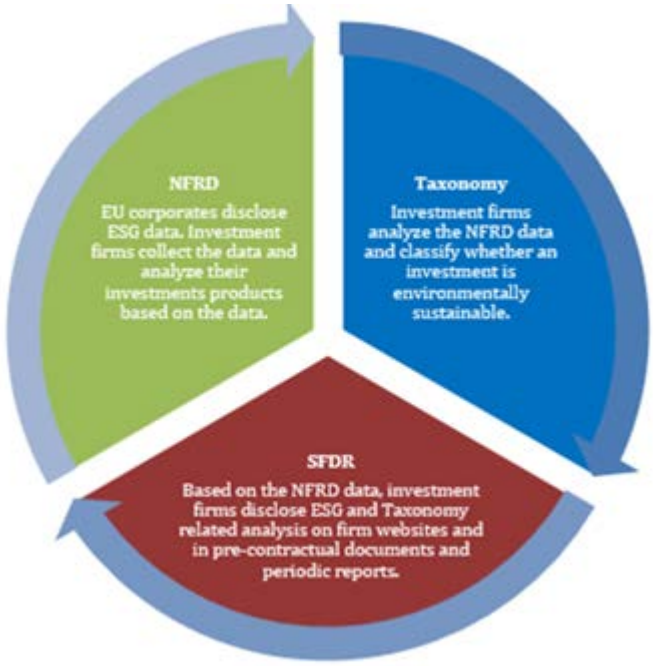


Fig.2: Interconnections between the EU Taxonomy, SFDR and NFRD Regulations[32]

They are still in process of being completed with different timelines each. Objective of the in-progress work of EU dedicated working groups and supervisory authorities is to achieve consistency between the three. The work on NFRD and SFDR is amending existing ESG regulations, while the Taxonomy is a newly developed tool to make the EU climate targets for 2030 and 2050 -in line with the EU's commitment to the

[32] Barrie C. Ingman. (July 2020) 'The Eu Taxonomy Regulation: An Overview'. https://insight.factset.com/eu-taxonomy-regulation

Paris Agreement- implementable in practice. It is widely seen as a first and essential enabling step to finance the transition to a more sustainable economy."[33]

The Taxonomy is not an ESG regulatory reporting framework or standard, but rather a classification system of economic activities that qualify as 'green' or 'environmentally sustainable'. It does not relate to entities or investment products, it rather defines specific underlying activities that can affect sustainability objectives.

The Taxonomy is built upon the six EU Green Deal environmental objectives:

1. Climate change mitigation.
2. Climate change adaptation.
3. Protection of water and marine resources.
4. Transition to a circular economy.
5. Pollution prevention and control.
6. Protection and restoration of biodiversity and ecosystems.

The Taxonomy sets performance thresholds (referred to as 'technical screening criteria') for economic activities which:

- make a 'substantive contribution' to one of six environmental objectives
- 'do no significant harm' (DNSH) to the other five objectives
- 'meet minimum social and governance safeguards' (e.g., OECD Guidelines on Multinational Enterprises and the UN Guiding Principles on Business and Human Rights).[34]

An activity has to comply with all three above principles to be Taxonomy-aligned.

The first phase of the Taxonomy has been published and enables the categorization of economic activities/sectors that contribute to climate change mitigation and adaptation (objectives 1 and 2).[35] The Taxonomy will be expanded to include adequate consideration of the remaining four objectives by the end of 2021. However, the Taxonomy cannot be applied until technical screening criteria for all the relevant objectives have been adopted.

The Taxonomy poses the new rule to businesses that fall within the NFRD to prove their activities are Taxonomy-aligned, with an implementation by December 31, 2021, for financial institutions. More

[33] EU Technical Expert Group on Sustainable Finance. (March 2020) "Taxonomy: Final report of the Technical Expert Group on Sustainable Finance".

[34] EU Technical Expert Group on Sustainable Finance. (March 2020) "Taxonomy: Final report of the Technical Expert Group on Sustainable Finance".

[35] The European Commission established a Technical Expert Group (TEG) on Sustainable Finance, which was tasked with developing recommendations on a range of topics, including what the Taxonomy technical screening criteria should be for the objectives of climate change mitigation and adaptation. The TEG has received input from all parts of the investment chain, industry sector representatives, academia, environmental experts, civil society and public bodies. The Taxonomy's basis for establishing thresholds is the 50–55% reduction by 2030 and net-zero emissions by 2050 of the EU Green Deal, consistent with EU's commitment to the Paris Agreement, and will be tightened over the period to 2050, e.g. in the case of CO2 intensity limits

specifically, it requires companies to disclose the proportion of their turnover derived from products or services associated with environmentally sustainable economic activities and the proportion of their capital and operating expenditure related to assets or processes associated with such activities.[36]

Investors will have to use the NFRD data that companies disclose to analyze if their investments are Taxonomy-aligned and the SFDR for the disclosure of this information. Taxonomy amends the SFDR to require 'financial market participants' to disclose, either:

- information on how, and to what extent, the investments that underlie their financial product support economic activities that aligns with the Taxonomy Regulation, or
- for those products that do not invest in taxonomy-compliant activities, a statement that they do not take into account the EU taxonomy.

Moreover, the Taxonomy amends the Disclosure Regulation, requiring the European Supervisory Authorities (i.e., ESMA, EBA and EIOPA) to develop, jointly, regulatory technical standards specifying the details of the presentation and content of the information in relation to the principle of "do no significant harm."

The Taxonomy modifies the NFRD to ensure non-financial corporate disclosures are aligned to the requirements of the Taxonomy classification system. The European Commission has to adopt by June 2021, a delegated act specifying the content and presentation of the Taxonomy-related information to be disclosed, including the methodology to be used. Recommendations, published on February 26, 2021,[37] focused on how to further specify KPIs for non-financial undertakings and those provided by asset management companies.

The EU ESG regime is still evolving. Extensive consultations on both the NFRD and SFDR and work of supervisory committees aim to establish consistency in requirements and definitions (to a large degree with the Taxonomy Regulation) and most importantly to ensure that the EU's Paris agreement commitment will be delivered.

6.5.1. Analysis of the EU Taxonomy Regulation

Reference documents:

1. EU Technical Expert Group on Sustainable Finance. (March 2020) Taxonomy: Final report of the Technical Expert Group on Sustainable Finance.
2. EU Technical Expert Group on Sustainable Finance. (March 2020) Taxonomy Report: Technical annex. Updated methodology & Updated Technical Screening Criteria

Table 23: EU Taxonomy Overview table

EU TAXONOMY OVERVIEW TABLE

[36] https://home.kpmg/fi/fi/home/Pinnalla/2019/08/eu-sustainable-finance-explained-part-ii-taxonomy.html

[37] European Financial Reporting Advisory Group (EFRAG). (February 2021) Final Report: Proposals For A Relevant And Dynamic EU Sustainability Reporting Standard-Setting

GENERAL SYSTEM DATA	
NAME OF ESG SYSTEM	EU Taxonomy
SYSTEM DEVELOPER	European Union. The EU assigned the task to the Technical Expert Group on Sustainable Finance
DEVELOPMENT STATUS	EU Taxonomy was agreed on political level in December 2019. Delegated acts containing technical screening criteria will be developed in two phases: The first technical screening criteria, for activities which substantially contribute to climate change mitigation or adaptation, are developed and will enter into application by the end of 2021. The second set of technical screening criteria, which cover economic activities substantially contributing to the other four environmental objectives are expected to be adopted by end 2021 and enter into application by end 2022.
AMENDMENT OF PRIOR VERSION OR NOT	NO.
BRIEF DESCRIPTION	The Taxonomy sets performance thresholds (referred to as 'technical screening criteria') for economic activities which: • make a substantive contribution to one of six environmental objectives; • do no significant harm (DNSH) to the other five, where relevant; • meet minimum safeguards (e.g., OECD Guidelines on Multinational Enterprises and the UN Guiding Principles on Business and Human Rights).
SYSTEM SCOPE	
TYPE OF ESG GUIDANCE	Regulation
MANDATORY OR VOLUNTARY	Mandatory
TARGET AUDIENCE	- Member states and EU institutions when setting rules about financial products and corporate bonds that are made available as environmentally sustainable – so the taxonomy will be used to define green bond standards in due course; - Financial market participants (FMPs) who offer financial products and market these as environmentally sustainable (primarily buy side firms and institutional investors) - Organisations covered by the Non-Financial Reporting Directive The EU Taxonomy is one of the most significant developments in sustainable finance and will have wide ranging implications for investors and issuers working in the EU, and beyond.
GLOBAL OR REGIONAL	Regional
ESG FOCUS	E (however contains minimum social and human rights safeguards)
CLIMATE-SPECIFIC	Yes
PROJECT, OR CORPORATE	Corporate
INFRASTRUCTURE-	No

SPECIFIC			
INFRASTRUCTURE-RELEVANT	Yes		
SYSTEM STRUCTURE			
NO. OF GUIDANCE DOCUMENTS	3 EU Taxonomy Report & Annex and a spreadsheet		
MAIN STRUCTURE COMPONENTS	Technical Screening Criteria per sector/activity		
ECONOMY SECTORS-SPECIFIC	YES		
TARGET ECONOMY SECTORS/INDUSTRIES	Assessing alignment with the Taxonomy should be performed by economic activity rather than by sector or industry. The TEG recommendations are structured around the EU's NACE (Nomenclature des Activités Économiques dans la Communauté Européenne) industry classification system, and the TEG has set technical screening criteria for economic activities within priority macro-sectors.		
SUSTAINABILITY TOPICS	• Climate change mitigation • climate change adaptation • water • circular economy • pollution • ecosystems		
CATEGORIZATION OF TOPICS AS E, S, or/and G	**ENVIRONMENTAL**	**SOCIAL**	**GOVERNANCE**
	Climate change mitigation Climate Change Adaptation Water Circular economy Pollution Ecosystems	N/A	N/A
NUMBER OF INDICATORS	N/A		
NUMBER OF INDICATORS PER SECTOR	N/A		
NUMBER OF INFRASTRUCTURE-RELEVANT INDICATORS	N/A		
SYSTEM CONTENT			
INCLUSION OF BENCHMARKS	Yes		
QUANTITATIVE VS. QUALITATIVE	'Substantial Contribution' to climate change mitigation is tested using quantitative indicators		'DNSH' makes reference to EU Directives and established best

METRICS		practices
CONNECTION TO PROJECT PHASES	No	
CONNECTION TO OTHER ESG SYSTEMS	No	
CONNECTION TO SDGs (DIRECT OR INDIRECT)	YES. The six environmental objectives are connected to SDG goals. Phase 1 is related to SDG 13: Take urgent action to combat climate change and its impacts	
CONNECTION TO TCFD	Given that the Taxonomy does not involve (itself) disclosure of climate-related information but rather sets thresholds for contribution to climate change mitigation and adaptation, TCFD alignment is out of scope. However, connection with TCFD is integral due to the climate-focus and the inclusion of climate-related scenarios and methodology for development of thresholds followed by the TEG.	

6.5.2. Analysis of the EU Non-Financial Reporting Directive (NFRD)

Reference documents:

- European Commission. (2017) Guidelines on non-financial reporting (methodology for reporting non-financial information)
- European Commission. (2019) Guidelines on reporting climate-related information

The two sets of Guidelines were merged into one table for the mapping exercise, without separating the different dates, as they have common themes.

Table 24: EU NFRD Structure table

EU NFRD		
MATTERS	**THEME**	**KPI**
Environmental matters	**Energy**	Total energy consumption and / or production) from renewable and non-renewable sources
		Energy efficiency target
		Renewable energy consumption and/or production target.
		Energy performance and improvements in energy performance
		Energy consumption from non-renewable sources and **energy intensity**
	Material disclosures on pollution prevention and control	

	Direct and indirect atmospheric emissions	Direct GHG emissions from sources owned or controlled by the company (Scope 1)
		Indirect GHG emissions from the generation of acquired and consumed electricity, steam, heat, or cooling (collectively referred to as "electricity") (Scope 2)
		All indirect GHG emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions (Scope 3)
		GHG absolute emissions target
		emissions of other pollutants (measured in absolute value and as intensity)
	Use and protection of natural resources (e.g. water, land) and related protection of biodiversity	Extraction of natural resources
		Impacts and dependencies on natural capital and biodiversity;
	Waste management	Waste management (e.g. recycling rates)
	Environmental impacts from transportation or from the use and disposal of products and services	
	Development of green products and services	
Climate	**Physical risks**	Assets committed in regions likely to become more exposed to acute or chronic physical climate risks
	Products and services	Percent turnover in the reporting year from products or services associated with activities that meet the criteria for substantially contributing to mitigation of or adaptation to climate change as set out in the Regulation on the establishment of a framework to facilitate sustainable investment (EU taxonomy). And / or Percent investment (CapEx) and/or expenditures (OpEx) in the reporting year for assets or processes associated with activities that meet the criteria for substantially contributing to mitigation of or adaptation to climate change as set out in the Regulation on the establishment of a framework to facilitate sustainable investment (EU taxonomy).

	Green Finance	Climate-related Green Bond Ratio: Total amount of green bonds outstanding (at year end) divided by (a 5-year rolling average of) total amount of bonds outstanding and / or, Climate-related Green Debt Ratio: Total amount of all green debt instruments outstanding (at year-end) divided by (a 5-year rolling average of) total amount of all debt outstanding.
	Disclosure on natural capitals(e.g. water, soil productivity or biodiversity) for companies whose business models are dependent on natural capitals threatened by climate change	
	Opportunities of efforts engaging with a transition to a low-carbon and climate-resilient economy, aligned with key EU policies, carrying out climate change mitigation / adaptation activities.	Revenues from low-carbon products
		Revenues from product or services applying to the circular economy model,
		R&D expenditures in circular economy production
Social and employee matters	**Implementation of fundamental conventions of the International Labour Organisation**	Employees entitled to parental leave, by gender
	Diversity issues, such as gender diversity and equal treatment in employment and occupation (including age, gender, sexual orientation, religion, disability, ethnic origin and other relevant aspects	Gender diversity and other aspects of diversity;
		Number of persons with disabilities employed.
	Employment issues, including employee consultation and/or participation, employment and working conditions	Employee consultation processes;
		Employee turnover
		Ratio of employees working under temporary contracts, by gender
	Trade union relationships, including respect of trade union rights	
	Human capital management including management of restructuring, career management and employability, remuneration system, training	Average hours of training per year per employee, by gender;

	Health and safety at work	Workers who participate in activities with a high risk of specific accidents or diseases;
		Number of occupational accidents, types of injury or occupational diseases;
	Consumer relations, including consumer satisfaction, accessibility, products with possible effects on consumers' health and safety	
	Impacts on vulnerable consumers	
	Responsible marketing and research	
	10. Community relations, including social and economic development of local communities.	
Respect for human rights	**Human rights due diligence**	Occurrences of severe impacts on human rights relating to its activities or decisions
		Process for receiving and addressing complaints, and mitigating and providing remedies to human rights violations
		Operations and suppliers at significant risk of human rights violations
	Processes and arrangements implemented to prevent human rights abuses	Processes and measures for preventing trafficking in human beings for all forms of exploitation, forced or compulsory labour and child labour, precarious work, and unsafe working conditions, in particular as regards geographic areas at higher risk of exposure to abuse
		How accessible their facilities, documents and websites are to people with disabilities
		Respect for freedom of association
		Engagement with relevant stakeholders.
Anti-corruption and bribery matters	**Management of anti-corruption and bribery matters and occurrences**	Anti-corruption policies, procedures and standards;
		Criteria used in corruption-related risk assessments;
		Internal control processes and resources allocated to preventing corruption and bribery;
		Employees having received appropriate training;
		Use of whistle-blowing mechanisms;

		Number of pending or completed legal actions on anti-competitive behaviour.
Supply chain matters	**Supply chain management**	Monitoring suppliers on: — labour practices, including child labour and forced labour, precarious work, wages, unsafe working conditions (including building safety, protective equipment, workers' health) — trafficking in human beings and other human rights matters — greenhouse gas emissions and other types of water and environmental pollution — deforestation and other biodiversity-related risks
		Monitoring the company's impact on suppliers, for instance, its payment terms and average payment periods.
Conflict minerals	**Responsible supply chains for tin, tantalum, tungsten and gold from conflict-affected and high-risk areas.**	— the proportion of direct relevant suppliers having adopted and implemented a conflict minerals due diligence policy consistent with the OECD Due Diligence Guidance; — the proportion of responsibly-sourced tin, tantalum, tungsten or gold originating in conflict-affected and high-risk areas; and — the proportion of relevant customers contractually requiring conflict minerals due diligence information under the OECD Due Diligence Guidance.

6.5.3. Analysis of the EU Sustainable Finance Disclosure Regulation (SFDR)

Reference Document: ESMA, EBA, EIOPA. (February 2, 2021) Final Report on draft Regulatory Technical Standards

The data presented on the EU SFDR are based on the recent report[38] of the European Supervisory Authorities (i.e., ESMA, EBA and EIOPA) on Regulatory Technical Standards (RTS) that list adverse sustainability impact indicators. This report amended the draft RTS for consultation of April 2020 based on received feedback in an effort to make the reporting process less complex and burdensome and better reflect current data availability. However, it is a draft.

Table 25: EU SFDR Draft Regulatory Technical Standards (RTS) Structure[39]

EU SFDR Draft Regulatory Technical Standards (RTS)		
MATTERS	**PRINCIPAL ADVERSE SUSTAINABILITY IMPACT INDICATORS**	**METRICS**
CLIMATE AND OTHER ENVIRONMENT-RELATED INDICATORS (applicable to investments in investee companies)		

38 ESMA, EBA, EIOPA. (February 2021) Final Report on draft Regulatory Technical Standards.
39 Ibid.

Greenhouse gas emissions	GHG emissions	Scope 1 GHG emissions
		Scope 2 GHG emissions
		Scope 3 GHG emissions (from January 1,2023)
		Total GHG emissions
	Carbon footprint	Carbon footprint
	GHG intensity of investee companies	GHG intensity of investee companies
	Exposure to companies active in the fossil fuel sector	Share of investments in companies active in the fossil fuel sector
	Share of non-renewable energy consumption and production	Share of non-renewable energy consumption and non-renewable energy production of investee companies from non-renewable energy sources compared to renewable energy sources, expressed as a percentage
	Energy consumption intensity per high impact climate sector	Energy consumption in GWh per million EUR of revenue of investee companies, per high impact climate sector
Biodiversity	Activities negatively affecting biodiversity-sensitive areas	Share of investments in investee companies with sites/operations located in or near to biodiversity-sensitive areas where activities of those investee companies negatively affect those areas
Water	Emissions to water	Tonnes of emissions to water generated by investee companies per million EUR invested, expressed as a weighted average
Waste	Hazardous waste ratio	Tonnes of hazardous waste generated by investee companies per million EUR invested, expressed as a weighted average
INDICATORS (applicable to investments in real estate assets)		
Fossil Fuels	Exposure to fossil fuels through real estate assets	Share of investments in real estate assets involved in the extraction, storage, transport or manufacture of fossil fuels
Energy efficiency	Exposure to energy-inefficient real estate assets	Share of investments in energy-inefficient real estate assets
SOCIAL AND EMPLOYEE, RESPECT FOR HUMAN RIGHTS, ANTI-CORRUPTION AND ANTI-BRIBERY MATTERS (applicable to investments in investee companies)		
Social and employee matters	Violations of UN Global Compact principles and Organisation for Economic Cooperation and Development (OECD) Guidelines for Multinational Enterprises	Share of investments in investee companies that have been involved in violations of the UNGC principles or OECD Guidelines for Multinational Enterprises
	Lack of processes and compliance mechanisms to monitor compliance with UN Global Compact principles and OECD Guidelines for Multinational Enterprises	Share of investments in investee companies without policies to monitor compliance with the UNGC principles or OECD Guidelines for Multinational Enterprises or grievance /complaints handling mechanisms to address violations of the UNGC principles or OECD Guidelines for Multinational Enterprises
	Unadjusted gender pay gap	Average unadjusted gender pay gap of investee companies

	Board gender diversity	Average ratio of female to male board members in investee companies
	Exposure to controversial weapons (anti-personnel mines, cluster munitions, chemical weapons and biological weapons)	Share of investments in investee companies involved in the manufacture or selling of controversial weapons
MATTERS	**ADDITIONAL ADVERSE SUSTAINABILITY IMPACT INDICATORS**	**METRICS**
CLIMATE AND OTHER ENVIRONMENT-RELATED INDICATORS (applicable to investments in investee companies)		
Emissions	Emissions of inorganic pollutants	Tonnes of inorganic pollutants equivalent per million EUR invested, expressed as a weighted average
	Emissions of air pollutants	Tonnes of air pollutants equivalent per million EUR invested, expressed as a weighted average
	Emissions of ozone depletion substances	Tonnes of ozone depletion substances equivalent per million EUR invested, expressed as a weighted average
	Investments in companies without carbon emission reduction initiatives	Share of investments in investee companies without carbon emission reduction initiatives aimed at aligning with the Paris Agreement
Energy performance	Breakdown of energy consumption by type of non-renewable sources of energy	Share of energy from non-renewable sources used by investee companies broken down by each non-renewable energy source
Water, waste and material emissions	Water usage and recycling	Average amount of water consumed and reclaimed by the investee companies (in cubic meters) per million EUR of revenue of investee companies
		Weighted average percentage of water recycled and reused by investee companies
	Investments in companies without water management policies	Share of investments in investee companies without water management policies
	Exposure to areas of high water stress	Share of investments in investee companies with sites located in areas of high water stress without a water management policy
	Investments in companies producing chemicals	Share of investments in investee companies the activities of which fall under Division 20.2 of Annex I to Regulation (EC) No 1893/2006
	Land degradation, desertification, soil sealing	Share of investments in investee companies the activities of which cause land degradation, desertification or soil sealing
	Investments in companies without sustainable land/agriculture practices	Share of investments in investee companies without sustainable land/agriculture practices or policies
	Investments in companies without sustainable oceans/seas practices	Share of investments in investee companies without sustainable oceans/seas practices or policies

	Non-recycled waste ratio	Tonnes of non-recycled waste generated by investee companies per million EUR invested, expressed as a weighted average
	Natural species and protected areas	Share of investments in investee companies whose operations affect threatened species
		Share of investments in investee companies without a biodiversity protection policy covering operational sites owned, leased, managed in, or adjacent to, a protected area or an area of high biodiversity value outside protected areas
	Deforestation	Share of investments in companies without a policy to address deforestation
Green securities	Share of securities not certified as green under a future EU legal act setting up an EU Green Bond Standard	Share of securities in investments not certified as green
INDICATORS (applicable in real estate assets)		
Greenhouse gas emissions	GHG emissions	Scope 1 GHG emissions generated by real estate assets
		Scope 2 GHG emissions generated by real estate assets
		From 1 January 2023, Scope 3 GHG emissions generated by real estate assets
		Total GHG emissions generated by real estate assets
Energy consumption	Energy consumption intensity	Energy consumption in GWh of owned real estate assets per square meter
Waste	Waste production in operations	Share of real estate assets not equipped with facilities for waste sorting and not covered by a waste recovery or recycling contract
Resource consumption	Raw materials consumption for new construction and major renovations	Share of raw building materials (excluding recovered, recycled and biosourced) compared to the total weight of building materials used in new construction and major renovations
Biodiversity	Land artificialisation	Share of non-vegetated surface area (surfaces that have not been vegetated in ground, as well as on roofs, terraces and walls) compared to the total surface area of the plots of all assets
SOCIAL AND EMPLOYEE, RESPECT FOR HUMAN RIGHTS, ANTI-CORRUPTION AND ANTI-BRIBERY MATTERS		
Additional Social and employee matters	Investments in companies without workplace accident prevention policies	Share of investments in investee companies without a workplace accident prevention policy
	Rate of accidents	Rate of accidents in investee companies expressed as a weighted average
	Number of days lost to injuries, accidents, fatalities or illness	Number of workdays lost to injuries, accidents, fatalities or illness of investee companies expressed as a weighted average
	Lack of a supplier code of conduct	Share of investments in investee companies without any supplier code of conduct (against unsafe working conditions, precarious work, child labour and forced labour)

	Lack of grievance/complaints handling mechanism related to employee matters	Share of investments in investee companies without any grievance/complaints handling mechanism related to employee matters
	Insufficient whistleblower protection	Share of investments in entities without policies on the protection of whistleblowers
	Incidents of discrimination	Number of incidents of discrimination reported in investee companies expressed as a weighted average
	Excessive CEO pay ratio	Average ratio within investee companies of the annual total compensation for the highest compensated individual to the median annual total compensation for all employees (excluding the highest-compensated individual)
Human Rights	Lack of a human rights policy	Share of investments in entities without a human rights policy
	Lack of due diligence	Share of investments in entities without a due diligence process to identify, prevent, mitigate and address adverse human rights impacts
	Lack of processes and measures for preventing trafficking in human beings	Share of investments in investee companies without policies against trafficking in human beings
	Operations and suppliers at significant risk of incidents of child labour	Share of investments in investee companies exposed to operations and suppliers at significant risk of incidents of child labour exposed to hazardous work in terms of geographic areas or type of operation
	Operations and suppliers at significant risk of incidents of forced or compulsory labour	Share of the investments in investee companies exposed to operations and suppliers at significant risk of incidents of forced or compulsory labour in terms in terms of geographic areas and/or the type of operation
	Number of identified cases of severe human rights issues and incidents	Number of cases of severe human rights issues and incidents connected to investee companies on a weighted average basis
Anti-corruption and anti-bribery	Lack of anti-corruption and anti-bribery policies	Share of investments in entities without policies on anti-corruption and anti-bribery consistent with the United Nations Convention against Corruption
	Cases of insufficient action taken to address breaches of standards of anti-corruption and anti-bribery	Share of investments in investee companies with identified insufficiencies in actions taken to address breaches in procedures and standards of anti-corruption and anti-bribery
	Number of convictions and amount of fines for violation of anti-corruption and anti-bribery laws	Numbers of convictions and amount of fines for violations of anti-corruption and anti-bribery laws by investee companies

6.6. Overview of ISO TC 322 Standards

Reference documents:

- ISO/TC 322 Sustainable Finance: Scope and Supporting statement, September 2019

- ISO/TC 322 Strategic Business Plan v1, April 2020

Table 26: ISO TC 322 Overview table

ISO/TC 322 SYSTEM OVERVIEW TABLE	
GENERAL SYSTEM DATA	
NAME OF ESG SYSTEM	ISO/TC 322
SYSTEM DEVELOPER	International Organization for Standardization (ISO)
DEVELOPMENT STATUS	Under development. The total programme is estimated to be completed within 4 to 8 years.
	Standards under development: 1. ISO/WD 32210 Framework for sustainable finance: Principles and guidance 2. ISO/DTR 32220: Sustainable Finance – Glossary of key terms
AMENDMENT OF PRIOR VERSION OR NOT	No, but will have close cooperation with existing ISO standards: TC 68 in the field of financial services, TC 207 in the field of environmental management, TC 251 in the field of asset management and TC 309 in the field of governance of organizations.
BRIEF DESCRIPTION	ISO TC 322 Standards aim to standardize the field of sustainable finance integrating sustainability considerations (environmental, social and governance practices) with financing.
	Goal and content: TC 322 will look to support the alignment of the global financial system with sustainable development goals by 1.harmonizing understanding and language, initially through a terminology guide; 2.setting principles and framework standards applicable to the whole financial system 3.developing a set of technical standards.
SYSTEM SCOPE	
TYPE OF ESG GUIDANCE	Conceptual Reporting Framework & Standard
MANDATORY OR VOLUNTARY	Mandatory
TARGET AUDIENCE	Financial market participants from both the supply and demand sides, such as institutional and retail investors, fund managers, banks, insurers, intermediaries, funds (investment, pension, sovereign wealth, private equity, venture capital, third party service providers and recipients of finance, as well as policy makers and regulators.
GLOBAL OR REGIONAL	Global
ESG FOCUS	E,S,G
CLIMATE-SPECIFIC	No
PROJECT, OR CORPORATE	N/A
INFRASTRUCTURE-SPECIFIC	No
INFRASTRUCTURE-RELEVANT	N/A
SYSTEM STRUCTURE	

NO. OF GUIDANCE DOCUMENTS	N/A		
MAIN STRUCTURE COMPONENTS	1. Ad Hoc Group Terminology incl. ISO 32220. This technical note will serve as a glossary for commonly used terms in sustainable finance.		
	2.WG1 Sustainable Finance Framework ISO 32210; Establishing a Global Sustainable Finance Principles (GSFPs) standard could consolidate key elements of all existing principles which relate to green, social, sustainable or ESG subject matter.		
	3. Technical standards on sustainable finance. In addition to the terminology guide and the high-level GSFPs, there will be strong needs for a large number of technical standards to cover important stages/aspects of sustainable financial transactions for demonstrating and embedding sustainable outcomes into financial activities. ISO/TC 322 will work with other ISO/TCs and external organisations to establish and complete this set of technical standards		
ECONOMY SECTORS-SPECIFIC	N/A		
TARGET ECONOMY SECTORS/INDUSTRIES	N/A		
SUSTAINABILITY TOPICS	N/A		
CATEGORIZATION OF TOPICS AS E, S, or/and G	**ENVIRONMENTAL**	**SOCIAL**	**GOVERNANCE**
	N/A	N/A	N/A
NUMBER OF INDICATORS	N/A		
NUMBER OF INDICATORS PER SECTOR	N/A		
NUMBER OF INFRASTRUCTURE-RELEVANT INDICATORS	N/A		
SYSTEM CONTENT			
INCLUSION OF BENCHMARKS	N/A		
QUANTITATIVE VS. QUALITATIVE METRICS	N/A		N/A
CONNECTION TO PROJECT PHASES	N/A		
CONNECTION/REFEREN	Yes		

CE TO OTHER ESG SYSTEMS	TC for sustainable finance will have close cooperation with TC 68 in the field of financial services, TC 207 in the field of environmental management, TC 251 in the field of asset management and TC 309 in the field of governance of organizations.[40]
CONNECTION TO SDGs (DIRECT OR INDIRECT)	N/A. However, current documents have shown ISO/TC 322's intention to contribute to SDGs with clear statements.
CONNECTION TO TCFD FRAMEWORK	N/A

6.7. Overview of IFRS Standards

Reference documents:

- IFRS Foundation. (September 2020) Consultation Paper on Sustainability Reporting
- IFRS Foundation. (February 2021) Chairman's Report IFRS Advisory Council
- IFRS Foundation Trustees February 2021 Public Announcement

After a round of informal consultations, the IFRS Foundation identified the need for a set of Sustainability Reporting standards, consistent and globally comparable. To this end, it has been discussed that a Sustainability Standards Board (SSB) will be established to develop these standards. IFRS Foundation currently deals with financial reporting, most useful for investors and other users of financial statements. IFRS Standards are based on the concept of financial materiality. With Sustainability Reporting, the idea is to develop standards that "bring transparency, accountability and efficiency" to financial markets around the world. To begin with, these new standards would be more aligned towards climate-risk, which is increasingly becoming a form of financial risk. Given the large network IFRS Foundation already enjoys globally, deploying new sustainability standards to achieve the primary goals of international consistency and comparability would be possible. It was also discussed that at later stages, SSB might adopt a broader scope of sustainability reporting, to include the "interrelationship between environment, social and governance factors."

The IFRS Foundation's consultation on sustainability disclosure concludes that climate-related information has been prioritized for early consideration, which is why it recommends taking a "climate-first" approach.

7. HIGH-LEVEL MAPPING EXERCISE AND FINDINGS

Targeted combinations of the above fields of data included in the analysis tables of each system generate conclusions on the following main high-level mapping objectives:

- scope compatibility,
- tool's ease of use and compactness,

[40] Moreover, its adoption will be enhanced by drawing on existing segmented principles established, inter alia by the Equator Principles, UNPRI, UNEP Sustainable Banking Principles, Green Investment Principles for the Belt and Road, G20 Quality Infrastructure Principles, the Green Bond Principles, the work of the Technical Expert Group on Sustainable Finance of the European Commission and in existing regulatory framework.

- comprehensiveness,
- infrastructure project relevance, and
- structure and content comparability.

Regarding system scope compatibility

Scope compatibility is a function of the type of guidance the system represents and the ESG scope. As already mentioned the 13 reviewed systems vary in terms of the type of guidance they represent, which determines their scope, structure and content.

The systems represent the following types of guidance:

- conceptual reporting framework (that provides reporting principles or recommendations and does not prescribe indicators and metrics),
- standard (prescribes indicators and metrics),
- reporting framework and standard (that prescribes indicators and metrics based on overall principles),
- reporting guidelines, and
- ESG regulation (sets the obligations for ESG reporting compliance).

The different nature of the ESG systems, varying from conceptual frameworks to standards or regulations does not enable the same level of mapping for all cases. The mapping exercise for conceptual frameworks considers the alignment to principles or recommendations, given that they do not prescribe the specific disclosures. The mapping exercise for standards enters in greater detail comparing prescribed sustainability issues and indicators or units.

At the same time, systems have a different ESG scope, they cover different aspects of ESG and some have an intended limited focus, as exemplified in the climate-related disclosures. These systems cannot by definition be compared in equal terms with AISI, which covers environmental, social and governance. However, a targeted comparison, limited to AISI's social, or environmental or governance or climate-related indicators and metrics could be performed on a case-by-case basis.

AISI as a reporting standard has high compatibility with those systems that are intended as standards and combined conceptual frameworks & standards, and a lower compatibility with conceptual frameworks.

Table 27: AISI's Comparability with the other systems in terms of type of guidance and basis for Systems Scope compatibility results

TYPES OF GUIDANCE	SYSTEMS	COMPARABILITY
Standards	WEF-IBC, ISO TC 322	HIGH
Combined Conceptual Frameworks & Standards	5ISS, SASB, GRI, CDP	HIGH

Reporting Frameworks	CDSB, TCFD, IR	LOW
Reporting Guidelines (with examples of key performance indicators	EU NFRD	LOW
ESG Regulations	EU Taxonomy, EU SFDR	LOW

The Table below presents the fields of the high-level systems matrix that were accounted for determining each system's scope compatibility:

Table 28: Basis for Systems Scope compatibility results

ESG SYSTEM	TYPE OF ESG GUIDANCE	ESG FOCUS	CLIMATE-SPECIFIC
AISI	Guidance tool	E,S,G	NO
EU TAXONOMY (PHASE 1)	ESG Regulation (classification of sustainable activities)	E	YES (phase 1)
EU SFDR	ESG Regulation sustainability disclosure obligations	E,S (and less G)	NO
EU NFRD	Guidelines on non-financial reporting & Supplement Guidelines on reporting climate-related information	E,S	YES (additional focus)
5ISS	Combination of Frameworks & Standards	E, G	YES
CDP	Standard	E,G	YES
CDSB	Reporting Framework	E	YES (additional focus)
GRI	Reporting principles & standards	E,S,G	NO
<IR>	Guidance for integrated reporting	E,S,G[41]	NO
SASB	Conceptual Framework & Standards	E,S,G	NO
WEF-IBC	Tool/ ESG Reporting Metrics and Disclosure Standards	E,S,G	NO
ISO TC 322	Standards	E,S,G	NO
IFRS	Financial reporting standards integrating sustainability and climate change	E,S,G	Climate-first approach
TCFD	Framework/ Recommendations for climate-related disclosures	E,G	YES

[41] Considering its definition of enterprise value as an overall stock of capitals: Financial Capital, Manufactured Capital, Intellectual Capital, Human Capital, Social and relationship Capital and Natural Capital.

The ESG focus column, apart from providing an overall view of each system's ESG scope, indicates which of the ESG categories of systems can be studied against AISI.

Regarding ease of use/ compactness

The Table below presents the fields of the high-level systems matrix that were accounted for determining each system's ease of use/compactness compatibility. It is worth noting that the ease of use is also a function of the number of indicators that cover a specific sustainability topic, which will be explored as part of the detailed mapping exercise.

Table 29: Basis for Ease of use/ compactness results

SYSTEMS	No OF GUIDANCE DOCUMENTS	ECONOMY SECTORS-SPECIFIC	NO. OF SUSTAINABILITY TOPICS	NO.OF INFRASTRUCTURE RELEVANT TOPICS	NUMBER OF INDICATORS	DIRECT CONNECTION TO SDGs
AISI	1	NO	15	15	28	YES
EU TAXONOMY (PHASE 1)	3	YES	6	6	-	YES
EU SFDR	1	NO	13 (7 principal + 13 additional) (some repeated)	20 (some repeated)	54 (16 principal & 38 additional)	NO
EU NFRD	2	NO	25	25	34 examples of KPIs & 12 examples of Climate-related KPIs[42]	NO
5ISS	N/A	NO	N/A	N/A	N/A	
CDP	4 (online platform)	YES	35[43]	35		YES
CDSB	1	NO	-	-	-	NO
GRI	37	NO	39	39	123	YES however in a separate document
<IR>	1	NO	-	-	-	
SASB	77 (1 per industry) + online platform	YES	26	24	(varies per industry)	YES however in a separate document

[42] The 34 examples of KPIs as part of the EU Guidelines on non-financial reporting (2017) and the 12 examples as part of the Supplement on reporting Climate-related (2019)

[43] In the case of Climate Change questionnaire 35 sub-modules

WEF-IBC	1	NO	18	18	TOTAL: 55 (21 core & 34 expanded)	YES
ISO TC322	N/A	N/A	N/A	N/A	N/A	N/A
IFRS	N/A	N/A	N/A	N/A	N/A	N/A
TCFD	4	YES	6[44]	6	11 recommended disclosures	NO

Ease of use is a stated objective of AISI reflected in a compact system manual and a not exhaustive list of performance indicators. As part of the research methodology ease of use is a function of:

1. the number of guidance documents that need to be used to assess performance, or on-line platform (as in the case of SASB and CDP),
2. the total number of performance indicators,
3. the number of indicators that are used to cover a specific sustainability topic, and
4. the direct connection with related SDGs goals and targets within the guidance document, to facilitate investors' knowledge on SDG alignment and stronger case for value creation.

Regarding system comprehensive[45]

AISI does not intend to provide a comprehensive sustainable performance evaluation, but rather highlight principal impacts and risks for early guidance of investors' decision making on prioritizing projects. As part of the research, comprehensiveness is approximated as a function of:

1. Full ESG scope coverage and balance between the three aspects
2. Inclusion of all impacts and risks of infrastructure projects (and not only those considered as principal)

Regarding infrastructure project relevance

To establish a comparable basis for mapping systems against AISI, it is important to narrow the scope of the ESG systems' indicators, or sustainability topics to those that are infrastructure project-relevant. This is specifically necessary to those systems that are economy sector/industry-specific, providing specific indicators per sector/industry. Moreover, each system has its own approach for sector and industry classification, resulting in a variation of sectors/industries considered in each system. The example of SASB accounting standards is presented in the Appendix D to explain the process of isolating only infrastructure-relevant topics.

[44] As part of the annex that provides examples per sector
[45] This aspect is to be further explored and is not included in the present high-level mapping.

The majority of the systems are infrastructure-relevant, therefore it is expected to be comparable to AISI. Infrastructure project relevance is further explored at the sustainability levels of (a) topic (b) indicator and (c) metric to enable detailed mapping.

Regarding system structure and content compatibility

The systems under review are structured in different ways, determined by the type of guidance they offer. The mapping exercise is based on AISI's structure of indicators and metrics grouped under sustainability topics, so each system is analyzed if:

(1) the system prescribes specific performance indicators and if/ how are these indicators grouped in topics.

(2) the system prescribes specific performance metrics.

The "structure compatibility diagram" shown below shows the terminology and structure of each system. The diagram/table identifies compatible and therefore comparable elements in the structure of all systems. The elements of each system that can be mapped to AISI's topics, indicators and metrics are presented in the Table.

Table 30: Basis for System Structure and Content Compatibility results

STRUCTURE COMPATIBILITY DIAGRAM					
AISI		**TOPICS**	**INDICATORS**	**METRICS**	
EU TAXONOMY (PHASE 1)		ENVIRONMENTAL OBJECTIVES		METRICS	& THRESHOLDS
EU NFRD		MATTERS	EXAMPLE KPIs & CLIMATE-RELATED KPIs		
EU SFDR	PRINCIPAL & ADDITIONAL ADVERSE IMPACTS	MATTERS	PRINCIPAL & ADDITIONAL ADVERSE SUSTAINABILITY IMPACT INDICATORS	METRICS (expressed in market value)	
5ISS PROTOTYPE		CORE ELEMENTS (of TCFD)	RECOMMENDED DISCLOSURES (including metrics)		
CDP	MODULES	TOPICS	QUESTIONS	RESPONSE OPTIONS	
CDSB			REPORTING REQUIREMENTS		
GRI	GRI SERIES	UNIVERSAL & SPECIFIC TOPICS	DISCLOSURES	REPORTING REQUIREMENTS	
<IR>		CONTENT	(GENERAL GUIDANCE ON		

		ELEMENTS	DISCLOSURES)		
SASB	SUSTAINABILITY DIMENSIONS	GENERAL ISSUE CATEGORIES (industry agnostic)	DISCLOSURE TOPICS (industry specific)	ACCOUNTING METRICS	
WEF IBC	DIMENSIONS	THEMES	DISCLOSURES & METRICS		
ISO TC322	N/A	N/A	N/A	N/A	N/A
IFRS	N/A	N/A	N/A	N/A	N/A
TCFD		CORE ELEMENTS	RECOMMENDED DISCLOSURES (including metrics)		
		CLIMATE-RELATED CATEGORIES	EXAMPLE METRICS		

Marked with gray are the equivalent –and therefore comparable– to AISI topics, indicators, and metrics, and outlines the detailed mapping exercise boundary. It is important to highlight that the detailed mappings are structured based on each system's structure compatibility, determining which information corresponds to AISI's topics, indicators, and metrics.

The table below summarizes the findings of the above high-level analysis of the 13 systems.

Table 31: Summary of findings of the systems high-level mapping

SYSTEMS	SCOPE COMPATIBILITY			EASE OF USE/ COMPACTNESS		INFRASTRUCTURE PROJECT RELEVANCE	STRUCTURE AND CONTENT COMPATIBILITY	
	Similar type of ESG guidance	E & S & G	Intended limited focus	No. of guidance documents & No.of Indicators	Direct connection to SDGs		Comparable structure (topics & indicators)	Prescription of metrics
EU Taxonomy				**X**		**X**		**X**
EU SFDR		**X**		**X**		**X**	**X**	
EU NFRD		**X**		**X**		**X**	**X**	**X**
5ISS prototype	**X**		**X**	N/A	N/A	**X**	**X**	**X**
CDP	**X**		**X**	**X**	**X**	**X**	**X**	**X**

CDSB			**X**			**X**		
GRI	**X**	**X**			**X**	**X**	**X**	**X**
<IR>				**X**				
SASB	**X**	**X**		**X**	**X**	**X**	**X**	**X**
WEF-IBC	**X**	**X**		**X**	**X**	**X**	**X**	**X**
ISO TC 322	**X**	**X**		N/A	N/A	**X**	N/A	N/A
IFRS				N/A	N/A		N/A	N/A
TCFD			**X**			**X**		**X**

One of the first findings is WEF-IBC's high relevance to AISI, as compared to the other ESG systems, justifying its selection as the first system for applying the detailed mapping methodology. SASB though it covers the main objectives is industry-specific, which differentiates it from AISI.

8. DETAILED MAPPING EXERCISE AND FINDINGS

8.1. Rationale for the exclusion of some systems from the detailed mapping

ISO TC322 & IFRS Standard - not complete tools: A criterion for determining the detailed mapping of AISI is the availability of data on the categories set by the system matrix and the analysis in sections 6.6.& 6.7. Two systems, the ISO TC322 Standards and the IFRS Standards do not allow a complete mapping because of lack of information. The two systems are under development with a long horizon for their completion and the up-to-date published information does not provide a clear definition on the categories of the present mapping methodology. Therefore the two systems were not included in the mapping exercise.

5ISS Sustainability-related Framework & Standard: The 'group of five' sustainability-related Framework & Standard does not have a final definitive form yet, and only the overall framework has been outlined in the published statement of intent in the illustrated prototype paper. The climate-related prototype of the Standard has been documented in more detail, including implementation guidance. However, it has been built upon the structure of the TCFD framework and disclosure recommendations and it has similar content to the supplementary guidance of TCFD (the example metrics). This overlap is justified since TCFD was built upon CDSB, CDP, GRI and SASB to develop its supplementary implementation guidance. More specifically, TCFD presents how its recommended disclosures are covered by CDP, GRI and CDSB and provides example metrics for non-financial sectors based on the CDP, GRI and SASB metrics.

Therefore and given that an AISI mapping against the 5ISS would not provide any additional insight than that of AISI's against TCFD, the focus was given to the individual systems that form the group of five, as

the 5ISS will build upon these existing systems. Two out of the five systems were selected for detailed mapping, GRI and SASB to provide further useful insight on a sustainability-related financial disclosure standard.

- GRI and SASB, along with CDP, are the only Standards within the 'group of five.' CDP was not selected for a detailed mapping due to its more narrow ESG focus and its climate change specificity. Moreover, its comprehensiveness in the specific topic of climate was considered not to allow comparability.
- The Sustainability-related prototype that has been announced by the group of five is expected to build upon GRI and SASB standards to implement its proposed framework.
- SASB & GRI are two of the most widely used standards, often used together by organizations.
- Both systems have a comparable structure and ESG focus to AISI.
- Finally, the two systems offer a different perspective of approach to materiality, allowing useful insights on AISI and its position to materiality.

EU Taxonomy - not an ESG reporting regulation. As already mentioned, the potential alignment of AISI with mandatory ESG reporting rules is one of the objectives of the mapping exercise, because of the important role regulations are expected to play in a changing ESG landscape. However, exploring AISI's alignment with the Taxonomy is not a valid exercise. The EU Taxonomy is a classification system of environmentally sustainable economic activities and not a standalone reporting rule or system. It sets screening criteria and Paris-aligned thresholds that activities have to comply with to be considered as environmentally sustainable, or 'Taxonomy-aligned'. The completed phase 1 tests activities for their contribution to climate change mitigation and adaptation and companies that fall within the scope of the NFRD have to report if they are Taxonomy-aligned. How and to what extent this information has to be disclosed is part of the NFRD and SFDR area of action. Though, as already commented the two rules are still in process of revision to align with the Taxonomy and the EU Sustainable Finance Action plan, they have included considerations of Taxonomy alignment, NFRD as part of its Supplemental guidance on climate-related disclosures in 2019 with new KPIs and SFRD in the recommendations for draft Regulatory Technical Standards,[46] both considered in the corresponding mappings. AISI against these regulatory reporting rules is feasible due to structural compatibility, taking advantage of example indicators these regulations have listed. Given that both systems are undergoing revision, this alignment can only be explored based on the provisional (up-to-date) form of the NFRD and SFDR.

[46] For example, in the draft RTS in addition to disclosing how the financial market participant has taken into account the indicators for adverse impact, the DNSH reporting must also show whether the investments are aligned with the OECD Guidelines for Multinational Enterprises and the UN Guiding Principles on Business and Human Rights, including the principles and rights set out in the eight fundamental conventions identified in the Declaration of the International Labour Organisation on Fundamental Principles and Rights at Work and the International Bill of Human Rights. The objective of this provision is to bring the DNSH disclosures under SFDR in line with the minimum safeguards in Article 18 of Regulation (EU) 2020/852 on the establishment of a framework to facilitate sustainable investment (hereinafter "the Taxonomy Regulation").

Table 32: Overview of the mappings performed

Overview of the mappings performed			
	ESG SYSTEM	**DETAILED MAPPING**	**NOTES**
1	**WEF-IBC**	X	Structural compatibility (themes- disclosures & metrics) allows for: - Indicator-level mapping - SDG mapping
2	**5ISS**	NO MAPPING	climate-related disclosures like TCFD mapping)?
2.1	**GRI**	X	Structural compatibility (topics - disclosures) allows for: - Indicator-level mapping - SDG mapping
2.2	**SASB**	X	Structural compatibility (general issue categories/ disclosure topics - accounting metrics) allows for: - Indicator-level mapping. - SDG mapping not performed. Note: SASB is industry-specific therefore prior to the mapping a selection based on infrastructure relevance was performed.
2.3	**CDP**	NO MAPPING	No detailed mapping because of CDP'S narrower scope and at the same time comprehensiveness in its specific topic (climate)
2.4	**CDSB**	NO MAPPING	No detailed mapping against framework is possible
2.5	**IR**	NO MAPPING	No detailed mapping against framework is possible
3	**TCFD**	X	Even though TCFD is a framework, TCFD alignment is critical for new standards as shown by current trends. Moreover, the supplemental implementation guidance provides example metrics that enable: - Disclosure-level mapping - Indicator-level mapping However, TCFD has a climate-specific focus therefore the detailed mapping is only against AISI's climate-related indicators.
4.1	**EU NFRD**	X	NFRD alignment is critical for new standards. Structural compatibility allows for: - Indicator-level mapping
4.2	**EU TAXONOMY**	NO MAPPING	Taxonomy is not a standalone reporting rule but rather a classification system that provides thresholds. Alignment with the Taxonomy regulation is not possible since AISI does not provide performance thresholds. Moreover, reporting on taxonomy-alignment which is a requirement for investors is integrated in NFRD and SFDR in the form of indicators.
4.3	**EU SFDR**	X	SFDR Alignment in terms of inclusion of recommended KPI and metrics
5	**ISO TC322**	NO MAPPING	not available information
6	**IFRS**	NO MAPPING	not available information

8.2. Detailed mapping methodology

Following the high-level mapping, the detailed mapping objectives for the comparisons between AISI and each compared system are the following:

a. investigate the structural alignment between AISI and the compared systems, considering their level of relevance with the E,S,G aspects
b. compare and assess how and in what degree they address the SDGs.
c. reveal the level of alignment between AISI's indicators and the respective indicators of each mapped system.
d. ~~h~~highlight omitted or additional information in AISI's content.

For the detailed mapping exercise, two different methodologies were applied based on the level of comparability of compared systems against AISI. The three Standards WEF, SASB and GRI, which are highly comparable to AISI, were mapped against AISI according to the same methodology. A different methodology was used for the mapping of the rest of the systems (TCFD, EUNFRD, EU SFDR) with low comparability (frameworks, guidelines, regulations respectively).

Table 33: Selected systems type and comparability level

SYSTEMS	TYPE OF GUIDANCE	COMPARABILITY
WEF-IBC	Standard	HIGH
SASB,	Combined Conceptual Frameworks & Standards	HIGH
GRI	Combined Conceptual Frameworks & Standards	HIGH
TCFD,	Reporting Framework	LOW
EU NFRD	Reporting Guidelines (with examples of key performance indicators	LOW
EU SFDR	ESG Regulations	LOW

For both methodologies, it was important to identify the comparable structural elements of each system in relation to the structure of AISI's content. This identification was based on the "structural compatibility table,"[47] which classifies compatible and therefore comparable elements of the ESG systems. As shown below, the elements of each system that can be mapped to AISI's topics, indicators and metrics are presented in the respective columns of the table.

Table 34: Selected systems structure compatibility diagram

[47] See Chapter 7: High-level mapping exercise and findings

STRUCTURE COMPATIBILITY					
AISI		**TOPICS**	**INDICATORS**	**METRICS**	
WEF IBC	DIMENSIONS	THEMES	DISCLOSURES & METRICS		
GRI	GRI SERIES	UNIVERSAL & SPECIFIC TOPICS	DISCLOSURES	REPORTING REQUIREMENTS	
SASB	SUSTAINABILITY DIMENSIONS	GENERAL ISSUE CATEGORIES (industry agnostic)	DISCLOSURE TOPICS (industry specific)	ACCOUNTING METRICS	
TCFD		CORE ELEMENTS	RECOMMENDED DISCLOSURES (including metrics)		
		CLIMATE-RELATED CATEGORIES	EXAMPLE METRICS		
EU NFRD		MATTERS	EXAMPLE KPIs & CLIMATE-RELATED KPIs		
EU SFDR		MATTERS	PRINCIPAL & ADDITIONAL ADVERSE SUSTAINABILITY IMPACT INDICATORS	METRICS (expressed in market value)	
EU TAXONOMY		ENVIRONMENTAL OBJECTIVES		METRICS	& THRESHOLDS

Marked with gray are the equivalent –and therefore comparable– to AISI topics, indicators, and metrics, and outlines the detailed mapping exercise boundary.

Methodology for Standards detailed mapping

To address the aforementioned mapping objectives, it was decided to initially develop a detailed mapping methodology for the most comparable to AISI system among the three standards. This methodology would then properly be adjusted according to each Standard's singular features and degree of comparability to AISI, to become applicable for all Standards' detailed mapping against AISI.

The interpretation of the high-level mapping results (see Table 31) indicates that the system of the World Economic Forum's (WEF) and International Business Council's (IBC)'s "ESG Reporting Metrics and Disclosure Standards" was closer to AISI, allowing the detailed mapping methodology to its full extent. It was selected for the initial "prototype" mapping because:

- it is a completed tool,
- has a comparable structure,
- it is a cross-industry tool (not industry-specific)
- it prescribes specific metrics to measure performance,
- it has not an exhaustive list of indicators,
- it is easy to use, one- guidance document tool,
- it covers all ESG aspects, and
- it demonstrates alignment to SDGs within the guidance document.

According to the methodology that was applied for WEF's mapping against AISI, several individual mappings and comparisons were performed to draw conclusions on the aforementioned mapping objectives. These are shown in the following table:

Table 35: Objectives of individual performed mappings

Mappings performed	Objectives of detailed mapping exercise for Standards
E,S,G mapping	Investigate the structural alignment, considering their level of relevance with the E,S,G aspects
SDG-based mapping	Compare and assess how and to what degree they address the SDGs
Indicator-based mapping	Reveal the level of alignment between AISI's content and the compared systems
	Highlight omitted or additional information in AISI's content

After performing the initial detailed mapping of WEF against AISI, it was observed that the developed methodology was applicable for all the ESG systems based on Standards (WEF, GRI, SASB).

The individual mapping performed between WEF and AISI is described below and represents the methodology for the mapping of GRI and SASB as well.

E,S,G mapping:

Initially, the two systems were compared in terms of their structural alignment by **mapping the topics of WEF against AISI's themes**. Each system's topics were classified according to the ESG areas. For AISI's indicators classification, the meaning and scope of indicators were considered. This mapping revealed basic similarities and differences on how the two systems' topics and themes address the E,S,G.

Next, the two systems were compared on the **E,S,G** across their number of indicators, based on **each system's analysis**. This comparison showed the percentage of indicators addressing each of the E,S,G to assess to what degree these areas are addressed by each system. Furthermore, the type of indicator was introduced as information to observe the balance between process-based and quantitative indicators per E,S,G area for both systems.

SDG-based mapping

To address how each system relates to the SDGs, we proceeded with the mapping at the Sustainability Topics Level. The topics of AISI and the themes of WEF were thereupon mapped against each SDG (SDG-based mapping).

Indicator- based mapping

After the comparison and mapping based on the ESG and the SDGs, the mapping continued with the indicator-based mapping. The aim was to assess the degree of relevance between the two systems in terms of content and to highlight omitted or additional information in AISI's content. So, the mapping was based on the structure of AISI's topics and indicators. The contents of WEF (topics and metrics/disclosures) are reorganized following AISI's structure to reveal similarities, differences and highlight omissions.

The indicator-based mapping of the standards revealed several types of relevance between AISI indicators and the linked indicators of each system. These types were classified under five alignment levels as described below:

- FULL COVERAGE
- HIGH COVERAGE
- PARTIAL COVERAGE
- LOW COVERAGE
- NO COVERAGE

Table 36: Alignment levels considerations and assumptions for standards detailed mapping

LEVEL	DESCRIPTION	CASES OF RELEVANCE
1. FULL	A full coverage of an AISI's indicator is observed **when its scope is covered by one indicator** of the mapped standard, regardless of the total number of the standard's metrics and disclosures linked to it (based on their common scope). In such a case, the full alignment becomes more evident with a slight adjustment of the mapped system's disclosures/ metrics narratives to be applicable in infrastructure projects.	
2. HIGH	An AISI indicator is highly covered by the mapped standard when the indicator **is related to and covered to a high degree by a group of the standard's indicators**, considering its scope and its required evidence (based on AISI's respective	**2a) AISI indicator has a wider scope than the mapped standard's group:** The case where **AISI's indicator is covered by multiple indicators due to its broader scope** compared to each one of them. The high correlation between the indicator and the group of the mapped system's indicators is more evident

	description content). Two cases of high coverage are identified after the detailed mapping:	when WEF's indicators narratives are properly customized to be applied in infrastructure projects
		2b) AISI indicator has an extensive list of evidence (more comprehensive type of indicator): The case where **AISI's indicator is covered by multiple indicators of the mapped standard due to its extensive list of required evidence (in the "description" paragraph of AISI's indicator).** It is probable that due to their broader scope, the linked indicators of the mapped standard may also be linked to other AISI indicators. This explains why some of the standards' indicators appear linked to more than one AISI indicators.
3. PARTIAL	An AISI indicator is partly covered by the standard when the indicator **is related to but not adequately covered by one or more of the mapped standard's indicators**, considering its scope and its required evidence (based on AISI's respective description content). Three cases of high coverage are identified after the detailed mapping:	**3a) AISI indicator has a wider scope than mapped standard's group** When AISI's indicator is **related to a group of mapped standard's indicators**, considering its scope and its required evidence (based on AISI's respective description content). However, **due to its wider scope,** the indicator is not adequately covered by the mapped standard's group of linked indicators.
		3b) the standard's indicators have a wider scope than AISI's indicator When AISI indicator is related to **one or more of the mapped standard's indicators** based on their similar scope and is **partly** covered by one or more of them **due to their wider scope** and/or has a different approach or methodology in addressing the issue. In this case the standard may include additional metrics/disclosures to address the indicator (which are not mentioned in AISI)
		3c) One-to one incompatibility When the AISI indicator is partially covered by **one indicator of the mapped standard.** In this case, it cannot be highly covered because **the standard either has a broader scope** or **it cannot be directly applied to an infrastructure project.** It is probable that due to its broader scope, the linked indicator of the standard may also be linked to other AISI indicators.
4. LOW	An AISI indicator can be related to **a group of the mapped standard's indicators** only because they address the	

	same sustainability theme. They cannot be directly comparable due to different focus of systems (project focus vs. company focus).	
5. NONE	There is no indicator in the standard to relate to AISI's indicator	

Methodology of detailed mapping for Frameworks and Regulations[48]

The detailed mapping of the Frameworks and Guidelines followed the opposite direction, i.e., mapping of AISI's content against the Frameworks and Regulation's structure. This enabled an assessment of the degree that AISI addresses and covers obligatory or highly recognized guidelines included in the compared systems.

The individual mappings that were performed for Standards were not all applicable for Frameworks and Regulations and as a result the mapping included in this methodology was the indicator-based mapping.

The following table presents the overall applicability of individual mappings:

Table 37: Overall applicability of individual mappings

		DETAILED MAPPINGS APPLICABILITY		
		E,S,G MAPPING	SDG MAPPING	INDICATOR-BASED MAPPING
STANDARDS	WEF-IBC	X	X	X
	GRI	X	X	X
	SASB	X		X
FRAMEWORKS / REGULATIONS	TCFD			X
	EU NFRD			X
	EU SFDR			X

The degree of the Frameworks and Regulations content coverage by AISI is expressed by the following three levels of alignment:

Table 38: Levels of alignment of AISI with Frameworks and Regulations

LEVEL	DESCRIPTION
1. HIGH	High alignment is observed when the framework/regulation recommended disclosure or metric are fully

[48] The Frameworks, Guidelines and Regulations systems included in the detailed mapping will be from now on referred to as "Frameworks and Regulations" in this chapter.

	addressed and covered by one or more indicators/metrics of AISI. In some cases, high alignment is considered even when the mapped indicators are not expressed in identical metric units, however the metric provided by AISI can further be elaborated by the user and translated into the required metric.
2. PARTIAL	Partial alignment is observed when not all details from the guidance description of the framework/ regulations's recommended disclosures or metrics are required by AISI's linked indicators/metrics
3. NONE	No alignment is observed when a disclosure/ metric of the framework/regulation is not addressed by any of AISI's indicators

8.3. AISI-WEF IBC detailed mapping findings

Structure Compatibility

AISI		**TOPICS**	**INDICATORS**	**METRICS**
WEF IBC	DIMENSIONS	THEMES	DISCLOSURES & METRICS	

Systems structure relevance with respect to E,S,G

Each of WEF's themes are by default associated to ESG areas (according to the pillar they belong to) except for those under the pillar "PROSPERITY". For the needs of the mapping exercise, these themes and corresponding indicators have been considered to address the social (S) aspects of E,S,G. As for AISI's topics, the assigned E,S,G correspond to their respective indicators meaning and scope. It should be noted here that in WEF's framework, themes and metrics/disclosures related to stakeholder engagement are by default included in the governance aspect (G), whereas in AISI, the relevant indicators have been considered to address the social aspect (S) of E,S,G. This mapping revealed basic similarities and differences on how the two systems' topics and themes address the E,S,G.

The table below shows the result of the **AISI Topics/ WEF IBC Themes mapping**. As shown in the table, all environmental topics of WEF are linked directly to environmental themes of AISI. The governance topics of AISI are mainly covered by governance themes of WEF, with some exceptions of Social themes linked to them. The "Procurement" Process does not appear to be addressed by any of WEF's themes and therefore is not linked to any of each theme. The social topics of AISI are linked to a combination of social and governance themes of WEF.

Table 39: AISI -WEF Themes and topics mapping with respect to E,S,G

AISI	WEF

SUSTAINABILITY TOPICS	THEMES
Option Assessment	Governing purpose
	Risk and opportunity oversight
Project Sustainability Management	Quality of governing body
	Risk and opportunity oversight
	Governing purpose
Gender	Dignity and equality
	Quality of governing body
Resilience	Risk and opportunity oversight
	Climate change
	Risk and opportunity oversight
Stakeholder Engagement	Quality of governing body
	Stakeholder engagement
Water	Freshwater availability
Energy / GHG	Climate change
Materials lifecycle approach	Resource availability
	Solid waste
Air Quality	Air pollution
Biodiversity	Nature loss
Sustainability Management System	Dignity and equality
Anti-corruption	Ethical behaviour
	Community and social vitality
Project Procurement	N/A
Working Conditions	Dignity and equality
	Health and well-being
	Employment and wealth generation
Service Affordability	N/A

ENVIRONMENTAL SOCIAL GOVERNANCE

Table 40: AISI -WEF Indicators per E,S,G aspect

	AISI		WEF	
E,S,G aspects	No of Indicators	% of Indicators	No of Indicators	% of Indicators
ENVIRONMENTAL INDICATORS	10	36%	16	29%
SOCIAL INDICATORS	12	43%	27	49%
GOVERNANCE INDICATORS	6	21%	12	22%
TOTAL	**28**		**55**	

As shown in the above table, the proportion of indicators addressing ESG themes is similar in both frameworks. Most indicators address social aspects (43% for AISI and 49% for WEF). The second area of E,S,G addressed with a high number of indicators for both systems is the E area of ESG (with 36% of AISI's indicators and 29% of WEF's). The Governance aspects are addressed through fewer indicators for both systems (21% for AISI, 22% for WEF).

Table 41: Indicator type per E,S,G (AISI)

AISI				
	No of process-based	No of quantitative	% of process-based	% of quantitative
ENVIRONMENTAL INDICATORS	2	7	22%	78%
SOCIAL INDICATORS	7	5	58%	42%
GOVERNANCE INDICATORS	6	1	86%	14%
TOTAL	**15**	**13**	**54%**	**46%**

Table 42: Indicator type per E,S,G (WEF)

WEF							
	No of process-based	No of quantitative	both		% of process-based	% of quantitative	% of "both"
ENVIRONMENTAL INDICATORS	5	9	2		31%	56%	13%
SOCIAL INDICATORS	3	19	5		11%	70%	19%
GOVERNANCE INDICATORS	10	1	1		83%	8%	8%
TOTAL	**18**	**29**	**8**		**33%**	**53%**	**15%**

Main observations regarding the balance of quantitative vs process-based indicators per E,S,G:

- AISI's majority of indicators are process-based (54%) whereas WEF's majority of indicators are quantitative (53% plus a part of the indicators under the "both" type "both"),
- in the environmental category both systems have more quantitative indicators,

- in the Social category, AISI has more process-based indicators, whereas WEF has more quantitative indicators,
- In the Governance category AISI has only one quantitative indicator (related to cybersecurity) whereas WEF has 2 (1 is part of the "both" type).

SDG-based mapping results

Although AISI's indicators have a direct connection to several SDGs, WEF does not present a direct connection at the level of indicators. It rather mentions which SDGs are addressed by a group of topics that belong to one pillar. In order to investigate in more detail the way SDGs are addressed by each system, it was decided to do the mapping at the Sustainability Topics Level.

Table 43: AISI -WEF SDG - Based Mapping results

SDG's		AISI TOPICS	WEF THEMES
SDG1	Goal 1. End poverty in all its forms everywhere	Stakeholder Engagement	Dignity and equality
			Employment and wealth generation
SDG2	Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture	N/A	N/A
SDG3	Goal 3. Ensure healthy lives and promote well-being for all at all ages	Stakeholder Engagement	Health and well-being
		Air Quality	
		Biodiversity	
SDG4	Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	Biodiversity	Skills for the future
SDG5	Goal 5. Achieve gender equality and empower all women and girls	Gender	Dignity and equality
SDG6	Goal 6. Ensure availability and sustainable management of water and sanitation for all	Option Assessment	Freshwater availability
		Water	Water pollution
		Biodiversity	
SDG7	Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all	Air Quality	Climate change
		Energy / GHG	Resource availability
SDG8	Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	Sustainable Supply Chain	Dignity and equality
		Working Conditions	Employment and wealth generation
SDG9	Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	Option Assessment	Innovation of better products and services
		Resilience	
		Energy / GHG	
		Project Procurement	
		Service Affordability	

SDG10	Goal 10. Reduce inequality within and among countries	Stakeholder Engagement	Dignity and equality
		Anti-corruption	Community and social vitality
		Working Conditions	
SDG11	Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable	Resilience	**N/A**
		Stakeholder Engagement	
		Materials lifecycle approach	
		Air Quality	
		Biodiversity	
		Project procurement	
SDG12	Goal 12. Ensure sustainable consumption and production patterns	Materials lifecycle approach	Governing purpose
		Sustainable Supply chain	Risk and opportunity oversight
		Project procurement	Climate change
			Nature loss
			Solid waste
			Resource availability
SDG13	Goal 13. Take urgent action to combat climate change and its impacts	Resilience	Climate change
		Energy / GHG	Air pollution
		Materials lifecycle approach	Solid waste
SDG14	Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development	Water pollution	Water pollution
		Materials lifecycle approach	
		Ecosystem and land use	
SDG15	Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	Biodiversity	Nature loss
SDG16	Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	Stakeholder Engagement	Quality of governing body
		Anti-corruption	Ethical behaviour
SDG17	Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development	Stakeholder Engagement	Governing purpose
		Sustainable Supply chain	Stakeholder engagement
			Risk and opportunity oversight

The above table shows that SDG 2 is not covered by any of the systems, while SDG 11 is not covered by WEF.

Indicator-based mapping results

The following table shows the specific links between AISI's indicators (accompanied with metrics) and WEF's metrics/disclosures.

Table 44: Mapping of WEF IBC's metrics/disclosures against AISI

AISI			WEF	
TOPICS	**INDICATORS**	**METRIC**	**THEMES**	**METRICS AND DISCLOSURES**
Option Assessment	Strategic options assessment	Existence of a strategic options assessment	**Governing purpose**	Setting purpose
		N/A		Purpose-led management
		N/A	**Risk and opportunity oversight**	Integrating risk and opportunity into business process
		N/A		Economic, environmental and social topics in capital allocation framework
Project Sustainability Management	Sustainability management system	Implementation of a sustainable management system and reporting	**Quality of governing body**	Governance body composition
				Progress against strategic milestones
			Risk and opportunity oversight	Integrating risk and opportunity into business process
				Economic, environmental and social topics in capital allocation framework
			Governing purpose	Purpose-led management
Gender	Gender equality, inclusiveness and empowerment	Existence and Implementation of a comprehensive gender action plan (GAP).	**Dignity and equality**	Diversity and inclusion (%)
				Pay equality (%)
				Wage level (%)
				Pay gap (%, #)
				Discrimination and harassment incidents (#) and the total amount of monetary losses ($)
			Quality of governing body	Governance body composition
Resilience	Climate Risk Resilience	Implementation of a climate risk adaptation plan	**Risk and opportunity oversight**	Integrating risk and opportunity into business process

					Economic, environmental and social topics in capital allocation framework
				Climate change	TCFD Implementation
	Cybersecurity resilience	Number of system vulnerabilities identified affecting infrastructure's critical assets or processes		**Risk and opportunity oversight**	Integrating risk and opportunity into business process
Stakeholder Engagement	Stakeholder engagement plan	Existence of a meaningful and inclusive stakeholder engagement process and plan.		**Quality of governing body**	Governance body composition
				Stakeholder engagement	Material issues impacting stakeholders
	Free, Prior and Informed Consent (FPIC)	Obtaining of Free, Prior and Informed Consent (FPIC)			
	Involuntary Resettlement	People involuntarily displaced by the project			
	Heritage assessment	Existence of adequate cultural heritage protection measures			
	Public health and safety management plan	Implementation of a public health and safety management plan			
Water	Freshwater withdrawal	Annual volume of fresh water used by the infrastructure project		**Freshwater availability**	Water consumption and withdrawal in water-stressed areas
		N/A			Impact of freshwater consumption and withdrawal
Energy / GHG	GHG emissions (construction & operation)	Volume of Greenhouse gas emissions emitted by the project		**Climate change**	Greenhouse gas (GHG) emissions
		N/A			TCFD Implementation
		N/A			Paris-aligned GHG emissions targets
		N/A			Impact of GHG emissions
	Efficient use of energy	Amount of energy consumed by the project		**N/A**	**N/A**

Materials lifecycle approach	Materials lifecycle thinking	Consideration of materials lifecycle impacts		**Resource availability**	Resource circularity
	Reduction of Waste	Percentage of total waste diverted from incineration and landfills			
		N/A		**Solid waste**	Single-use plastics
		N/A			Impact of solid waste disposal
Air Quality	Fine particulate matter emission	Mean PM2.5 and PM10 emissions		**Air pollution**	Air pollution
		N/A			Impact of air pollution
Biodiversity	Threatened species	Number of Aquatic and Terrestrial Species Impacted (Fauna and Flora)		**Nature loss**	Land use and ecological sensitivity
		N/A		**Nature loss**	Land use and ecological sensitivity
	Watershed Management	Existence of an Integrated Watershed Assessment and Management Program		**N/A**	**N/A**
	Previously Disturbed Land	Percentage of land used by the project that has been previously disturbed or maintained as non-disturbed		**Nature loss**	Impact of land use and conversion
Sustainability Management System	Project supply chain sustainability	Existence of a sustainable procurement plan and compliance monitoring		**Dignity and equality**	Risk for incidents of child, forced or compulsory labour
					Human rights review, grievance impact & modern slavery (#, %)
Anti-corruption	Anti-corruption program	Implementation of an anti-corruption program		**Ethical behaviour**	Anti-corruption
		N/A			Protected ethics advice and reporting mechanisms
		N/A			Alignment of strategy and policies to lobbying
		N/A			Monetary losses from unethical behaviour

		N/A		**Community and social vitality**	Total tax paid
		N/A			Total Social Investment ($)
		N/A			Additional tax remitted
		N/A			Total tax paid by country for significant locations
Project Procurement	Sustainability in project award	Integration of the AISI in project tender process		N/A	N/A
Working Conditions	Labor rights	Integration of International Labour Organisation's (ILO) fundamental conventions		**Dignity and equality**	Diversity and inclusion (%)
					Freedom of association and collective bargaining at risk (%)
					Human rights review, grievance impact & modern slavery (#, %)
					Risk for incidents of child, forced or compulsory labour
					Discrimination and harassment incidents (#) and the total amount of monetary losses ($)
	Occupational Health & Safety (OH&S) Management Systems	Implementation of a Comprehensive OH&S Management System		**Health and well-being**	Health and safety (%)
	Frequency rates of fatal and non-fatal occupational injuries	Number of fatal and non-fatal occupational injuries			Employee well-being (#, %)
		N/A			Monetized impacts of work-related incidents on organization (#, $)
	Fair Wages	Percentage of employees who are paid a fair wage		**Dignity and equality**	Pay equality (%)
					Wage level (%)
					Pay gap (%, #)
		N/A			Living wage (%)

	Local jobs created	Number of direct local jobs created during construction and operation		**Employment and wealth generation**	Absolute number and rate of employment
Service Affordability	Affordability of infrastructure services	Ability to pay (ATP) of project beneficiaries		**N/A**	**N/A**

This basic mapping exercise revealed a number of WEF's metrics/disclosures, which could not be linked to any of AISI's indicators and therefore these correspond to WEF's additional metrics and disclosures:

Table 45: WEF additional metrics/disclosures

WEF THEMES	WEF METRICS AND DISCLOSURES	CORE/EXPANDED
Quality of governing body	Remuneration	E
Employment and wealth generation	Economic contribution	C
	Financial investment contribution	C
	Infrastructure investments and services supported	E
	Significant indirect economic impacts	E
Innovation of better products and services	Total R&D expenses ($)	C
	Social value generated (%)	E
	Vitality Index	E
Skills for the future	Training provided (#, $)	C
	Number of unfilled skilled positions (#, %)	E
	Monetized impacts of training – Increased earning capacity as a result of training intervention (%, $)	E
Water pollution	Nutrients	E
	Impact of water pollution	E

Table 46: WEF metrics & disclosures not included in AISI linked indicators

ASSI INDICATORS	WEF METRICS AND DISCLOSURES
Strategic options assessment	Purpose-led management
	Integrating risk and opportunity into business process
	Economic, environmental and social topics in capital allocation framework

Freshwater withdrawal	Impact of freshwater consumption and withdrawal
GHG emissions (construction & operation)	TCFD Implementation
	Paris-aligned GHG emissions targets
	Impact of GHG emissions
Reduction of Waste	Single-use plastics
	Impact of solid waste disposal
Fine particulate matter emission	Impact of air pollution
Threatened species	Land use and ecological sensitivity
Anti-corruption program	Protected ethics advice and reporting mechanisms
	Alignment of strategy and policies to lobbying
	Monetary losses from unethical behaviour
	Total tax paid
	Total Social Investment ($)
	Additional tax remitted
	Total tax paid by country for significant locations
Frequency rates of fatal and non-fatal occupational injuries	Monetized impacts of work-related incidents on organization (#, $)
Fair Wages	Living wage (%)

The results of the Indicator-based mapping with respect to the alignment levels mentioned previously are summarized in the following table:

Table 47: AISI-WEF Indicator-based mapping results

AISI INDICATORS	No of linked METRICS/DISCLOSURES (of WEF)	RELEVANCE TO WEF	
		type of relevance	LEVEL
1 Strategic options assessment	4	4	LOW
2 Sustainability Management System	5	2a	HIGH
3 Gender equality, inclusiveness and empowerment	6	2b	HIGH
4 Climate Risk Resilience	3	3a	PARTIAL
5 Cybersecurity resilience	1	3c	PARTIAL
6 Stakeholder engagement plan	2	2a	HIGH
7 Free, Prior and Informed Consent (FPIC)	1	3c	PARTIAL
8 Involuntary Resettlement	1	3c	PARTIAL
9 Heritage assessment	1	3c	PARTIAL
10 Public health and safety management plan	1	3c	PARTIAL
11 Freshwater withdrawal	2	1	FULL
12 GHG emissions (construction & operation)	4	3b	PARTIAL

13 Efficient use of energy	0	5	NONE
14 Materials lifecycle thinking	1	2a	HIGH
15 Reduction of Waste	3	3b	PARTIAL
16 Fine particulate matter emission	2	1	FULL
17 Threatened species	2	3b	PARTIAL
18 Watershed Management	0	5	NONE
19 Previously Disturbed Land	1	3c	PARTIAL
20 Project supply chain sustainability	2	3a	PARTIAL
21 Anti-corruption program	8	1	FULL
22 Sustainability in project award	0	5	NONE
23 Labor rights	5	3a	PARTIAL
24 Occupational Health & Safety (OH&S) Management Systems	2	3b	PARTIAL
25 Frequency rates of fatal and non-fatal occupational injuries	2	2a	HIGH
26 Fair Wages	4	2a	HIGH
27 Local jobs created	1	3c	PARTIAL
28 Affordability of infrastructure services	0	5	NONE

Observations regarding the number of linked metrics/disclosures per AISI indicator:

- The majority of AISI's indicators (55%) are linked to 1 or 2 of WEF's metrics/disclosures.
- 1% of the indicators are covered by 3-8 metrics/disclosures of WEF
- 4 AISI indicators (14%) have no alignment with WEF's metrics/disclosures

Observations regarding the levels of alignment per AISI indicator:

- 50 % of AISI's indicators are partially covered by WEF's metrics and disclosures
- There are 4 indicators (14%) that are not related to any of WEF's metrics/disclosures (no level of alignment
- 32% of the indicators are highly or fully covered,
- Only 1 out of the 28 total indicators have low coverage
- The most common type of relevance between an AISI indicator and WEF's metrics/disclosures is type 3c, i.e. the case where and AISI indicator is linked to one WEF metric/disclosure and can only be partially covered either because WEF has a broader scope or because it cannot be directly applied to an infrastructure project.

8.4. AISI-GRI detailed mapping findings

The detailed mapping methodology is applicable in the case of the GRI Standards. It is a cross-industry reporting standard, covering all E,S,G aspects and has a comparable to AISI structure.

Structure Compatibility

AISI		TOPICS	INDICATORS	METRICS
GRI	GRI SERIES	UNIVERSAL & SPECIFIC TOPICS	DISCLOSURES	REPORTING REQUIREMENTS

Systems structure relevance with respect to E,S,G

The table below shows the result of the **AISI Topics/ GRI Topics (Universal & specific) mapping**. As shown, of the three ESG topic categories, the environmental topics of the two systems are more directly linked. The governance topics of AISI are mainly covered by the universal topics of GRI that refer to organization-related management practices, with some cases of social topics linked to them. The "Procurement Process" does not appear to be addressed by any of GRI's topics. The social topics of AISI are linked to a combination of social and governance topics of GRI.

Table 48: AISI -GRI Topics mapping with respect to E,S,G

AISI	GRI	
SUSTAINABILITY TOPICS	TOPICS	
Option Assessment	GOV	Governance
	RBC	Responsible business conduct
Project Sustainability Management	RBC	Responsible business conduct
	GOV	Governance
	MT	Reporting on material topics
	REP	Organizational details and reporting practices
	GOV	Governance
	307	Environmental Compliance
	419	Socioeconomic Compliance
	413	Local Communities
Gender	413	Local Communities
	405	Diversity and Equal Opportunity
	202	Market Presence
	406	Non-discrimination
	ACT	Organizational activities
	401	Employment
	403	Occupational Health and Safety
	404	Training and Education
	GOV	Governance
Resilience	201	Economic Performance
Stakeholder Engagement	GOV	Governance
	SE	Stakeholder Engagement
	413	Local Communities
	207	Tax
	411	Rights of Indigenous Peoples

	RBC	Responsible business conduct
	416	Customer Health and Safety
Water	303	Water and Effluents
Energy / GHG	305	Emissions
	302	Energy
Materials lifecycle approach	306	Waste
	301	Materials
Air Quality	305	Emissions
Biodiversity	304	Biodiversity
	303	Water and Effluents
Sustainable Supply chain	ACT	Organizational activities
	308	Supplier Environmental Assessment
	414	Supplier Social Assessment
	408	Child Labor
	409	Forced or Compulsory Labor
Anti-corruption	205	Anti-corruption
	206	Anti-competitive Behavior
	GOV	Governance
Project Procurement	N/A	
Working Conditions	412	Human Rights Assessment
	410	Security Practices
	407	Freedom of Association and Collective Bargaining
	SE	Stakeholder engagement
	406	Non-discrimination
	401	Employment
	403	Occupational Health and Safety
	201	Economic Performance
	203	Indirect Economic Impacts
	202	Market Presence
	204	Procurement Practices
	GOV	Governance
	RBC	Responsible Business Conduct
Service Affordability	203	Indirect Economic Impacts
	303	Water and Effluents

ENVIRONMENTAL SOCIAL GOVERNANCE

Table 49: AISI - GRI Indicators per E,S,G aspect

	AISI		GRI	
E,S,G aspects	No of Indicators	% of Indicators	No of Disclosures	% of Disclosures

ENVIRONMENTAL INDICATORS	9	32%	32	28%
SOCIAL INDICATORS	12	43%	40	35%
GOVERNANCE INDICATORS	7	25%	35	36%
TOTAL	**28**		**107**	

As shown in the above table, the quantity of indicators in the two systems, as an absolute number, is not comparable, with GRI including 4-times the no. of AISI indicators. This is due to AISI's selection of a more comprehensive type of indicators to address topics as compared to GRI (e.g. indicators than refer to programs, management systems, action plans etc). However, if compared as percentages, the proportion of indicators per ESG theme is more equally balanced in GRI. In GRI the majority of indicators address social and governance and in AISI social aspects. The two systems have a more similar percentage in indicators that address environmental issues, while governance indicators in GRI are significantly higher as a percentage in GRI.

Table 50: Indicator type per E,S,G (AISI)

AISI				
	No of process-based	No of quantitative	% of process-based	% of quantitative
ENVIRONMENTAL INDICATORS	2	7	22%	78%
SOCIAL INDICATORS	7	5	58%	42%
GOVERNANCE INDICATORS	6	1	86%	14%
TOTAL	**15**	**13**	**54%**	**46%**

Table 51: Indicator type per E,S,G (GRI)

GRI						
	No of process-based	No of quantitative	both	% of process-based	% of quantitative	% of "both"
ENVIRONMENTAL INDICATORS	4	25	3	13%	78%	9%
SOCIAL INDICATORS	14	21	5	35%	53%	9%
GOVERNANCE INDICATORS	21	4	10	60%	11%	29%
TOTAL	**39**	**50**	**18**	**36%**	**47%**	**17%**

Main observations regarding the balance of quantitative vs process-based indicators per E,S,G:

- AISI's majority of indicators are process-based (54%) while GRI's majority of indicators are quantitative (47% plus the disclosures that include both quantitative and qualitative reporting requirements)
- In the Environmental category both systems have significantly higher percentage of quantitative indicators as compared to the others

- In the Social category, AISI has more process-based indicators, while GRI has more quantitative disclosures and associated reporting requirements (also result of the AISI'S more comprehensive type of indicators and associated metrics)
- In the Governance category AISI has only one quantitative indicator while GRI has 14 (10 as part of the both qualitative and quantitative disclosures)

SDG-based mapping results

Table 52: AISI-GRI SDG Mapping

SDGs		AISI INDICATORS	GRI DISCLOSURES	
SDG1	End poverty in all its forms everywhere	7 Free, Prior and Informed Consent (FPIC)	202	Market Presence
		8 Involuntary Resettlement	203	Indirect Economic Impacts
			207	Tax
SDG2	End hunger, achieve food security and improved nutrition and promote sustainable agriculture	N/A	411	Rights of Indigenous Peoples
			413	Local Communities
SDG3	Ensure healthy lives and promote well-being for all at all ages	10 Public health and safety management plan	203	Indirect Economic Impacts
		16 Fine particulate matter emission	305	Emissions
		18 Watershed Management	306	Waste
			401	Employment
			403	Occupational Health and Safety
SDG4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	18 Watershed Management	404	Training and Education
SDG5	Achieve gender equality and empower all women and girls	3 Gender equality, inclusiveness and empowerment	102	GOV-1 Governance structure and composition
			102	GOV-2 Nomination and selection of the highest governance body
			202	Market Presence
			203	Indirect Economic Impacts
			401	Employment
			404	Training and Education
			405	Diversity and Equal Opportunity
			406	Non-discrimination
			414	Supplier Social Assessment
SDG6	Ensure availability and sustainable management of water and sanitation for all	1 Strategic options assessment	303	Water and Effluents
		11 Freshwater withdrawal	304	Biodiversity
		18 Watershed Management	306	Waste
SDG7	Ensure access to affordable, reliable,	13 Efficient use of energy	302	Energy

	sustainable and modern energy for all	16 Fine particulate matter emission		
SDG8	Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	20 Project supply chain sustainability management	102	ACT-2 Employees and other workers
		24 Occupational Health & Safety (OH&S) Management Systems	102	SE-2 Collective bargaining agreements
		25 Frequency rates of fatal and non-fatal occupational injuries	201	Economic Performance
		26 Fair Wages	202	Market Presence
		27 Local jobs created	203	Indirect Economic Impacts
			204	Procurement Practices
			301	Materials
			302	Energy
			401	Employment
			402	Labor/Management Relations
			403	Occupational Health and Safety
			404	Training and Education
			405	Diversity and Equal Opportunity
			406	Non-discrimination
			407	Freedom of Association and Collective Bargaining
			408	Child Labor
			409	Forced or Compulsory Labor
			414	Supplier Social Assessment
SDG9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	1 Strategic options assessment	201	Economic Performance
		4 Climate Risk Resilience	203	Indirect Economic Impacts
		5 Cybersecurity resilience		
		12 GHG emissions		
		22 Sustainability in project award		
		28 User affordability		
SDG10	Reduce inequality within and among countries	7 Free, Prior and Informed Consent (FPIC)	102	ACT-2 Employees and other workers
		21 Anti-corruption program	207	Tax
		26 Fair Wages	401	Employment
			404	Training and Education
			405	Diversity and Equal Opportunity
SDG11	Make cities and human settlements inclusive, safe, resilient and sustainable	4 Climate Risk Resilience	203	Indirect Economic Impacts
		9 Heritage assessment	306	Waste
		14 Materials lifecycle thinking		
		15 Reduction of Waste		

		16 Fine particulate matter emission		
		19 Previously Disturbed Land		
		22 Sustainability in project award		
SDG12	Ensure sustainable consumption and production patterns	14 Materials lifecycle thinking	301	Materials
		15 Reduction of Waste	302	Energy
		20 Project supply chain sustainability management	305	Emissions
		22 Sustainability in project award	306	Waste
			417	Marketing and Labeling
SDG13	Take urgent action to combat climate change and its impacts	4 Climate Risk Resilience	201	Economic Performance
		12 GHG emissions	302	Energy
		14 Materials lifecycle thinking	305	Emissions
SDG14	Conserve and sustainably use the oceans, seas and marine resources for sustainable development	15 Reduction of Waste	304	Biodiversity
		17 Threatened species	305	Emissions
		18 Watershed Management		
SDG15	Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	17 Threatened species	304	Biodiversity
		18 Watershed Management	305	Emissions
		19 Previously Disturbed Land		
SDG16	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	6 Stakeholder engagement plan	102	GOV-1 Governance structure and composition
		7 Free, Prior and Informed Consent (FPIC)	102	GOV-2 Nomination and selection of the highest governance body
		21 Anti-corruption program	102	GOV-3 Responsibilities for sustainable development topics and delegation
			102	GOV-4 Stakeholder consultation on sustainable development topics
			102	GOV-7 Role of the highest governance body in setting purpose, values, and strategy
			102	GOV-10 Identification and management of impacts
			102	RBC-5 Mechanisms for seeking advice and raising concerns
			205	Anti-corruption
			206	Anti-competitive Behavior
			307	Environmental Compliance
			403	Occupational Health and Safety
			408	Child Labor
			410	Security Practices
			414	Supplier Social Assessment
			415	Public Policy

			416	Customer Health and Safety
			417	Marketing and Labeling
			418	Customer Privacy
			419	Socioeconomic Compliance
SDG17	Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development	6 Stakeholder engagement plan	207	Tax
		20 Project supply chain sustainability management		

The above table shows that GRI covers the full extent of SDGs. The above linkage of GRI to SDGs on a disclosure level is based on the mapping performed by GRI and presented in a standalone document, and not within the GRI guidance manuals[49]. The mapping performed links not only to SDGs but also to specific targets at a reporting requirement level.

Indicator-based mapping results

Table 53: Mapping of GRI's Disclosures/Reporting Requirements against AISI

Note: Due to the extensive description as part of GRI reporting requirement per disclosure this information is not presented in the below table, however it was accounted for in the mapping and presented in the Appendix C.

AISI			GRI	
SUSTAINABILITY TOPICS	INDICATORS	METRICS	TOPIC	DISCLOSURES
Option Assessment	1 Strategic options assessment	Existence of a strategic options assessment	Governance	GOV-3 Responsibilities for sustainable development topics and delegation
				GOV-7 Role of the highest governance body in setting purpose, values, and strategy
			Responsible business conduct	RBC-1 Statement on sustainable development strategy
Project Sustainability Management	2 Sustainability management system	Implementation of a sustainable management system and reporting	Responsible business conduct	RBC-1 Statement on sustainable development strategy
				RBC-2 Policy commitments
				RBC-3 Embedding the policy commitments throughout the organization
				RBC-5 Mechanisms for seeking advice and raising concerns
				RBC-6 Compliance with laws and regulations
			Governance	GOV-2 Nomination and selection of the highest governance body
				GOV-3 Responsibilities for sustainable development topics and delegation
			Reporting on	MT-1 Identification of material topics and related impacts

49

				material topics	MT-2 Material topics and related impacts
					MT-3 Management of material topics and related impacts
				Organizational details and reporting practices	REP-5 External assurance
				Governance	GOV-10 Identification and management of impacts
				Environmental Compliance	307-1 Non-compliance with environmental laws and regulations
				Socioeconomic Compliance	419-1 Non-compliance with laws and regulations in the social and economic area
				Local Communities	413-1 Operations with local community engagement, impact assessments, and development programs
					413-2 Operations with significant actual and potential negative impacts on local communities
Gender	3 Gender equality, inclusiveness and empowerment	Existence and Implementation of a comprehensive gender action plan (GAP).		**Local Communities**	413-2 Operations with significant actual and potential negative impacts on local communities
				Diversity and Equal Opportunity	405-1 Diversity of governance bodies and employees
					405-2 Ratio of basic salary and remuneration of women to men
				Market Presence	202-1 Ratios of standard entry level wage by gender compared to local minimum wage
				Non-discrimination	406-1 Incidents of discrimination and corrective actions taken
				Organizational activities	Disclosure ACT-2 Employees and other workers
				Employment	401-1 New employee hires and employee turnover
					401-3 Parental leave
				Occupational Health and Safety	403-9 Work-related injuries
					403-10 Work-related ill health
				Training and Education	404-1 Average hours of training per year per employee
					404-3 Percentage of employees receiving regular performance and career development reviews
				Governance	Disclosure GOV-1 Governance structure and composition
					Disclosure GOV-2 Nomination and selection of the highest governance body
Resilience	4 Climate Risk Resilience	Implementation of a climate risk adaptation plan		**Economic Performance**	201-2 Financial implications and other risks and opportunities due to climate change

	5 Cybersecurity resilience	Number of system vulnerabilities identified affecting infrastructure's critical assets or processes	N/A	N/A
Stakeholder Engagement	6 Stakeholder engagement plan	Existence of a meaningful and inclusive stakeholder engagement process and plan.	**Governance**	Disclosure GOV-4 Stakeholder consultation on sustainable development topics
			Stakeholder Engagement	SE-1 Approach to stakeholder engagement
			Local Communities	413-1 Operations with local community engagement, impact assessments, and development programs
			Tax	207-3 Stakeholder engagement and management of concerns related to tax
	7 Free, Prior and Informed Consent (FPIC)	Obtainment of Free, Prior and Informed Consent (FPIC)	**Rights of Indigenous Peoples**	411-1 Incidents of violations involving rights of indigenous peoples
			Responsible business conduct	RBC-2 Policy commitments
				RBC-3 Embedding the policy commitments throughout the organization
	8 Involuntary Resettlement	People physically or economically impacted by the project	**Local Communities**	413-2 Operations with significant actual and potential negative impacts on local communities
	9 Heritage assessment	Implementation of adequate cultural heritage protection measures	N/A	N/A
	10 Public health and safety management plan	Implementation of a public health and safety management plan	**Customer Health and Safety**	416-1 Assessment of the health and safety impacts of product and service categories
				416-2 Incidents of non-compliance concerning the health and safety impacts of products and services
Water	11 Freshwater withdrawal	Annual volume of fresh water used by the infrastructure project	**Water and Effluents**	303-3 Water withdrawal
				303-5 Water consumption
	N/A	N/A		303-1 Interactions with water as a shared resource
Energy / GHG	12 GHG emissions	Volume of Greenhouse gas emissions emitted by the project	**Emissions**	305-1 Direct (Scope 1) GHG emissions
				305-2 Energy indirect (Scope 2) GHG emissions
				305-3 Other indirect (Scope 3) GHG emissions
	N/A	N/A		305-4 GHG emissions intensity
	N/A	N/A		305-5 Reduction of GHG emissions
	13 Efficient use of energy	Amount of energy consumed by the project	**Energy**	302-1 Energy consumption within the organization
				302-2 Energy consumption outside of the organization

		N/A		302-3 Energy intensity
		N/A		302-4 Reduction of energy consumption
		N/A		302-5 Reduction in energy requirements of products and services
Materials lifecycle approach	14 Materials lifecycle thinking	Consideration of materials lifecycle impacts	**Waste**	306-2 Management of significant waste-related impacts
			Materials	301-1 Materials used by weight or volume
				301-2 Recycled input materials used
				301-3 Reclaimed products and their packaging materials
			Waste	306-1 Waste generation and significant waste-related impacts
	15 Reduction of Waste	Percentage of total waste diverted from incineration and landfills	**Waste**	306-4 Waste diverted from disposal
				306-3 Waste generated
				306-5 Waste directed to disposal
Air Quality	16 Fine particulate matter emission	Mean PM2.5 and PM10 emissions	**Emissions**	305-7 Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions
	N/A	N/A	**Emissions**	305-6 Emissions of ozone-depleting substances (ODS)
Biodiversity	17 Threatened species	Number of Aquatic and Terrestrial Species Impacted (Fauna and Flora)	**Biodiversity**	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas
				304-2 Significant impacts of activities, products, and services on biodiversity
				304-3 Habitats protected or restored
				304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations
	18 Watershed Management	Existence of an Integrated Watershed Assessment and Management Program	**Water and Effluents**	303-2 Management of water discharge-related impacts
				303-1 Interactions with water as a shared resource
				303-4 Water discharge
	19 Previously Disturbed Land	Percentage of land used by the project that has been previously disturbed or maintained as non-disturbed	N/A	N/A
Sustainable Supply chain	20 Project supply chain sustainability management	Existence of a sustainable procurement plan and compliance monitoring	**Organizational activities**	ACT-1 Activities, value chain, and other business relationships
			Supplier	308-1 New suppliers that were screened using environmental criteria

			Environmental Assessment	308-2 Negative environmental impacts in the supply chain and actions taken
			Supplier Social Assessment	414-1 New suppliers that were screened using social criteria
				414-2 Negative social impacts in the supply chain and actions taken
			Child Labor	408-1 Operations and suppliers at significant risk for incidents of child labor
			Forced or Compulsory Labor	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor
Anti-corruption	21 Anti-corruption program	Implementation of an anti-corruption program	**Anti-corruption**	205-1 Operations assessed for risks related to corruption
				205-2 Communication and training about anti-corruption policies and procedures
				205-3 Confirmed incidents of corruption and actions taken
			Anti-competitive Behavior	206-1 Legal actions for anti-competitive behavior, antitrust, and monopoly practices
			Governance	GOV-6 Conflicts of interest
Project Procurement	22 Sustainability in project award	Integration of the AISI in project tender process	**N/A**	**N/A**
Working Conditions	23 Labor rights	Integration of International Labour Organisation's (ILO) fundamental conventions	**Human Rights Assessment**	412-1 Operations that have been subject to human rights reviews or impact assessments
				412-2 Employee training on human rights policies or procedures
				412-3 Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening
			Security Practices	410-1 Security personnel trained in human rights policies or procedures
			Freedom of Association and Collective Bargaining	407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk
			Stakeholder engagement	SE-2 Collective bargaining agreements
			Non-discrimination	406-1 Incidents of discrimination and corrective actions taken
			Employment	401-3 Parental leave
			Responsible Business Conduct	RBC-4 Grievance mechanisms and other remediation processes
	24 Occupational Health & Safety (OH&S) Management Systems	Implementation of a Comprehensive OH&S Management System	**Occupational Health and Safety**	403-1 Occupational health and safety management system
				403-2 Hazard identification, risk assessment, and incident investigation

				403-3 Occupational health services
				403-4 Worker participation, consultation, and communication on occupational health and safety
				403-5 Worker training on occupational health and safety
				403-6 Promotion of worker health
				403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships
				403-8 Workers covered by an occupational health and safety management system
				403-10 Work-related ill health
	25 Frequency rates of fatal and non-fatal occupational injuries	Number of fatal and non-fatal occupational injuries	**Occupational Health and Safety**	403-9 Work-related injuries
	26 Fair Wages	Percentage of employees who are paid a fair wage	**Economic Performance**	201-1 Direct economic value generated and distributed
			Employment	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees
		N/A	**Governance**	GOV-13 Remuneration policies
		N/A		GOV-14 Process for determining remuneration
		N/A		GOV-15 Annual total compensation ratio
	27 Local jobs created	Number of local jobs created	**Indirect Economic Impacts**	203-1 Infrastructure investments and services supported
				203-2 Significant indirect economic impacts
			Market Presence	202-2 Proportion of senior management hired from the local community
			Employment	401-1 New employee hires and employee turnover
		N/A	**Procurement Practices**	204-1 Proportion of spending on local suppliers
Service Affordability	28 User affordability	Ability to pay (ATP) of project beneficiaries	**Indirect Economic Impacts**	203-2 Significant indirect economic impacts
			Water and Effluents	303-1 Interactions with water as a shared resource

This basic mapping exercise revealed a number of GRI's disclosures, which could not be linked to any of AISI's indicators and therefore these correspond to GRI's additional disclosures:

Table 54: GRI additional disclosures that were not linked to AISI topics (based on initial mapping against AISI topics)

TOPICS	DISCLOSURES	REPORTING REQUIREMENTS

Labor/Management Relations	402-1 Minimum notice periods regarding operational changes	a. Minimum number of weeks' notice typically provided to employees and their representatives prior to the implementation of significant operational changes that could substantially affect them. b. For organizations with collective bargaining agreements, report whether the notice period and provisions for consultation and negotiation are specified in collective agreements.
Training and Education	404-1 Average hours of training per year per employee	a. Average hours of training that the organization's employees have undertaken during the reporting period, by: i. gender; ii. employee category.
	404-2 Programs for upgrading employee skills and transition assistance programs	a. Type and scope of programs implemented and assistance provided to upgrade employee skills. b. Transition assistance programs provided to facilitate continued employability and the management of career endings resulting from retirement or termination of employment.
	404-3 Percentage of employees receiving regular performance and career development reviews	a. Percentage of total employees by gender and by employee category who received a regular performance and career development review during the reporting period.
Marketing and Labeling	417-1 Requirements for product and service information and labeling	a. Whether each of the following types of information is required by the organization's procedures for product and service information and labeling: i. The sourcing of components of the product or service; ii. Content, particularly with regard to substances that might produce an environmental or social impact; iii. Safe use of the product or service; iv. Disposal of the product and environmental or social impacts; v. Other (explain). b. Percentage of significant product or service categories covered by and assessed for compliance with such procedures.
	417-2 Incidents of non-compliance concerning product and service information and labeling	a. Total number of incidents of non-compliance with regulations and/or voluntary codes concerning the health and safety impacts of products and services within the reporting period, by: i. incidents of non-compliance with regulations resulting in a fine or penalty; ii. incidents of non-compliance with regulations resulting in a warning; iii. incidents of non-compliance with voluntary codes. b. If the organization has not identified any non-compliance with regulations and/or voluntary codes, a brief statement of this fact is sufficient.
	417-3 Incidents of non-compliance concerning marketing communications	a. Total number of incidents of non-compliance with regulations and/or voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship, by: i. incidents of non-compliance with regulations resulting in a fine or penalty; ii. incidents of non-compliance with regulations resulting in a warning; iii. incidents of non-compliance with voluntary codes. b. If the organization has not identified any non-compliance with regulations and/or voluntary codes, a brief statement of this fact is sufficient.
Customer Privacy	418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	a. Total number of substantiated complaints received concerning breaches of customer privacy, categorized by: i. complaints received from outside parties and substantiated by the organization; ii. complaints from regulatory bodies. b. Total number of identified leaks, thefts, or losses of customer data. c. If the organization has not identified any substantiated complaints, a brief statement of this fact is sufficient.
GRI additional disclosures that were linked to AISI topics but are not covered by AISI indicators		
TOPICS	**DISCLOSURES**	

Water and Effluents	303-1 Interactions with water as a shared resource	a. A description of how the organization interacts with water, including how and where water is withdrawn, consumed, and discharged, and the water-related impacts caused or contributed to, or directly linked to the organization's activities, products or services by a business relationship (e.g., impacts caused by runoff). b. A description of the approach used to identify water-related impacts, including the scope of assessments, their timeframe, and any tools or methodologies used. c. A description of how water-related impacts are addressed, including how the organization works with stakeholders to steward water as a shared resource, and how it engages with suppliers or customers with significant water-related impacts. d. An explanation of the process for setting any water-related goals and targets that re part of the organization's management approach, and how they relate to public policy and the local context of each area with water stress.
Emissions	305-4 GHG emissions intensity	a. GHG emissions intensity ratio for the organization. b. Organization-specific metric (the denominator) chosen to calculate the ratio. c. Types of GHG emissions included in the intensity ratio; whether direct (Scope 1), energy indirect (Scope 2), and/or other indirect (Scope 3). d. Gases included in the calculation; whether CO2, CH4, N2O, HFCs, PFCs, SF6, NF3, or all.
	305-5 Reduction of GHG emissions	a. GHG emissions reduced as a direct result of reduction initiatives, in metric tons of CO2 equivalent. b. Gases included in the calculation; whether CO2, CH4, N2O, HFCs, PFCs, SF6, NF3, or all. c. Base year or baseline, including the rationale for choosing it. d. Scopes in which reductions took place; whether direct (Scope 1), energy indirect (Scope 2), and/or other indirect (Scope 3). e. Standards, methodologies, assumptions, and/or calculation tools used.
Energy	302-3 Energy intensity	a. Energy intensity ratio for the organization. b. Organization-specific metric chosen to calculate the ratio. c. Types of energy included in the intensity ratio; whether fuel, electricity, heating, cooling, steam, or all. d. Whether the ratio uses energy consumption within the organization, outside of it, or both.
	302-4 Reduction of energy consumption	a. Amount of reductions in energy consumption achieved as a direct result of conservation and efficiency initiatives, in joules or multiples. b. Types of energy included in the reductions; whether fuel, electricity, heating, cooling, steam, or all. c. Basis for calculating reductions in energy consumption, such as base year or baseline, including the rationale for choosing it. d. Standards, methodologies, assumptions, and/or calculation tools used.
	302-5 Reduction in energy requirements of products and services	a. Reductions in energy requirements of sold products and services achieved during the reporting period, in joules or multiples. b. Basis for calculating reductions in energy consumption, such as base year or baseline, including the rationale for choosing it. c. Standards, methodologies, assumptions, and/or calculation tools used.
Emissions	305-6 Emissions of ozone-depleting substances (ODS)	a. Production, imports, and exports of ODS in metric tons of CFC-11 (trichlorofluoromethane) equivalent. b. Substances included in the calculation. c. Source of the emission factors used. d. Standards, methodologies, assumptions, and/or calculation tools used.

Table 55: GRI reporting requirements (metrics) not included in linked AISI indicators

AISI Indicators	GRI Disclosures	GRI Reporting Requirements

11 Freshwater withdrawal	303-1 Interactions with water as a shared resource	a. A description of how the organization interacts with water, including how and where water is withdrawn, consumed, and discharged, and the water-related impacts caused or contributed to, or directly linked to the organization's activities, products or services by a business relationship (e.g., impacts caused by runoff). b. A description of the approach used to identify water-related impacts, including the scope of assessments, their timeframe, and any tools or methodologies used. c. A description of how water-related impacts are addressed, including how the organization works with stakeholders to steward water as a shared resource, and how it engages with suppliers or customers with significant water-related impacts. d. An explanation of the process for setting any water-related goals and targets that are part of the organization's management approach, and how they relate to public policy and the local context of each area with water stress.
12 GHG emissions	305-4 GHG emissions intensity	a. GHG emissions intensity ratio for the organization. b. Organization-specific metric (the denominator) chosen to calculate the ratio. c. Types of GHG emissions included in the intensity ratio; whether direct (Scope 1), energy indirect (Scope 2), and/or other indirect (Scope 3). d. Gases included in the calculation; whether CO2, CH4, N2O, HFCs, PFCs, SF6, NF3, or all.
	305-5 Reduction of GHG emissions	a. GHG emissions reduced as a direct result of reduction initiatives, in metric tons of CO2 equivalent. b. Gases included in the calculation; whether CO2, CH4, N2O, HFCs, PFCs, SF6, NF3, or all. c. Base year or baseline, including the rationale for choosing it. d. Scopes in which reductions took place; whether direct (Scope 1), energy indirect (Scope 2), and/or other indirect (Scope 3). e. Standards, methodologies, assumptions, and/or calculation tools used.
13 Efficient use of energy	302-3 Energy intensity	a. Energy intensity ratio for the organization. b. Organization-specific metric (the denominator) chosen to calculate the ratio. c. Types of energy included in the intensity ratio; whether fuel, electricity, heating, cooling, steam, or all. d. Whether the ratio uses energy consumption within the organization, outside of it, or both.
	302-4 Reduction of energy consumption	a. Amount of reductions in energy consumption achieved as a direct result of conservation and efficiency initiatives, in joules or multiples. b. Types of energy included in the reductions; whether fuel, electricity, heating, cooling, steam, or all. c. Basis for calculating reductions in energy consumption, such as base year or baseline, including the rationale for choosing it. d. Standards, methodologies, assumptions, and/or calculation tools used.
	302-5 Reduction in energy requirements of products and services	a. Reductions in energy requirements of sold products and services achieved during the reporting period, in joules or multiples. b. Basis for calculating reductions in energy consumption, such as base year or baseline, including the rationale for choosing it. c. Standards, methodologies, assumptions, and/or calculation tools used.
16 Fine particulate matter emission	305-6 Emissions of ozone-depleting substances (ODS)	a. Production, imports, and exports of ODS in metric tons of CFC-11 (trichlorofluoromethane) equivalent. b. Substances included in the calculation. c. Source of the emission factors used. d. Standards, methodologies, assumptions, and/or calculation tools used.
14 Materials lifecycle thinking	306-1 Waste generation and significant waste-related impacts	a. For the organization's significant actual and potential waste-related impacts, a description of: (i). the inputs, activities, and outputs that lead or could lead to these impacts; (ii). whether these impacts relate to waste generated in the organization's own activities or to waste generated upstream or downstream in its **value chain.**
26 Fair Wages	GOV-13 Remuneration policies	a. describe the remuneration policies for highest governance body members and senior executives, including: i. fixed pay and variable pay, such as performance-based pay, equity-based pay, bonuses, and

		deferred and vested shares; ii. sign-on bonuses or recruitment incentive payments; iii. termination payments; iv. clawbacks; v. retirement benefits, such as the difference between benefit schemes and contribution rates for the highest governance body members, senior executives, and all other employees; b. describe how performance criteria in the remuneration policies for highest governance body members and senior executives relate to their objectives for sustainable development topics.
	GOV-14 Process for determining remuneration	a. describe its process for determining remuneration, including its remuneration policies; b. report whether independent members of the highest governance body or an independent remuneration committee oversee the remuneration process; c. describe how the views of stakeholders (including shareholders) regarding remuneration are sought and taken into account; d. report the results of votes on remuneration policies and proposals, if applicable; e. report whether remuneration consultants are involved in determining remuneration and, if so, report any relationships that the remuneration consultants have with the organization, its highest governance body, or senior executives.
	GOV-15 Annual total compensation ratio	a. report the ratio of the annual total compensation for the organization's highest- paid individual in each country of significant operations to the median annual total compensation for all employees (excluding the highest-paid individual) in the same country; b. report the ratio of the percentage increase in annual total compensation for the organization's highest-paid individual in each country of significant operations to the median percentage increase in annual total compensation for all employees (excluding the highest-paid individual) in the same country.
27 Local jobs created	204-1 Proportion of spending on local suppliers	a. Percentage of the procurement budget used for significant locations of operation that is spent on suppliers local to that operation (such as percentage of products and services purchased locally). b. The organization's geographical definition of 'local'. c. The definition used for 'significant locations of operation'.

After having linked all relevant indicators, the indicator-based mapping revealed several types of relevance between AISI indicators and the linked GRI disclosures, based on the rationale for assigning alignment levels for standards detailed mapping (See Section 8.2. Detailed mapping methodology). Only the 2c case of relevance is not identified in GRI.

The results of the Indicator-based mapping with respect to the alignment levels mentioned are summarized in the following table:

Table 56: AISI-GRI Indicator-based mapping results

AISI INDICATORS	No.of linked disclosures (of GRI)	RELEVANCE TO GRI	
		type of relevance	LEVEL
1 Strategic options assessment	3	4	LOW
2 Sustainability management system	16	2b	HIGH
3 Gender equality, inclusiveness and empowerment	14	1	FULL
4 Climate Risk Resilience	1	2a	HIGH

5 Cybersecurity resilience	0	5	NONE
6 Stakeholder engagement plan	4	1	FULL
7 Free, Prior and Informed Consent (FPIC)	3	3b	PARTIAL
8 Involuntary Resettlement	1	3b	PARTIAL
9 Heritage assessment	0	5	NONE
10 Public health and safety management plan	2	2b	HIGH
11 Freshwater withdrawal	3	1	FULL
12 GHG emissions	5	1	FULL
13 Efficient use of energy	5	1	FULL
14 Materials lifecycle thinking	5	1	FULL
15 Reduction of Waste	3	1	FULL
16 Fine particulate matter emission	2	3b	PARTIAL
17 Threatened species	4	4	LOW
18 Watershed Management	3	2b	HIGH
19 Previously Disturbed Land	0	5	NONE
20 Project supply chain sustainability management	7	2b	HIGH
21 Anti-corruption program	5	2b	HIGH
22 Sustainability in project award	0	5	NONE
23 Labor rights	9	1	FULL
24 Occupational Health & Safety (OH&S) Management Systems	9	1	FULL
25 Frequency rates of fatal and non-fatal occupational injuries	1	1	FULL
26 Fair Wages	5	2a	HIGH
27 Local jobs created	5	3b	PARTIAL
28 User affordability	2	3b	PARTIAL

Observations regarding the number of linked GRI disclosures per AISI indicator:

- 4 AISI indicators that have no alignment with GRI disclosures.
- The majority of AISI indicators are linked to more than 1 GRI disclosures and in average to 4.7 GRI disclosures per indicator. The two cases of indicators with the maximum linked GRI disclosures are:
    - The 'Sustainability management system' indicator
    - The 'Gender equality, inclusiveness and empowerment' indicator

In the two cases, the large number of GRI disclosures linked is due to the absence of one single indicator referring to the topics. Based on the review of the GRI system a different approach to sustainability

management was observed, with various disclosures of GRI integrating and addressing partially the topics. This is also the result of the broad scope of AISI's indicators.

Observations regarding the levels of alignment per AISI indicator

- the majority of AISI's indicators (9) are fully covered by GRI's disclosures
- There are 4 indicators that are not related to any of GRI's disclosures (no level of alignment)
- Only 2 of the indicators have low coverage
- The rest of AISI are almost equally divided between those with high and partial coverage.
- In the case of partial coverage the most prevailing type of relevance is 3b, meaning that GRI disclosures have a wider scope and include additional metrics not included in AISI indicator
- In the case of high coverage the most common type is 2b, meaning that AISI has a more comprehensive type of indicator to address a specific topic (program, management system, plan etc) that entails an extensive list of evidence, while GRI addressing the topic through various and more specific type of disclosures.

8.5. AISI-SASB detailed mapping findings

Structure Compatibility

AISI		**TOPICS**	**INDICATORS**	**METRICS**
SASB	SUSTAINABILITY DIMENSIONS	GENERAL ISSUE CATEGORIES (industry agnostic)	DISCLOSURE TOPICS (industry specific)	ACCOUNTING METRICS

Systems structure relevance with respect to E,S,G

The table below shows the result of the **AISI Topics/ SASB General issue categories mapping**. As made evident through the links between the ESG categories, the two systems have a different approach in the definition of the various topics. For example, in the case of environmental-related topics there is a direct link of topics, however SASB refers to topics such as water, energy and waste also through its 'Business model & Innovation' dimension. According to its definition "*it addresses the integration of environmental, human, and social issues in a company's value creation process, including resource recovery and other innovations in the production process; as well as in product innovation, including efficiency and responsibility in the design, use phase, and disposal of products*." In other words, SASB proposes the disclosure of information on environmental impact, however asks reporting companies to disclose the financial materiality of these environmental impacts as well.

Table 57: Mapping of SASB's General Issue Categories against AISI Topics- with respect to E,S,G

AISI		**SASB**	
SUSTAINABILITY TOPICS		**DIMENSION**	**GENERAL ISSUE CATEGORIES (cross-industry)**

Option Assessment		Environment	Ecological Impacts
Project Sustainability Management		Leadership & Governance	Management of the Legal & Regulatory Environment
Gender		Human capital	Employee Engagement, Diversity & Inclusion
			Labor Practices
			Employee Engagement, Diversity & Inclusion
Resilience		Business model & Innovation	Physical Impacts of Climate Change
		Leadership & Governance	Systemic Risk Management
Stakeholder Engagement		Environment	Ecological Impacts
		Social capital	Human Rights & Community Relations
			Product Quality & Safety
		Environment	Waste & Hazardous Materials Management
		Leadership & Governance	Critical Incident Risk Management
Water		Environment	Water & Wastewater Management
		Business model & Innovation	Materials Sourcing & Efficiency
			Product Design & Lifecycle Management
Energy / GHG		Environment	GHG Emissions
			Energy Management
		Business model & Innovation	Product Design & Lifecycle Management
Materials lifecycle approach		Business model & Innovation	Materials Sourcing & Efficiency
			Product Design & Lifecycle Management
		Environment	Waste & Hazardous Materials Management
Air Quality		Environment	Air Quality
Biodiversity		Environment	Ecological Impacts
			Water & Wastewater Management
			Waste & Hazardous Materials Management
			Ecological Impacts
Sustainable Supply chain		Business model & Innovation	Supply Chain Management
Anti-corruption		Leadership & Governance	Business Ethics
			Competitive Behavior
Project Procurement		N/A	N/A
Working Conditions		Human capital	Labor Practices
			Employee Health & Safety
		Social capital	Human Rights & Community Relations
Service Affordability		Social capital	Access & Affordability

Table 58: AISI- SASB Indicators per E,S,G aspect

	AISI		SASB	
E,S,G aspects	No of Indicators	% of Indicators	No of Disclosure Topics	% of Disclosure Topics
ENVIRONMENTAL INDICATORS	9	32%	16	28%
SOCIAL INDICATORS	12	43%	12	21%
GOVERNANCE INDICATORS	7	25%	29	51%
TOTAL	**28**		**57**	

As shown in the above table, the quantity of indicators in the two systems, as an absolute number, is not comparable, with SASB including 2-times the no. of AISI indicators. This is due to AISI's selection of a more comprehensive type of indicators to address topics as compared to SASB (e.g. indicators than refer to programs, management systems, action plans etc), as well as the SASB's industry-specificity of disclosure topics, that in many cases aim to capture material topics that only apply to some of the industries. However, if compared as percentages, the proportion of indicators per ESG theme is more equally balanced in AISI. In SASB the majority of indicators address governance aspects (51%) while in AISI the majority addresses social issues (43%). The two systems have a more similar percentage in indicators that address environmental issues (32% for AISI and 28% for SASB).

Table 59: Indicator type per E,S,G (AISI)

AISI				
	No of process-based	No of quantitative	% of process-based	% of quantitative
ENVIRONMENTAL INDICATORS	2	7	22%	78%
SOCIAL INDICATORS	7	5	58%	42%
GOVERNANCE INDICATORS	6	1	86%	14%
TOTAL	**15**	**13**	**54%**	**46%**

Table 60: Indicator type per E,S,G (SASB)

SASB							
	No of qualitative	No of quantitative	both		% of process-based	% of quantitative	% of "both"
ENVIRONMENTAL DISCLOSURE TOPICS	0	11	5		0%	69%	31%
SOCIAL DISCLOSURE TOPICS	3	3	6		25%	25%	50%
GOVERNANCE DISCLOSURE TOPICS	6	11	12		21%	38%	41%
TOTAL	**9**	**25**	**23**		**16%**	**44%**	**40%**

Main observations regarding the balance of quantitative vs process-based indicators per E,S,G:

- AISI's majority of indicators are process-based (54%) while SASB's majority of indicators are quantitative (44% plus the disclosure topics that include both quantitative and qualitative accounting metrics)
- In the Environmental category both systems have significantly higher quantitative indicators
- In the Social category, AISI has more process-based indicators, while GRI has more quantitative disclosure topics and associated accounting metrics if counting the ones that include both quantitative and qualitative accounting metrics (also result of the AISI'S more comprehensive type of indicators and associated metrics)
- In the Governance category AISI has only one quantitative indicator while SASB has 23 (12 as part of the both qualitative and quantitative disclosure topics)

Indicator-based mapping results

Table 61: Mapping of SASB's General Issue Categories/Disclosure Topics & Accounting Metrics against AISI Topics & Indicators and Metrics

AISI			SASB		
SUSTAINABILITY TOPIC	**INDICATOR**	**METRIC**	**GENERAL ISSUE CATEGORY**	**DISCLOSURE TOPIC**	**ACCOUNTING METRIC**
Option Assessment	**1 Strategic options assessment**	Existence of a strategic options assessment	**Ecological Impacts**	**Environmental impacts of project development**	Discussion of processes to assess and manage environmental risks associated with project design, siting, and construction
					Description of efforts in (solar energy system) project development to address community and ecological impacts
Project Sustainability Management	**2 Sustainability management system**	Implementation of a sustainable management system and reporting	**Management of the Legal & Regulatory Environment**	**Management of the Legal & Regulatory Environment**	Discussion of corporate positions related to government regulations and/or policy proposals that address environmental and social factors affecting the industry
		N/A			Amount of subsidies received through government programs
Gender	**3 Gender equality, inclusiveness and empowerment**	Existence and Implementation of a comprehensive gender action plan (GAP).	**Employee Engagement, Diversity & Inclusion**	**Employee recruitment, inclusion & performance**	Percentage of gender and racial/ethnic group representation for (1) executive management and (2) all other employees
			Labor Practices	**Labor Practices**	Description of policies and programs to prevent worker harassment
		N/A	**Employee Engagement,**	**Employee recruitment,**	Employee engagement as a percentage

			Diversity & Inclusion	**inclusion & performance**	
		N/A		**Employee recruitment, Development & Retention**	Discussion of talent recruitment and retention efforts
Resilience	**4 Climate Risk Resilience**	Implementation of a climate risk adaptation plan	**Physical Impacts of Climate Change**	**Climate Change Adaptation**	Description of climate change risk exposure analysis, degree of systematic portfolio exposure, and strategies for mitigating risks
					Area of properties located in 100-year flood zones, by property subsector
				Network Resiliency & Impacts of Climate Change	Wastewater treatment capacity located in 100-year flood zones
					(1) Number and (2) volume of sanitary sewer overflows (SSO), (3) percentage of volume recovered
					(1) Number of unplanned service disruptions, and (2) customers affected, each by duration category
	5 Cybersecurity resilience	Number of system vulnerabilities identified affecting infrastructure's critical assets or processes	**Systemic Risk Management**	**Grid Resiliency**	Number of incidents of non-compliance with physical and/or cybersecurity standards or regulations
Stakeholder Engagement	**6 Stakeholder engagement plan**	Existence of a meaningful and inclusive stakeholder engagement process and plan.	**Human Rights & Community Relations**	**Community relations**	Discussion of process to manage risks and opportunities associated with community rights and interests
					Number and duration of non-technical delays
			Ecological Impacts	**Environmental impacts of project development**	Description of efforts in (solar energy system) project development to address community and ecological impacts
	7 Free, Prior and Informed Consent (FPIC)	Obtainment of Free, Prior and Informed Consent (FPIC)	**Human Rights & Community Relations**	**Rights of Indigenous people**	Discussion of engagement processes and due diligence practices with respect to the management of indigenous rights
				Security, Human rights & Rights of indigenous people	Discussion of engagement processes and due diligence practices with respect to human rights, indigenous rights, and operation in areas of conflict

	8 Involuntary Resettlement	People physically or economically impacted by the project		**Community relations**	Discussion of process to manage risks and opportunities associated with community rights and interests
		N/A			Number and duration of non-technical delays
	9 Heritage assessment	Implementation of adequate cultural heritage protection measures	**N/A**	**N/A**	**N/A**
	10 Public health and safety management plan	Implementation of a public health and safety management plan	**Product Quality & Safety**	**Structural Integrity & Safety**	Amount of defect- and safety-related rework costs
					Total amount of monetary losses as a result of legal proceedings associated with defect- and safety-related incidents
				Drinking Water Quality	Number of (1) acute health-based, (2) nonacute health-based, and (3) non-health-based drinking water violations
					Discussion of strategies to manage drinking water contaminants of emerging concern
			Waste & Hazardous Materials Management	**Coal ash management**	Amount of coal combustion residuals (CCR) generated, percentage recycled
					Total number of coal combustion residual (CCR) impoundments, broken down by hazard potential classification and structural integrity assessment
				Management of Leachate & Hazardous Waste	(1) Total Toxic Release Inventory (TRI) releases, (2) percentage released to water
				Hazardous Waste Management	Amount of hazardous waste generated, percentage recycled
					Number and aggregate quantity of reportable spills, quantity recovered
			Critical Incident Risk Management	**Critical Incident Risk Management**	Description of management systems used to identify and mitigate catastrophic and tail-end risks
				Nuclear safety & Emergency	Total number of nuclear power units, broken down by US Nuclear

				management	Regulatory Commission Action Matrix Column
					Description of efforts to manage nuclear safety and emergency preparedness
				Integrity of Gas Delivery Infrastructure	Number of (1) reportable pipeline incidents, (2) Corrective Action Orders (CAO), and (3) Notices of Probable Violation (NOPV)
					Percentage of distribution pipeline that is (1) cast and/or wrought iron and (2) unprotected steel
					Percentage of gas (1) transmission and (2) distribution pipelines inspected
					Description of efforts to manage the integrity of gas delivery infrastructure, including risks related to safety and emissions
				Accident & Safety Management	Number of road accidents and incidents
					Safety Measurement System BASIC percentiles for: (1) Unsafe Driving, (2) Hours-of-Service Compliance, (3) Driver Fitness, (4) Controlled Substances/Alcohol, (5) Vehicle Maintenance, and (6) Hazardous Materials Compliance
					(1) Number and (2)aggregate volume of spills and releases to the environment
Water	**11 Freshwater withdrawal**	Annual volume of fresh water used by the infrastructure project	**Water & Wastewater Management**	**Water Management**	(1) Total water withdrawn, (2) total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress
			Materials Sourcing & Efficiency	**Water Supply Resilience**	Total water sourced from regions with High or Extremely High Baseline Water Stress, percentage purchased from a third party
		N/A	**Water & Wastewater Management**	**Distribution Network Efficiency**	Water main replacement rate
		N/A			Volume of non-revenue real water losses
		N/A	**Materials**	**Water Supply**	Volume of recycled water delivered

			Sourcing & Efficiency	**Resilience**	to customers
		N/A			Discussion of strategies to manage risks associated with the quality and availability of water resources
		N/A	**Product Design & Lifecycle Management**	**Lifecycle Impacts of Buildings & Infrastructure**	Discussion of process to incorporate operational-phase energy and water efficiency considerations into project planning and design (engineering & construction services)
Energy / GHG	**12 GHG emissions**	Volume of Greenhouse gas emissions emitted by the project	**GHG Emissions**	**Greenhouse emissions**	Gross global Scope 1 emissions and percentage of Scope 1 emissions emitted in areas that are subject to emissions-limiting or emissions-reporting regulation
		N/A			[in cases also] Percentage of of Scope 1 emissions associated with the emission of a specific (per industry) substance
		N/A			Discussion of long-term and short-term strategy or plan to manage Scope 1 and lifecycle emissions, emissions reduction targets, and an analysis of performance against those targets
		N/A			(1) Total landfill gas generated (2) percentage flared (3) percentage used for energy
		(accounted as part of Efficient use of energy)[50]		**Emissions Reduction Services & Fuels management**	Total fuel consumed; percentage renewable; percentage used in: (1) on-road equipment and vehicles (2) off-road equipment
		N/A			Discussion of strategies or plans to address air-emissions related risks, opportunities and impacts
		N/A			Percentage of engines in service that meet Tier 4 compliance for non-road diesel engine emissions
		N/A		**Greenhouse Gas Emissions & Energy Resource Planning**	(1) Number of customers served in markets to renewable portfolio standards (RPS) and (2) percentage fulfillment of RPS target by market

[50] SASB has a different approach to GHG emissions, requesting disclosure of only direct emissions (Scope 1) and accounting for indirect emissions through energy management (Scope 2).

		(accounted as part of Efficient use of energy)		**Fleet fuel management**	Fleet fuel consumed (2) percentage natural gas, (3) percentage renewable
		N/A			Percentage of alternative fuel vehicles in fleet
	13 Efficient use of energy	Amount of energy consumed by the project	**Energy Management**	**Energy management**	(1) Total energy consumed, (2) percentage grid electricity, (3) percentage renewable
					(1) Total energy consumed by portfolio area with data coverage, (2) percentage grid electricity, and (3) percentage renewable, by property subsector
					Like-for-like percentage change in energy consumption for the portfolio area with data coverage, by property subsector
			GHG Emissions	**Emissions Reduction Services & Fuels management**	Total fuel consumed; percentage renewable; percentage used in: (1) on-road equipment and vehicles (2) off-road equipment
				Fleet fuel management	Fleet fuel consumed (2) percentage natural gas, (3) percentage renewable
		N/A	**Energy Management**	**Energy management**	Percentage of eligible portfolio that (1) has an energy rating and (2) is certified to ENERGY STAR, by property subsector
		N/A	**GHG Emissions**	**Fleet fuel management**	Percentage of alternative fuel vehicles in fleet
		N/A	**Product Design & Lifecycle Management**	**Lifecycle Impacts of Buildings & Infrastructure**	Discussion of process to incorporate operational-phase energy and water efficiency considerations into project planning and design (engineering & construction services)
Materials lifecycle approach	**14 Materials lifecycle thinking**	Consideration of materials lifecycle impacts	**Materials Sourcing & Efficiency**	**Materials Sourcing**	Description of the management of risks associated with the use of critical materials
					Description of environmental and social risks associated with sourcing priority raw materials
				Product end of life management	(1) Materials recovered through take back programs, percentage of recovered materials that were

					reused, (3) recycled and (4)landfilled (for telecommunication services)
			Supply Chain Management	**Environmental & Social Impacts of supply chain**	Percentage of [materials] sourced that are certified to a third-party environmental and/or social standard, and percentages by standard
			Product Design & Lifecycle Management	**Product End-of-life Management**	Percentage of materials with recycled content
					Weight of end-of-life material recovered, percentage recycled
					Description of approach and strategies to design products for high-value recycling
					Description of approach to manage use, reclamation, and disposal of hazardous materials
				Product Innovation	Percentage of products that qualify for credits in sustainable building design and construction certification
					Total addressable market and share of market for products that reduce energy, water, and /or material impacts during usage and/or production
			Materials Sourcing & Efficiency	**RR-WT Materials Efficiency**	Top five materials consumed, by weight
					Description of approach to optimize materials efficiency of wind turbine design
	15 Reduction of Waste	Percentage of total waste diverted from incineration and landfills	**Waste & Hazardous Materials Management**	**Waste Management**	Amount of waste generated, percentage hazardous, percentage recycled
Air Quality	**16 Fine particulate matter emission**	Mean PM2.5 and PM10 emissions	**Air Quality**	**Air quality**	Air emissions of the following pollutants: (1) NOx (excluding N2O), (2) SOx, (3) particulate matter (PM10),volatile organic compounds (VOCs), and (4) hazardous air pollutants (HAPs)
		N/A			Percentage of each pollutant emission in or near areas of dense population

		N/A			Number of facilities in or near areas of dense population
		N/A			Number of incidents of non-compliance associated with air emissions
Biodiversity	**17 Threatened species**	Number of Aquatic and Terrestrial Species Impacted (Fauna and Flora)	**Ecological Impacts**	**Biodiversity impacts**	Terrestrial acreage disturbed, percentage of impacted area restored
				Environmental impacts of project development	Number of incidents of non-compliance with environmental permits, standards, and regulations
					Discussion of processes to assess and manage environmental risks associated with project design, siting, and construction
		N/A			Number and duration of project delays related to ecological impacts
		N/A		**Land use & Ecological impacts**	Total amount of monetary losses as a result of legal proceedings associated with environmental regulations
	18 Watershed Management	Existence of an Integrated Watershed Assessment and Management Program	**Water & Wastewater Management**	**Water Management**	Number of incidents of non-compliance associated with water quantity and/or quality permits, standards, and regulations
					Description of water management risks and discussion of strategies and practices to mitigate those risks
				Effluent Quality Management	Discussion of strategies to manage effluents of emerging concern
		N/A			Number of incidents of non-compliance associated with water effluent quality permits, standards, and regulations
		N/A	**Waste & Hazardous Materials Management**	**Management of Leachate & Hazardous Waste**	Number of corrective actions implemented for landfill releases
		N/A			Number of incidents of non-compliance associated with environmental impacts
		N/A		**Hazardous Waste Management**	Number and aggregate quantity of reportable spills, quantity recovered
	19 Previously Disturbed Land	Percentage of land used by the project that has	**Ecological Impacts**	**Land use & Ecological**	Number of (1)lots and (2) homes delivered on redevelopment sites (in

		been previously disturbed or maintained as non-disturbed		**impacts**	Home builders)
Sustainable Supply chain	**20 Project supply chain sustainability management**	Existence of a sustainable procurement plan and compliance monitoring	**Supply Chain Management**	**Supply Chain Management**	Discussion of strategy to manage environmental and social risks arising from the supply chain
				Environmental & Social Impacts of supply chain	Percentage of [materials] sourced that are certified to a third-party environmental and/or social standard, and percentages by standard
					Suppliers' social and environmental responsibility audit (1) non-conformance rate and (2) associated corrective action rate for (a) major and (b0 minor conformances
					Discussion of strategy to manage environmental and social risks arising from contract growing and commodity sourcing
					Number of facilities audited to a social responsibility code of conduct
Anti-corruption	**21 Anti-corruption program**	Implementation of an anti-corruption program	**Business Ethics**	**Business ethics**	Description of policies and practices for prevention of (1) bribery and corruption, and (2) anti-competitive behavior in the project bidding processes
					(1) Number of active projects and (2) backlog in countries that have the 20 lowest rankings in Transparency International's Corruption Perception Index
					Total amount of monetary losses as a result of legal proceedings associated with charges of (1) bribery or corruption and (2) anticompetitive practices
				Business ethics & Payments Transparency	Amount of net revenue in countries that have the 20 lowest rankings in Transparency International's Corruption Perception Index
				Professional Integrity	Description of approach to ensuring professional integrity
					Total amount of monetary losses as a result of legal proceedings associated with professional integrity

			Competitive Behavior	**Competitive Behavior**	Total amount of monetary losses as a result of legal proceedings associated with anticompetitive behavior regulations
				Pricing Integrity & Transparency	Total amount of monetary losses as a result of legal proceedings associated with price fixing or price manipulation
Project Procurement	**22 Sustainability in project award**	Integration of the AISI in project tender process	**N/A**	**N/A**	**N/A**
Working Conditions	**23 Labor rights**	Integration of International Labour Organisation's (ILO) fundamental conventions	**Labor Practices**	**Labor Practices**	Percentage of active workforce covered under collective bargaining agreements
					Number of work stoppages and total days idle
					Total amount of monetary losses as a result of legal proceedings associated with labor law violations; employment discriminations
					Voluntary and involuntary turnover rate for employees
					Description of policies and programs to prevent worker harassment
					Percentage of employees working maximum hours
					Percentage of drivers classified as independent contractors
	24 Occupational Health & Safety (OH&S) Management Systems	Implementation of a Comprehensive OH&S Management System	**Employee Health & Safety**	**Workforce Health & Safety**	Discussion of management systems used to integrate a culture of safety
					Description of efforts to assess, monitor, and reduce exposure of workforce to human health hazards
					Total amount of monetary losses as a result of legal proceedings associated with employee health and safety violations
					Safety Measurement System BASIC percentiles for: (1) Unsafe Driving, (2) Hours-of-Service Compliance, (3) Driver Fitness, (4) Controlled Substances/Alcohol, (5) Vehicle Maintenance, and (6) Hazardous Materials Compliance

	25 Frequency rates of fatal and non-fatal occupational injuries	Number of fatal and non-fatal occupational injuries	**Employee Health & Safety**	**Workforce Health & Safety**	(1) Total recordable incident rate (TRIR), (2) fatality rate, and (3) near miss frequency rate (NMFR) for (a) direct employees and (b) contract employees
	26 Fair Wages	Percentage of employees who are paid a fair wage	**Labor Practices**	**Labor Practices**	Average hourly wage and percentage of employees earning minimum wage, by region
					Percentage of employees paid for overtime
	27 Local jobs created	Number of local jobs created	**Human Rights & Community Relations**	**Community relations**	Discussion of process to manage risks and opportunities associated with community rights and interests
Service Affordability	**28 User affordability**	Ability to pay (ATP) of project beneficiaries	**Access & Affordability**	(Energy/ water/ gas) **affordability**	Average retail (electric/ water/gas) rate for (1) residential, (2) commercial, and (3) industrial customers
					Typical monthly (electric/ water/gas) bill for residential customers for (1) 500 kWh and (2) 1,000 kWh of electricity delivered per month
					Number of residential customer (electric/ water/gas) disconnections for non-payment, percentage reconnected within 30 days
					Discussion of impact of external factors on customer affordability of ([service] (electricity/ water/gas) including the economic conditions of the service territory

In total, 47 of the 57 disclosure topics of SASB and their associated 116 accounting metrics were linked to 25 AISI indicators. This basic mapping exercise revealed 10 SASB disclosure topics & 26 associated metrics, which could not be linked to any of AISI's indicators and therefore these correspond to WEF's additional metrics and disclosures:

Table 62: SASB Additional Disclosure Topics & associated metrics

DIMENSION	GENERAL ISSUE CATEGORY	DISCLOSURE TOPIC	ACCOUNTING METRIC
Social capital	**Data Security**	**Data Security**	(1) Number of data breaches, (2) percentage involving personally identifiable information (PII), (3) number of customers affected
			Description of approach to identifying and addressing data security risks, including use of third-party cybersecurity standards

			(1) Number of data breaches, (2) percentage involving customers' confidential business information (CBI) or personally identifiable information (PII), (3) number of customers affected
	Customer Privacy	**Data Privacy**	(1) Number of data breaches, (2) percentage involving personally identifiable information (PII), (3) number of customers affected
			Description of approach to identifying and addressing data security risks, including use of third-party cybersecurity standards
			(1) Number of data breaches, (2) percentage involving customers' confidential business information (CBI) or personally identifiable information (PII), (3) number of customers affected
Business model & Innovation	**Product Design & Lifecycle Management**	**Climate impacts of business mix**	Amount of backlog for (1) cancellation associated with hydrocarbon-related projects and (2) renewable energy projects
			Amount of backlog for non-energy projects associated with climate change mitigation
	Product Design & Lifecycle Management	**Management of Energy Infrastructure Integration & Related Regulations**	Description of risks associated with integration of solar energy into existing energy infrastructure and discussion of efforts to manage those risks
			Description of risks and opportunities associated with energy policy and its impact on the integration of solar energy into existing energy infrastructure
	Product Design & Lifecycle Management	**Fuel Economy & Use-phase Emissions**	Discussion of strategy for managing fleet fuel economy and emissions risks and opportunities
			Fleet utilization rate
		RR-WT Ecological Impacts of Project Development	Average A-weighted sound power level of wind turbines, by wind turbine class
			Backlog cancellations associated with community or ecological impacts
			Description of efforts to address ecological and community impacts of wind energy production through turbine design
	Business Model Resilience	**End-Use Efficiency & Demand**	Percentage of electric/gas utility revenues from rate structures that (1) are decoupled and (2) contain a lost revenue adjustment mechanism (LRAM)
			Percentage of water utility revenues from rate structures that are designed to promote conservation and revenue resilience
			Percentage of electric load served by smart grid technology
			Customer electricity/water/gas savings from efficiency measures, by market
		Recycling &	(1) Amount of waste incinerated, (2) percentage hazardous, (3) percentage used for energy recovery

		Resource Recovery (for waste management)	Percentage of customers receiving (1) recycling and (2) composting services, by customer type
			Amount of material (1) recycled, (2) composted, and (3) processed as waste-to- energy
			Amount of electronic waste collected, percentage recovered through recycling
Leadership & Governance	**Systemic Risk Management**	**Grid Resiliency**	(1) System Average Interruption Duration Index (SAIDI), (2) System Average Interruption Frequency Index (SAIFI), and (3) Customer Average Interruption Duration Index (CAIDI), inclusive of major event days
	Systemic Risk Management	**Managing Systemic Risks from Technology Interruptions**	(1) System average interruption frequency and (2) customer average interruption duration
			Discussion of systems to provide unimpeded service during service interruptions

Moreover, it is worth highlighting those cases in which though a SASB disclosure topic was linked with an AISI indicator, part of its associated accounting metrics were not included in AISI:

Table 63: SASB Accounting metrics not included in AISI linked indicators

AISI INDICATORS	SASB DISCLOSURE TOPICS	SASB ACCOUNTING METRICS	type of METRIC
3 Gender equality, inclusiveness and empowerment	**Employee recruitment, inclusion & performance**	Employee engagement as a percentage	**cross-industry**
		Discussion of talent recruitment and retention efforts	**cross-industry**
8 Involuntary Resettlement	**Community relations**	Number and duration of non-technical delays	**cross-industry**
11 Freshwater withdrawal	**Distribution Network Efficiency**	Water main replacement rate	**industry-specific**
		Volume of non-revenue real water losses	**industry-specific**
	Water Supply Resilience	Volume of recycled water delivered to customers	**industry-specific**
		Discussion of strategies to manage risks associated with the quality and availability of water resources	**cross-industry**
	Lifecycle Impacts of Buildings & Infrastructure	Discussion of process to incorporate operational-phase energy and **water efficiency considerations** into project planning and design (engineering & construction services)	**cross-industry**
12 GHG emissions	**Greenhouse emissions**	[in cases also] Percentage of of Scope 1 emissions associated with the emission of a specific (per industry) substance	**industry-specific**
		Discussion of long-term and short-term strategy or plan to manage Scope 1 and lifecycle emissions, **emissions reduction targets,** and an analysis of performance against those targets	**cross-industry**

			(1) Total landfill gas generated (2) percentage flared (3) percentage used for energy	**industry-specific**
		Emissions Reduction Services & Fuels management	Discussion of strategies or plans to address air-emissions related risks, opportunities and impacts	**cross-industry**
			Percentage of engines in service that meet Tier 4 compliance for non-road diesel engine emissions	**cross-industry**
		Greenhouse Gas Emissions & Energy Resource Planning	(1) Number of customers served in markets to renewable portfolio standards (RPS) and (2) percentage fulfillment of RPS target by market	**industry-specific**
13 Efficient use of energy		**Energy management**	Percentage of eligible portfolio that (1) has an energy rating and (2) is certified to ENERGY STAR, by property subsector	**cross-industry**
		Fleet fuel management	Percentage of alternative fuel vehicles in fleet	**cross-industry**
		Lifecycle Impacts of Buildings & Infrastructure	Discussion of process to incorporate operational-phase **energy** and water efficiency considerations into project planning and design (engineering & construction services)	**cross-industry**
16 Fine particulate matter emission		**Air quality**	Percentage of each pollutant emission in or near areas of dense population	**cross-industry**
			Number of facilities in or near areas of dense population	**cross-industry**
			Number of incidents of non-compliance associated with air emissions	**cross-industry**
17 Threatened species		**Ecological Impacts**	Number and duration of project delays related to ecological impacts	**cross-industry**
		Land use & Ecological impacts	Total amount of monetary losses as a result of legal proceedings associated with environmental regulations	**cross-industry**
18 Watershed Management		**Effluent Quality Management**	Number of incidents of non-compliance associated with water effluent quality permits, standards, and regulations	**cross-industry**
		Management of Leachate & Hazardous Waste	Number of corrective actions implemented for landfill releases	**industry-specific**
			Number of incidents of non-compliance associated with environmental impacts	**cross-industry**
		Hazardous Waste Management	Number and aggregate quantity of reportable spills, quantity recovered	**cross-industry**

After having linked all relevant indicators, the indicator-based mapping revealed several types of relevance between AISI indicators and the linked SASB disclosure topics & accounting metrics, based on the rationale for assigning alignment levels for standards detailed mapping (See Section 8.2. Detailed mapping methodology).

The results of the Indicator-based mapping with respect to the alignment levels mentioned are summarized in the following table:

Table 64: AISI-SASB Indicator-based Mapping Results

SUSTAINABILITY TOPICS	INDICATORS	no.of disclosure topics	no.of accounting metrics	RELEVANCE TO SASB	
				type of relevance	level
Option Assessment	1 Strategic options assessment	1	2	3a	PARTIAL
Project Sustainability Management	2 Sustainability management system	1	2	4	LOW
Gender	3 Gender equality, inclusiveness and empowerment	3	4	3a	PARTIAL
Resilience	4 Climate Risk Resilience	2	5	1	FULL
	5 Cybersecurity resilience	1	1	3b	PARTIAL
Stakeholder Engagement	6 Stakeholder engagement plan	2	3	3a	PARTIAL
	7 Free, Prior and Informed Consent (FPIC)	2	2	1	FULL
	8 Involuntary Resettlement	1	2	3c	PARTIAL
	9 Heritage assessment	0	0	5	NONE
	10 Public health and safety management plan	9	19	2b	HIGH
Water	11 Freshwater withdrawal	4	7	1	FULL
Energy / GHG	12 GHG emissions	4	10	3b	PARTIAL
	13 Efficient use of energy	3	7	1	FULL
Materials lifecycle approach	14 Materials lifecycle thinking	7	13	1	FULL
	15 Reduction of Waste	1	1	1	FULL
Air Quality	16 Fine particulate matter emission	1	4	3b	PARTIAL
Biodiversity	17 Threatened species	3	5	3b	PARTIAL
	18 Watershed Management	4	7	3a	PARTIAL

	19 Previously Disturbed Land	1	1	**1**	FULL
Sustainable Supply chain	**20 Project supply chain sustainability management**	2	5	**2b**	HIGH
Anti-corruption	**21 Anti-corruption program**	5	8	**2b**	HIGH
Project Procurement	**22 Sustainability in project award**	0	0	**5**	NONE
Working Conditions	**23 Labor rights**	1	7	**3a**	PARTIAL
	24 Occupational Health & Safety (OH&S) Management Systems	1	4	**1**	FULL
	25 Frequency rates of fatal and non-fatal occupational injuries	1	1	**1**	FULL
	26 Fair Wages	1	2	**2a**	HIGH
	27 Local jobs created	1	1	**3b**	PARTIAL
Service Affordability	**28 User affordability**	1	4	**1**	FULL

Observations regarding the number of linked disclosure topics per AISI indicator:

- 11 AISI indicators are linked to 1 SASB disclosure topic, while the majority of AISI's indicators (15) are linked to more than 1 SASB disclosure topic. The average number of SASB disclosure topics per AISI indicator is 2.4.
- The two indicators covered by the higher number of disclosure topics, 5 and 9 are 'Anti-corruption program' and ' Public health and safety management plan' respectively.
- 2 AISI indicators have no alignment with SASB disclosure topics, 'Sustainability in project award' and 'Heritage assessment'.

Observations regarding the levels of alignment per AISI indicator

- the majority of AISI's indicators are either fully covered (10 indicators) or partially covered (11) by SASB's disclosure topics
- Only 1 of the indicators has low coverage
- The most common types of relevance between an AISI indicator and SASB's disclosure topics are type 3a, the case when an AISI indicator has a wider scope not adequately covered by SASB; and type 3b, i.e. the case where an AISI indicator is linked to one SASB disclosure and can only be partially covered, either because SASB has a broader scope that tackles the issue and/or has a different approach or methodology in addressing the issue.

8.6. TCFD-AISI detailed mapping findings

The TCFD Recommendations, since their launch in 2017, have known growing support by major organizations and companies globally. Many established ESG standards and frameworks have initiated an effort to align with the TCFD approach, or demonstrate their alignment, both individually

and collectively. A key driver for TCFD alignment was investors' explicit request for "international standard-setting bodies to incorporate the TCFD recommendations into their standards". Due to its widespread uptake, the mapping of AISI against the TCFD framework is of importance for AISI's mapping exercise.

Given the narrower scope of TCFD recommendations, climate-related financial disclosures, the detailed mapping of AISI is only against AISI's climate-related indicators.

Two mappings are performed against TCFD:

- Mapping of AISI indicators against TCFD 11 Recommended disclosures.
- Mapping of AISI indicators and metrics against the TCFD example metrics for non-financial companies.

Structure Compatibility

AISI		**TOPICS**	**INDICATORS**	**METRICS**
TCFD		CORE ELEMENTS	RECOMMENDED DISCLOSURES (including metrics)	
		CLIMATE-RELATED CATEGORIES	EXAMPLE METRICS	

Indicator-based mapping results

The following table shows the specific links between TCFD's recommended disclosures and AISI's indicators.

Table 65: Mapping of AISI's indicators against TCFD recommended disclosures

TCFD		**AISI**		
	RECOMMENDED DISCLOSURES	**Sustainability Topics**	**Indicators**	**Metric**
GOVERNANCE Disclose the organization's governance around climate-related risks and opportunities.	a) Describe the board's oversight of climate-related risks and opportunities.	**N/A**	**N/A**	**N/A**
	b) Describe management's role in assessing and managing climate-related risks and opportunities.	**Project Sustainability Management**	2 Sustainability management system	Implementation of a sustainable management system and reporting
STRATEGY Disclose the actual and potential impacts of climate-related	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	**Resilience**	4 Climate Risk Resilience	Existence of a climate risk adaptation plan

risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	**Resilience**	4 Climate Risk Resilience	Existence of a climate risk adaptation plan
	c) Describe the resilience of the organization's strategy, taking into consideration different climate related scenarios, including a 2°C or lower scenario.	**Resilience**	4 Climate Risk Resilience	Existence of a climate risk adaptation plan
RISK MANAGEMENT Disclose how the organization identifies, assesses, and manages climate-related risks.	a) Describe the organization's processes for identifying and assessing climate-related risks.	**N/A**	**N/A**	**N/A**
	b) Describe the organization's processes for managing climate-related risks.	**Resilience**	4 Climate Risk Resilience	Existence of a climate risk adaptation plan
		Project Sustainability Management	2 Sustainability management system	Implementation of a sustainable management system and reporting
		Project Procurement	22 Sustainability in project award	Sustainability requirements included in project tender process
	c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	**N/A**	**N/A**	**N/A**
METRICS AND TARGETS Disclose the metrics and targets used to assess and manage relevant climate related risks and opportunities where such information is material.	a) Disclose the metrics used by the organization to assess climate related risks and opportunities in line with its strategy and risk management process.	*DEPENDS ON SECTOR (see metrics mapping per sector)*		
	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	**Energy / GHG**	12 GHG emissions	Volume of Greenhouse gas emissions emitted by the project
	c) Describe the targets used by the organization to manage climate related risks and opportunities and performance against targets.	**Project Sustainability Management**	2 Sustainability management system	Implementation of a sustainable management system and reporting

The mapping table above shows that three recommended disclosures of TCFD are not covered by AISI. The remaining 10 disclosures are all linked with AISI's topics and indicators.

Considering that TCFD's recommendations refer exclusively to climate-related financial disclosures, only a few of AISI's sustainability topics and indicators were expected to be mapped against the recommendations. The table below shows the number of AISI disclosures covered by each related AISI indicator. It is observed that TCFD's disclosures are covered only by 4 (three governance and 1 environmental) out of the 28 in total sustainability indicators of AISI.

Table 66: No.of TCFD recommended disclosures addressed per each AISI indicator

AISI		No of TCFD disclosures addressed per AISI indicator
Indicators	**Metric**	
2 Sustainability management system	Implementation of a sustainable management system and reporting	3
4 Climate Risk Resilience	Existence of a climate risk adaptation plan	4
2 Sustainability management system	Implementation of a sustainable management system and reporting	2
12 GHG emissions	Volume of Greenhouse gas emissions emitted by the project	1

TCFD's recommended "disclosure a" under the "METRICS AND TARGETS" category, suggests to organizations to disclose the metrics used to assess climate related risks and opportunities in line with its strategy and risk management process. The supplemental Guidance provides illustrative examples of metrics for each of the four non-financial groups: a)Energy, b) Transportation, c)Materials and Buildings , and d)Agriculture, Food and Forest. [51]

In order to assess the coverage of the specific disclosure by AISI's indicators, a separate mapping is performed against the example metrics of the three comparable to AISI non-financial groups[52]. The following table presents this mapping by classifying the example metrics of TCFD per climate-related category[53].

Table 67: Mapping of AISI's indicators against TCFD's illustrative example metrics (classified per climate-related category)

TCFD		AISI		
CLIMATE - RELATED CATEGORY	**EXAMPLE METRICS**	**SUSTAINABILITY TOPICS**	**INDICATORS**	**METRICS**
GHG Emissions	Estimated Scope 3 emissions, including methodologies and emission factors used	**Energy / GHG**	12 GHG emissions	Volume of Greenhouse gas emissions emitted by the project
	Describe current carbon price or range of prices used	N/A	N/A	N/A
	Amount of gross global Scope 1 emissions from: (1) combustion, (2) flared hydrocarbons, (3) process emissions, (4) directly vented releases, and (5) fugitive	**Energy / GHG**	12 GHG emissions	Volume of Greenhouse gas emissions emitted by the project

[51] The example metrics are mentioned in "recommended disclosure a" under the "METRICS AND TARGETS". According to TCFD guidance "Organizations should consider providing key metrics related to GHG emissions, energy, water, land use, and, if relevant, investments in climate adaptation and mitigation that address potential financial aspects of shifting demand, expenditures, asset valuation, and cost of financing.(Source: Recommendations of the Task Force on Climate-related Financial disclosures - Final Document, June 2017

[52] The fourth group "Agriculture, Food and Forest" is excluded from this mapping exercise together with the Financial Groups' example metrics because these groups do not fall inside ASSI's scope.

[53] The mapping of ASSI's indicators against the example metrics of each of the three non-financial groups can be found in the APPENDIX F.

	emissions/leaks			
	A breakdown of reserves by type and an indication of associated emissions factors to provide insight into potential future emissions	**Energy / GHG**	12 GHG emissions	Volume of Greenhouse gas emissions emitted by the project
	Road vehicles—Geographic breakdown of GHG emissions: emissions and/or emission intensity of products for key geographies against regulatory requirements/targets	**Energy / GHG**	12 GHG emissions	Volume of Greenhouse gas emissions emitted by the project
	Life cycle reporting of GHG emissions of Transportation products (air, ship, rail, truck, auto)	**Energy / GHG**	12 GHG emissions	Volume of Greenhouse gas emissions emitted by the project
	GHG emissions intensity from buildings (by occupants or square area) and from new construction and redevelopment	**Energy / GHG**	12 GHG emissions	N/A
	A breakdown of reserves and an indication of associated emissions factors to provide insight into potential future emissions	**Energy / GHG**	12 GHG emissions	Volume of Greenhouse gas emissions emitted by the project
Risk Adaptation & Mitigation	Revenues/savings from investments in low-carbon alternatives (e.g., R&D, equipment, products or services)	N/A	N/A	N/A
	Expenditures (OpEx) for low carbon alternatives (e.g., R&D, equipment, products, or services)	N/A	N/A	N/A
	Proportion of capital allocation to long-lived assets versus short-term assets	N/A	N/A	N/A
	Investment (CapEx) in low carbon alternatives (e.g., capital equipment or assets)	**Project Sustainability Management**	2 Sustainability management system	Implementation of a sustainable management system and reporting
	Capital payback periods or return on capital deployed	N/A	N/A	N/A
	Revenues/savings from investments in low-carbon alternatives (e.g., R&D, equipment, products or services)	N/A	N/A	N/A
	Vehicle sales (historical, current and projected) by category (e.g., gas vehicles, diesel vehicles, battery electric vehicles, plug-in hybrid electric vehicles, alternative-powered vehicles (LPG, CNG, fuel cells, compressed air)	N/A	N/A	N/A
	Energy Efficiency Design Index (EEDI) for new ships	N/A	N/A	N/A
	Expenditures (OpEx) for R&D for low-carbon transportation equipment or transportation services	N/A	N/A	N/A

	Investments (CapEx) in low-carbon transportation equipment or transportation services		**Project Sustainability Management**	2 Sustainability management system	Implementation of a sustainable management system and reporting
	Revenues/savings from investments in low-carbon alternatives (e.g., R&D, equipment, products or services)		**Project Sustainability Management**	2 Sustainability management system	Implementation of a sustainable management system and reporting
	Expenditures (OpEx) for low-carbon alternatives (e.g., R&D, technology, products, or services)		N/A	N/A	N/A
	For each property type, the percentage certified as sustainable		N/A	N/A	N/A
	Investment (CapEx) in low-carbon alternatives (e.g., capital equipment or assets)		**Materials lifecycle approach**	15 Reduction of Waste	N/A
			Project Sustainability Management	2 Sustainability management system	Implementation of a sustainable management system and reporting
Water	Percent water withdrawn in regions with high or extremely high baseline water stress		**Water**	11 Freshwater withdrawal	Annual volume of fresh water used by the infrastructure project
	Assets committed in regions with high or extremely high baseline water stress		**Water**	11 Freshwater withdrawal	
	Percent of fresh water withdrawn in regions with high or extremely high baseline water stress		**Water**	11 Freshwater withdrawal	Annual volume of fresh water used by the infrastructure project
	Building water intensity (by occupants or square area)		**Water**	11 Freshwater withdrawal	N/A
Energy/Fuel	Indicative costs of supply for current and committed future projects (e.g., through a cost curve or indicative price range. This could be broken down by product, asset, or geography)		N/A	N/A	N/A
	Sales-weighted average fleet fuel economy, by region and weight/number of people transported		N/A	N/A	N/A
	Total fuel consumed and percent renewable for road, airlines, marine, rail (?)		**Energy / GHG**	13 Efficient use of energy	Amount of energy consumed by the project
	Total energy consumed, broken down by source (e.g., purchased electricity and renewable sources)		**Energy / GHG**	13 Efficient use of energy	Amount of energy consumed by the project
	Total fuel consumed—percentage from coal, natural gas, oil, and renewable sources		**Energy / GHG**	13 Efficient use of energy	Amount of energy consumed by the project
	Total energy intensity—by tons of product, amount of sales, number of products depending on informational value		**Energy / GHG**	13 Efficient use of energy	N/A
	Building energy intensity (by occupants or square		**Energy / GHG**	13 Efficient use of energy	N/A

	area)			
Location	Area of buildings, plants or properties located in designated flood hazard areas	**Resilience**	4 Climate Risk Resilience	N/A

Each example metric is linked to either one or no indicators/metrics from AISI, except for the "Investment (CapEx) in low-carbon alternatives (e.g., capital equipment or assets)" which is partially covered by two metrics of AISI.

Table 68: Example metrics of TCFD non-financial groups that are not covered by AISI's indicators/metrics (per climate-related category)

TCFD	
CLIMATE - RELATED CATEGORY	**EXAMPLE METRICS**
GHG Emissions	Describe current carbon price or range of prices used
Risk Adaptation & Mitigation	Revenues/savings from investments in low-carbon alternatives (e.g., R&D, equipment, products or services)
	Expenditures (OpEx) for low carbon alternatives (e.g., R&D, equipment, products, or services)
	Proportion of capital allocation to long-lived assets versus short-term assets
	Capital payback periods or return on capital deployed
	Vehicle sales (historical, current and projected) by category (e.g., gas vehicles, diesel vehicles, battery electric vehicles, plug-in hybrid electric vehicles, alternative-powered vehicles (LPG, CNG, fuel cells, compressed air)
	Energy Efficiency Design Index (EEDI) for new ships
	Expenditures (OpEx) for R&D for low-carbon transportation equipment or transportation services
	For each property type, the percentage certified as sustainable
Energy/Fuel	Indicative costs of supply for current and committed future projects (e.g., through a cost curve or indicative price range. This could be broken down by product, asset, or geography)
	Sales-weighted average fleet fuel economy, by region and weight/number of people transported

Similarly to the mapping performed against TCFD's disclosures, the mapping against its example metrics reveals that the metrics are related to 6 out of the total 28 AISI indicators, as shown in the following table. The GHG emissions indicator is the most used in the mapping as it addresses 7 example metrics of TCFD.

Table 69: No. of TCFD example metrics (for non-financial groups) addressed per each AISI indicator

AISI		No of TCFD metrics addressed per AISI indicator
Indicators	**Metrics**	
2 Sustainability management system	Implementation of a sustainable management system and reporting	4
4 Climate Risk Resilience	N/A	1
11 Freshwater withdrawal	Annual volume of fresh water used by the infrastructure project	4
12 GHG emissions	Volume of Greenhouse gas emissions emitted by the project	7
13 Efficient use of energy	Amount of energy consumed by the project	5
15 Reduction of Waste	N/A	1

Table 70: TCFD's recommended disclosures mapping results

TCFD RECOMMENDED DISCLOSURES		No of AISI's indicators	COVERAGE LEVEL BY AISI
GOVERNANCE **Disclose the organization's governance around climate-related risks and opportunities.**	a) Describe the board's oversight of climate-related risks and opportunities.	1	**NONE**
	b) Describe management's role in assessing and managing climate - related risks and opportunities.	1	PARTIAL
STRATEGY **Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.**	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.	1	PARTIAL
	b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.	1	PARTIAL
	c) Describe the resilience of the organization's strategy, taking into consideration different climate related scenarios, including a 2°C or lower scenario.	1	PARTIAL
RISK MANAGEMENT **Disclose how the organization identifies, assesses, and manages climate-related risks.**	a) Describe the organization's processes for identifying and assessing climate related risks.	1	**NONE**
	b) Describe the organization's processes for managing climate related risks.	3	PARTIAL
	c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	1	**NONE**

METRICS AND TARGETS Disclose the metrics and targets used to assess and manage relevant climate related risks and opportunities where such information is material.	a) Disclose the metrics used by the organization to assess climate related risks and opportunities in line with its strategy and risk management process.	*DEPENDS ON SECTOR (see metrics mapping per sector)*	
	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	1	HIGH
	c) Describe the targets used by the organization to manage climate related risks and opportunities and performance against targets.	1	HIGH

The above mapping table shows that 7 out of 10[54] of the recommended disclosures are either partially or fully covered. The two disclosures that are fully covered are part of the METRICS AND TARGETS category and refer to Scope1, Scope2, Scope 3 Emissions and the organizations' targets towards climate-related issues.

It is also observed that each disclosure is linked with 1 AISI indicator, except for "RISK MANAGEMENT" disclosure b which is covered partially by 3 AISI indicators.

In some cases, due to its position as a framework, TCFD includes more detailed specifications than AISI of how to disclose some topics. This is still considered high alignment, considering that AISI is not a recommendation tool, and the objective is to address TCFD's recommendations by permitting users to follow them.

Table 71: TCFD's example metrics mapping results

TCDF		COVERAGE LEVEL BY AISI
CLIMATE - RELATED CATEGORY	**EXAMPLE METRICS**	
GHG Emissions	Estimated Scope 3 emissions, including methodologies and emission factors used	HIGH
	Describe current carbon price or range of prices used	NONE
	Amount of gross global Scope 1 emissions from: (1) combustion, (2) flared hydrocarbons, (3) process emissions, (4) directly vented releases, and (5) fugitive emissions/leaks	HIGH
	A breakdown of reserves by type and an indication of associated emissions factors to provide insight into potential future emissions	PARTIAL
	Road vehicles—Geographic breakdown of GHG emissions: emissions and/or emission intensity of products for key geographies against regulatory requirements/targets	PARTIAL

[54] The disclosures are totally 11, but the mapping of disclosure a (in metrics and targets) is not considered here. So the considered disclosures for alignment are assumed to be 10 in this table.

	Life cycle reporting of GHG emissions of Transportation products (air, ship, rail, truck, auto)	HIGH
	GHG emissions intensity from buildings (by occupants or square area) and from new construction and redevelopment	PARTIAL
	A breakdown of reserves and an indication of associated emissions factors to provide insight into potential future emissions	HIGH
Risk Adaptation & Mitigation	Revenues/savings from investments in low-carbon alternatives (e.g., R&D, equipment, products or services)	NONE
	Expenditures (OpEx) for low carbon alternatives (e.g., R&D, equipment, products, or services)	NONE
	Proportion of capital allocation to long-lived assets versus short-term assets	NONE
	Investment (CapEx) in low carbon alternatives (e.g., capital equipment or assets)	PARTIAL
	Capital payback periods or return on capital deployed	NONE
	Revenues/savings from investments in low-carbon alternatives (e.g., R&D, equipment, products or services)	NONE
	Vehicle sales (historical, current and projected) by category (e.g., gas vehicles, diesel vehicles, battery electric vehicles, plug-in hybrid electric vehicles, alternative-powered vehicles (LPG, CNG, fuel cells, compressed air)	NONE
	Energy Efficiency Design Index (EEDI) for new ships	NONE
	Expenditures (OpEx) for R&D for low-carbon transportation equipment or transportation services	NONE
	Investments (CapEx) in low-carbon transportation equipment or transportation services	PARTIAL
	Revenues/savings from investments in low-carbon alternatives (e.g., R&D, equipment, products or services)	PARTIAL
	Expenditures (OpEx) for low-carbon alternatives (e.g., R&D, technology, products, or services)	NONE
	For each property type, the percentage certified as sustainable	NONE
	Investment (CapEx) in low-carbon alternatives (e.g., capital equipment or assets)	PARTIAL
Water	Percent water withdrawn in regions with high or extremely high baseline water stress	PARTIAL
	Assets committed in regions with high or extremely high baseline water stress	PARTIAL
	Percent of fresh water withdrawn in regions with high or extremely high baseline water stress	PARTIAL
	Building water intensity (by occupants or square area)	PARTIAL

Energy/Fuel	Indicative costs of supply for current and committed future projects (e.g., through a cost curve or indicative price range. This could be broken down by product, asset, or geography)	NONE
	Sales-weighted average fleet fuel economy, by region and weight/number of people transported	NONE
	Total fuel consumed and percent renewable for road, airlines, marine, rail (?)	HIGH
	Total energy consumed, broken down by source (e.g., purchased electricity and renewable sources)	PARTIAL
	Total fuel consumed—percentage from coal, natural gas, oil, and renewable sources	PARTIAL
	Total energy intensity—by tons of product, amount of sales, number of products depending on informational value	PARTIAL
	Building energy intensity (by occupants or square area)	PARTIAL
Location	Area of buildings, plants or properties located in designated flood hazard areas	PARTIAL

From the above table, it can be observed that the majority of climate related categories of the metrics of TCFD are highly addressed with AISI indicators covering most of their metrics. The least addressed climate-related category of TCFD metrics is "Risk adaptation & Mitigation", in which 10 out of 15 corresponding metrics are not covered by any of AISI's indicators and disclosures. The climate-related category that is addressed the most by AISI's indicators is "GHG Emissions" in which almost 90% of its metrics are addressed. Half of its metrics in particular are highly addressed. As for the categories of "water" and "location, all their example metrics are partially addressed by AISI's indicators.

8.7. EU NFRD-AISI detailed mapping findings

The detailed mapping methodology is applicable in the case of the NFRD. It is a cross-industry system like AISI with reporting rules that covers all E,S,G aspects and with a comparable to AISI structure.

Structure Compatibility

AISI	**SUSTAINABILITY TOPICS**	**INDICATORS**	**METRICS**
EU NFRD	MATTERS	EXAMPLE KPIs & CLIMATE-RELATED KPIs	

Table 72: Mapping of AISI's indicators against EU NFRD's themes and KPI's

EU NFRD			AISI		
MATTERS	**THEMES**	**KPI**	**SUSTAINABILITY TOPICS**	**INDICATORS**	**METRICS**
Environmental	**Energy**	Total energy consumption and / or production) from	**Energy / GHG**	13 Efficient use of energy	Volume of Greenhouse gas emissions emitted by

matters		renewable and non-renewable sources			the project
		Energy efficiency target		N/A	N/A
		Renewable energy consumption and/or production target.		N/A	N/A
		Energy performance and improvements in energy performance		N/A	N/A
		Energy consumption from non-renewable sources and energy intensity		13 Efficient use of energy	N/A
	Material disclosures on pollution prevention and control		**Project Sustainability Management**	2 Sustainability management system	Implementation of a sustainable management system and reporting
			Stakeholder Engagement	10 Public health and safety management plan	Implementation of a public health and safety management plan
	Environmental impact from energy use		**Air Quality**	16 Fine particulate matter emission	Mean PM2.5 and PM10 emissions
			Energy / GHG	12 GHG emissions	Volume of Greenhouse gas emissions emitted by the project
	Direct and indirect atmospheric emissions	Direct GHG emissions from sources owned or controlled by the company (Scope 1)	**Energy / GHG**	12 GHG emissions	Volume of Greenhouse gas emissions emitted by the project
		Indirect GHG emissions from the generation of acquired and consumed electricity, steam, heat, or cooling (collectively referred to as "electricity") (Scope 2)			
		All indirect GHG emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions (Scope 3)			
		GHG absolute emissions target	N/A	N/A	N/A
		Emissions of other pollutants (measured in absolute value	**Air Quality**	16 Fine particulate matter emission	Mean PM2.5 and PM10 emissions

		and as intensity)			
	Use and protection of natural resources (e.g. water, land) and related protection of biodiversity	Extraction of natural resources	**Water**	11 Freshwater withdrawal	Annual volume of fresh water used by the infrastructure project
			Biodiversity	18 Watershed Management	Existence of an Integrated Watershed Assessment and Management Program
				19 Previously Disturbed Land	%
		Impacts and dependencies on natural capital and biodiversity;	**Water**	11 Freshwater withdrawal	Annual volume of fresh water used by the infrastructure project
			Biodiversity	18 Watershed Management	Existence of an Integrated Watershed Assessment and Management Program
				19 Previously Disturbed Land	%
	Waste management	Waste management (e.g. recycling rates)	**Materials lifecycle approach**	15 Reduction of Waste	Percentage of total waste diverted from incineration and landfills
	Environmental impacts from transportation or from the use and disposal of products and services		**Materials lifecycle approach**	14 Materials lifecycle thinking	Consideration of materials lifecycle impacts
	Development of green products and services		**Materials lifecycle approach**	14 Materials lifecycle thinking	Consideration of materials lifecycle impacts
Climate	**Physical risks**	Assets committed in regions likely to become more exposed to acute or chronic physical climate risks	**Resilience**	N/A	N/A
				4 Climate Risk Resilience	Implementation of a climate risk adaptation plan

	Products and services	Percent turnover in the reporting year from products or services associated with activities that meet the criteria for substantially contributing to mitigation of or adaptation to climate change as set out in the Regulation on the establishment of a framework to facilitate sustainable investment (EU taxonomy). And / or Percent investment (CapEx) and/or expenditures (OpEx) in the reporting year for assets or processes associated with activities that meet the criteria for substantially contributing to mitigation of or adaptation to climate change as set out in the Regulation on the establishment of a framework to facilitate sustainable investment (EU taxonomy).	**Resilience**	N/A	N/A
	Green Finance	Climate-related Green Bond Ratio: Total amount of green bonds outstanding (at year end) divided by (a 5-year rolling average of) total amount of bonds outstanding and / or, Climate-related Green Debt Ratio: Total amount of all green debt instruments outstanding (at year-end) divided by (a 5-year rolling average of) total amount of all debt outstanding.	N/A	N/A	N/A
	Disclosure on natural capitals (e.g. water, soil productivity or biodiversity) for companies whose business models are dependent on natural capitals threatened by climate change		**Water**	11 Freshwater withdrawal	Annual volume of fresh water used by the infrastructure project
			Biodiversity	18 Watershed Management	Existence of an Integrated Watershed Assessment and Management Program
			Biodiversity	19 Previously Disturbed Land	Percentage of land used by the project that has been previously disturbed or maintained as non-disturbed

	Opportunities of efforts engaging with a transition to a low carbon and climate-resilient economy, aligned with key EU policies, carrying out climate change mitigation / adaptation activities.	Revenues from low-carbon products	N/A	N/A	N/A
		Revenues from product or services applying to the circular economy model,	N/A	N/A	N/A
		R&D expenditures in circular economy production	N/A	N/A	N/A
Social and employee matters	**Implementation of fundamental conventions of the International Labour Organisation**	Employees entitled to parental leave, by gender	**Gender**	3 Gender equality, inclusiveness and empowerment	Existence and Implementation of a comprehensive gender action plan (GAP).
			Working conditions	23 Labor rights	Integration of International Labour Organisation's (ILO) fundamental conventions
	Diversity issues, such as gender diversity and equal treatment in employment and occupation (including age, gender, sexual orientation, religion, disability, ethnic origin and other relevant aspects	Gender diversity and other aspects of diversity;	**Gender**	3 Gender equality, inclusiveness and empowerment	Existence and Implementation of a comprehensive gender action plan (GAP).
		Number of persons with disabilities employed.			
	Employment issues, including employee consultation and/or participation, employment and working conditions	Employee consultation processes;	**Working Conditions**	23 Labor rights	Integration of International Labour Organisation's (ILO) fundamental conventions
		Employee turnover			
		Ratio of employees working under temporary contracts, by gender			
	Trade union relationships, including respect of trade union rights		**Working Conditions**	23 Labor rights	Integration of International Labour Organisation's (ILO) fundamental conventions
	Human capital management including management of	Average hours of training per year per employee, by gender;	Gender	3 Gender equality, inclusiveness and empowerment	Existence and Implementation of a comprehensive gender action plan (GAP).

	restructuring, career management and employability, remuneration system, training		Working conditions	26 Fair Wages	Percentage of employees who are paid a fair wage
	Health and safety at work	Workers who participate in activities with a high risk of specific accidents or diseases;	**Working conditions**	N/A	N/A
		Number of occupational accidents, types of injury or occupational diseases;		25 Frequency rates of fatal and non-fatal occupational injuries	Number of fatal and non-fatal occupational injuries
	Consumer relations, including consumer satisfaction, accessibility, products with possible effects on consumers' health and safety		**Stakeholder engagement**	6 Stakeholder engagement plan	Existence of a meaningful and inclusive stakeholder engagement process and plan.
	Impacts on vulnerable consumers		**Service Affordability**	28 User affordability	Ability to pay (ATP) of project beneficiaries
	Responsible marketing and research		N/A	N/A	N/A
	Community relations, including social and economic development of local communities.		**Stakeholder engagement**	6 Stakeholder engagement plan	Existence of a meaningful and inclusive stakeholder engagement process and plan.
				7 Free, Prior and Informed Consent (FPIC)	Obtainment of Free, Prior and Informed Consent (FPIC)
				8 Involuntary Resettlement	People physically or economically impacted by the project
Respect for human rights	**Human rights due diligence**	Occurrences of severe impacts on human rights relating to its activities or decisions	**Stakeholder engagement**	6 Stakeholder engagement plan	Existence of a meaningful and inclusive stakeholder engagement process and plan.
				7 Free, Prior and Informed Consent (FPIC)	Obtainment of Free, Prior and Informed Consent (FPIC)
				8 Involuntary Resettlement	People physically or economically impacted by the project

		Process for receiving and addressing complaints, and mitigating and providing remedies to human rights violations	**Stakeholder engagement**	6 Stakeholder engagement plan	Existence of a meaningful and inclusive stakeholder engagement process and plan.
		Operations and suppliers at significant risk of human rights violations	**Sustainable Supply chain**	20 Project supply chain sustainability management	Existence of a sustainable procurement plan and compliance monitoring
	Processes and arrangements implemented to prevent human rights abuses	Processes and measures for preventing trafficking in human beings for all forms of exploitation, forced or compulsory labour and child labour, precarious work, and unsafe working conditions, in particular as regards geographic areas at higher risk of exposure to abuse	**Working Conditions**	23 Labor rights	Integration of International Labour Organisation's (ILO) fundamental conventions
		How accessible their facilities, documents and websites are to people with disabilities	N/A	N/A	N/A
		Respect for freedom of association	**Working Conditions**	23 Labor rights	Integration of International Labour Organisation's (ILO) fundamental conventions
		Engagement with relevant stakeholders.	**Stakeholder engagement**	6 Stakeholder engagement plan	Existence of a meaningful and inclusive stakeholder engagement process and plan.
Anti-corruption and bribery matters	**Management of anti-corruption and bribery matters and occurrences**	Anti-corruption policies, procedures and standards;	**Anti-corruption**	21 Anti-corruption program	Implementation of an anti-corruption program
		Criteria used in corruption-related risk assessments;			
		Internal control processes and resources allocated to preventing corruption and bribery;			
		Employees having received appropriate training;			
		Use of whistleblowing mechanisms;			
		Number of pending or completed legal actions on anti-competitive behaviour.			

Supply chain matters	**Supply chain management**	Monitoring suppliers on: — labour practices, including child labour and forced labour, precarious work, wages, unsafe working conditions (including building safety, protective equipment, workers' health) — trafficking in human beings and other human rights matters — greenhouse gas emissions and other types of water and environmental pollution — deforestation and other biodiversity-related risks Monitoring the company's impact on suppliers, for instance, its payment terms and average payment periods.	**Sustainable Supply chain**	20 Project supply chain sustainability management	Existence of a sustainable procurement plan and compliance monitoring
Conflict minerals	**Responsible supply chains for tin, tantalum, tungsten and gold from conflict-affected and high-risk areas.**	— the proportion of direct relevant suppliers having adopted and implemented a conflict minerals due diligence policy consistent with the OECD Due Diligence Guidance; — the proportion of responsibly-sourced tin, tantalum, tungsten or gold originating in conflict-affected and high-risk areas; and — the proportion of relevant customers contractually requiring conflict minerals due diligence information under the OECD Due Diligence Guidance.	N/A	N/A	N/A

The above table shows that the least addressed sustainability matter of EU NFRD is the climate category. This category consists of 6 themes and 5 KPIs that cannot be covered AISI's indicators mainly because EU NFRD topics require economic values to express their KPI's. For example physical risks are indicated through assets while products and services are expressed through percent turnover. For the above mapping, 21 out of 28 AISI indicators were used to address all KPIs. The indicators that address more EU NFRD KPIs are "6 Stakeholder engagement" plan and "23 Labor rights", which are used to cover 5 KPIs.

The mapping against EU NFRD's themes and KPIs by AISI's respective topics and indicators was also used to record which themes of NFRD were not addressed by AISI. These are in total 6 out of 22 themes and can be found in the following table.

Table 73: Mapping results against EU NFRD's themes

EU NFRD		AISI ADDRESSING THEME
MATTERS	**THEMES**	
Environmental matters	Energy	**YES**
	Material disclosures on pollution prevention and control	**YES**
	Environmental impact from energy use	**YES**
	Direct and indirect atmospheric emissions	**YES**
	Use and protection of natural resources (e.g. water, land) and related protection of biodiversity	**YES**
	Waste management	**YES**
	Environmental impacts from transportation or from the use and disposal of products and services	**YES**
	Development of green products and services	**YES**
Climate	Physical risks	**YES**
	Products and services	**YES**
	Green Finance	**NO**
	Disclosure on natural capitals(e.g. water, soil productivity or biodiversity) for companies whose business models are dependent on natural capitals threatened by climate change	**YES**
	Opportunities of efforts engaging with a transition to a low carbon and climate-resilient economy, aligned with key EU policies, carrying out climate change mitigation / adaptation activities.	**NO**
Social and employee matters	Implementation of fundamental conventions of the International Labour Organisation	**YES**
	Diversity issues, such as gender diversity and equal treatment in employment and occupation (including age, gender, sexual orientation, religion, disability, ethnic origin and other relevant aspects	**YES**
	Employment issues, including employee consultation and/or participation, employment and working conditions	**YES**
	Trade union relationships, including respect of trade union rights	**YES**
	Human capital management including management of restructuring, career management and employability, remuneration system, training	**NO**

	Health and safety at work	**YES**
	Consumer relations, including consumer satisfaction, accessibility, products with possible effects on consumers' health and safety	**YES**
	Impacts on vulnerable consumers	**YES**
	Responsible marketing and research	**NO**
	Community relations, including social and economic development of local communities.	**YES**
Respect for human rights	Human rights due diligence	**YES**
	Processes and arrangements implemented to prevent human rights abuses	**YES**
Anti-corruption and bribery matters	Management of anti-corruption and bribery matters and occurrences	**YES**
Supply chain matters	Supply chain management	**YES**
Conflict minerals	Responsible supply chains for tin, tantalum, tungsten and gold from conflict-affected and high-risk areas.	**NO**

The following table presents the level of coverage for each KPI. [55]

Table 74: Indicator -based mapping results against EU NFRD's KPI's

EU NFRD		COVERAGE LEVEL BY AISI
THEMES	**KPIs**	
Energy	Total energy consumption and / or production) from renewable and non-renewable sources	HIGH
	Energy efficiency target	NONE
	Renewable energy consumption and/or production target.	NONE
	Energy performance and improvements in energy performance	NONE
	Energy consumption from non-renewable sources and **energy intensity**	PARTIAL
Direct and indirect atmospheric emissions	Direct GHG emissions from sources owned or controlled by the company (Scope 1)	HIGH
	Indirect GHG emissions from the generation of acquired and consumed electricity, steam, heat, or cooling (collectively referred to as "electricity") (Scope 2)	HIGH

[55] The table does not include themes that do not relate to KPIs.

	All indirect GHG emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions (Scope 3)	HIGH
	GHG absolute emissions target	NONE
	Emissions of other pollutants (measured in absolute value and as intensity)	PARTIAL
Use and protection of natural resources (e.g. water, land) and related protection of biodiversity	Extraction of natural resources	HIGH
	Impacts and dependencies on natural capital and biodiversity;	HIGH
Waste management	Waste management (e.g. recycling rates)	HIGH
Physical risks	Assets committed in regions likely to become more exposed to acute or chronic physical climate risks	NONE
Products and services	Percent turnover in the reporting year from products or services associated with activities that meet the criteria for substantially contributing to mitigation of or adaptation to climate change as set out in the Regulation on the establishment of a framework to facilitate sustainable investment (EU taxonomy). And / or Percent investment (CapEx) and/or expenditures (OpEx) in the reporting year for assets or processes associated with activities that meet the criteria for substantially contributing to mitigation of or adaptation to climate change as set out in the Regulation on the establishment of a framework to facilitate sustainable investment (EU taxonomy).	NONE
Green Finance	Climate-related Green Bond Ratio: Total amount of green bonds outstanding (at year end) divided by (a 5-year rolling average of) total amount of bonds outstanding and / or, Climate-related Green Debt Ratio: Total amount of all green debt instruments outstanding (at year-end) divided by (a 5-year rolling average of) total amount of all debt outstanding.	NONE
Opportunities of efforts engaging with a transition to a low carbon and climate-resilient economy,	Revenues from low-carbon products	NONE
	Revenues from product or services applying to the circular economy model,	NONE

aligned with key EU policies, carrying out climate change mitigation / adaptation activities.	R&D expenditures in circular economy production	NONE
Implementation of fundamental conventions of the International Labour Organisation	Employees entitled to parental leave, by gender	HIGH
Diversity issues, such as gender diversity and equal treatment in employment and occupation (including age, gender, sexual orientation, religion, disability, ethnic origin and other relevant aspects	Gender diversity and other aspects of diversity;	HIGH
	Number of persons with disabilities employed.	PARTIAL
Employment issues, including employee consultation and/or participation, employment and working conditions	Employee consultation processes;	HIGH
	Employee turnover	HIGH
	Ratio of employees working under temporary contracts, by gender	HIGH
Human capital management including management of restructuring, career management and employability, remuneration system, training	Average hours of training per year per employee, by gender;	PARTIAL
Health and safety at work	Workers who participate in activities with a high risk of specific accidents or diseases;	NONE
	Number of occupational accidents, types of injury or occupational diseases;	HIGH
Human rights due diligence	Occurrences of severe impacts on human rights relating to its activities or decisions	HIGH
	Process for receiving and addressing complaints, and mitigating and providing remedies to human rights violations	HIGH
	Operations and suppliers at significant risk of human rights violations	HIGH
Processes and arrangements implemented to prevent human rights abuses	Processes and measures for preventing trafficking in human beings for all forms of exploitation, forced or compulsory labour and child labour, precarious work, and unsafe working conditions, in particular as regards geographic areas at higher risk of exposure to abuse	HIGH
	How accessible their facilities, documents and websites are to people with disabilities	NONE
	Respect for freedom of association	HIGH

	Engagement with relevant stakeholders.	HIGH
Management of anti-corruption and bribery matters and occurrences	Anti-corruption policies, procedures and standards;	HIGH
	Criteria used in corruption-related risk assessments;	NONE
	Internal control processes and resources allocated to preventing corruption and bribery;	HIGH
	Employees having received appropriate training;	HIGH
	Use of whistleblowing mechanisms;	HIGH
	Number of pending or completed legal actions on anti-competitive behaviour.	NONE
Supply chain management	Monitoring suppliers on: — labour practices, including child labour and forced labour, precarious work, wages, unsafe working conditions (including building safety, protective equipment, workers' health) — trafficking in human beings and other human rights matters — greenhouse gas emissions and other types of water and environmental pollution — deforestation and other biodiversity-related risks	HIGH
	Monitoring the company's impact on suppliers, for instance, its payment terms and average payment periods.	HIGH
Responsible supply chains for tin, tantalum, tungsten and gold from conflict-affected and high-risk areas.	— the proportion of direct relevant suppliers having adopted and implemented a conflict minerals due diligence policy consistent with the OECD Due Diligence Guidance; — the proportion of responsibly-sourced tin, tantalum, tungsten or gold originating in conflict-affected and high-risk areas; and — the proportion of relevant customers contractually requiring conflict minerals due diligence information under the OECD Due Diligence Guidance.	NONE

The indicator based mapping shows that more than half of the EU NFRD KPIs are highly covered by AISI. Also, only 15 out of the 44 total KPIs are not covered. These are shown in the following table:

Table 75: EU NFRD KPIs that are not covered by AISI's indicators/metrics

EU NFRD	
THEMES	**KPIs**
Energy	Energy efficiency target
	Renewable energy consumption and/or production target.
	Energy performance and improvements in energy performance
Direct and indirect atmospheric emissions	GHG absolute emissions target

Physical risks	Assets committed in regions likely to become more exposed to acute or chronic physical climate risks
Products and services	Percent turnover in the reporting year from products or services associated with activities that meet the criteria for substantially contributing to mitigation of or adaptation to climate change as set out in the Regulation on the establishment of a framework to facilitate sustainable investment (EU taxonomy). And / or Percent investment (CapEx) and/or expenditures (OpEx) in the reporting year for assets or processes associated with activities that meet the criteria for substantially contributing to mitigation of or adaptation to climate change as set out in the Regulation on the establishment of a framework to facilitate sustainable investment (EU taxonomy).
Green Finance	Climate-related Green Bond Ratio: Total amount of green bonds outstanding (at year end) divided by (a 5-year rolling average of) total amount of bonds outstanding and / or, Climate-related Green Debt Ratio: Total amount of all green debt instruments outstanding (at year-end) divided by (a 5-year rolling average of) total amount of all debt outstanding.
Opportunities of efforts engaging with a transition to a low carbon and climate-resilient economy, aligned with key EU policies, carrying out climate change mitigation / adaptation activities	Revenues from low-carbon products
	Revenues from product or services applying to the circular economy model,
	R&D expenditures in circular economy production
Health and safety at work	Workers who participate in activities with a high risk of specific accidents or diseases;
Processes and arrangements implemented to prevent human rights abuses	How accessible their facilities, documents and websites are to people with disabilities
Management of anti-corruption and bribery matters and occurrences	Criteria used in corruption-related risk assessments;
	Number of pending or completed legal actions on anti-competitive behaviour.
Responsible supply chains for tin, tantalum, tungsten and gold from conflict-affected and high-risk areas.	— the proportion of direct relevant suppliers having adopted and implemented a conflict minerals due diligence policy consistent with the OECD Due Diligence Guidance; — the proportion of responsibly-sourced tin, tantalum, tungsten or gold originating in conflict-affected and high-risk areas; and — the proportion of relevant customers contractually requiring conflict minerals due diligence information under the OECD Due Diligence Guidance.

8.8. EU SFDR-AISI detailed mapping findings

Structure Compatibility

AISI	TOPICS	INDICATORS	METRICS
EU SFDR	MATTERS	PRINCIPAL ADVERSE SUSTAINABILITY IMPACT INDICATORS & ADDITIONAL ADVERSE SUSTAINABILITY IMPACT INDICATORS	METRICS (expressed in market value)

Table 76: Mapping of AISI against EU SFDR's Principal & Additional Adverse Impact Indicators

EU SFDR Draft Regulatory Technical Standards (RTS)			AISI		
MATTERS	**PRINCIPAL ADVERSE SUSTAINABILITY IMPACT INDICATORS**	**METRICS**	**TOPICS**	**INDICATORS**	**METRICS**
Greenhouse gas emissions	**GHG emissions**	Scope 1 GHG emissions	**Energy / GHG**	**12 GHG emissions**	Volume of Greenhouse gas emissions emitted by the project
		Scope 2 GHG emissions			
		Scope 3 GHG emissions (from January 1,2023)			
		Total GHG emissions			
	Carbon footprint	Carbon footprint		**12 GHG emissions**	Volume of Greenhouse gas emissions emitted by the project
	GHG intensity of investee companies	GHG intensity of investee companies		**12 GHG emissions**	**N/A**
	Exposure to companies active in the fossil fuel sector	Share of investments in companies active in the fossil fuel sector	**N/A**	**N/A**	**N/A**
	Share of non-renewable energy consumption and production	Share of non-renewable energy consumption and non-renewable energy production of investee companies from non-renewable energy sources compared to renewable energy sources, expressed as a percentage	**Energy / GHG**	**13 Efficient use of energy**	Amount of energy consumed by the project
	Energy consumption intensity per high impact climate sector	Energy consumption in GWh per million EUR of revenue of investee companies, per high impact climate sector		**13 Efficient use of energy**	**N/A**
Biodiversity	**Activities negatively affecting biodiversity-sensitive areas**	Share of investments in investee companies with sites/operations located in or near to biodiversity-sensitive areas	**Biodiversity**	**17 Threatened species**	Number of Aquatic and Terrestrial Species Impacted (Fauna and Flora)

		where activities of those investee companies negatively affect those areas			
Water	**Emissions to water**	Tonnes of emissions to water generated by investee companies per million EUR invested, expressed as a weighted average	**Biodiversity**	**18 Watershed Management**	Existence of an Integrated Watershed Assessment and Management Program
Waste	**Hazardous waste ratio**	Tonnes of hazardous waste generated by investee companies per million EUR invested, expressed as a weighted average	**Stakeholder Engagement**	**10 Public health and safety management plan**	Implementation of a public health and safety management plan
Fossil Fuels	**Exposure to fossil fuels through real estate assets**	Share of investments in real estate assets involved in the extraction, storage, transport or manufacture of fossil fuels	**N/A**	**N/A**	**N/A**
Energy efficiency	**Exposure to energy-inefficient real estate assets**	Share of investments in energy-inefficient real estate assets	**Energy / GHG**	**13 Efficient use of energy**	**Amount of energy consumed by the project**
Social and employee matters	**Violations of UN Global Compact principles and Organisation for Economic Cooperation and Development (OECD) Guidelines for Multinational Enterprises**	Share of investments in investee companies that have been involved in violations of the UNGC principles or OECD Guidelines for Multinational Enterprises	**Working Conditions**	**23 Labor rights**	Integration of International Labour Organisation's (ILO) fundamental conventions
	Lack of processes and compliance mechanisms to monitor compliance with UN Global Compact principles and OECD Guidelines for Multinational Enterprises	Share of investments in investee companies without policies to monitor compliance with the UNGC principles or OECD Guidelines for Multinational Enterprises or grievance /complaints handling mechanisms to address violations of the UNGC principles or OECD Guidelines for Multinational Enterprises		**23 Labor rights**	Integration of International Labour Organisation's (ILO) fundamental conventions
	Unadjusted gender pay gap	Average unadjusted gender pay gap of investee companies	**Gender**	**3 Gender equality, inclusiveness and empowerment**	Existence and Implementation of a comprehensive gender action plan (GAP).
	Board gender diversity	**Average ratio of female to male board members in investee companies**	**Gender**	**3 Gender equality, inclusiveness and empowerment**	**Existence and Implementation of a comprehensive gender action plan (GAP).**

	Exposure to controversial weapons (anti-personnel mines, cluster munitions, chemical weapons and biological weapons)	**Share of investments in investee companies involved in the manufacture or selling of controversial weapons**	**NOT RELEVANT**		
MATTERS	**ADDITIONAL ADVERSE SUSTAINABILITY IMPACT INDICATORS**	**METRICS**			
Emissions	**Emissions of inorganic pollutants**	Tonnes of inorganic pollutants equivalent per million EUR invested, expressed as a weighted average	**Air Quality**	**N/A**	**N/A**
	Emissions of air pollutants	Tonnes of air pollutants equivalent per million EUR invested, expressed as a weighted average		**16 Fine particulate matter emission**	Mean PM2.5 and PM10 emissions
	Emissions of ozone depletion substances	Tonnes of ozone depletion substances equivalent per million EUR invested, expressed as a weighted average		**N/A**	**N/A**
	Investments in companies without carbon emission reduction initiatives	Share of investments in investee companies without carbon emission reduction initiatives aimed at aligning with the Paris Agreement	**Energy / GHG**	**N/A**	**N/A**
Energy performance	**Breakdown of energy consumption by type of non-renewable sources of energy**	Share of energy from non-renewable sources used by investee companies broken down by each non-renewable energy source	**Energy / GHG**	**13 Efficient use of energy**	**Amount of energy consumed by the project**
Water, waste and material emissions	**Water usage and recycling**	Average amount of water consumed and reclaimed by the investee companies (in cubic meters) per million EUR of revenue of investee companies	**Water**	**11 Freshwater withdrawal**	**Annual volume of fresh water used by the infrastructure project**
		Weighted average percentage of water recycled and reused by investee companies			**N/A**
	Investments in companies without water management policies	Share of investments in investee companies without water management policies	**Water**	**18 Watershed Management**	Existence of an Integrated Watershed Assessment and Management Program
	Exposure to areas of	Share of investments in investee companies with sites located in	**Water**	**11 Freshwater**	Annual volume of fresh water used by the infrastructure

	high water stress	areas of high water stress without a water management policy		**withdrawal**	project
	Investments in companies producing chemicals	Share of investments in investee companies the activities of which fall under Division 20.2 of Annex I to Regulation (EC) No 1893/2006	**NOT RELEVANT**		
	Land degradation, desertification, soil sealing	Share of investments in investee companies the activities of which cause land degradation, desertification or soil sealing	**Biodiversity**	**19 Previously Disturbed Land**	Percentage of land used by the project that has been previously disturbed or maintained as non-disturbed
				18 Watershed Management	Existence of an Integrated Watershed Assessment and Management Program
	Investments in companies without sustainable land/ agriculture practices	Share of investments in investee companies without sustainable land/agriculture practices or policies	**Biodiversity**	**18 Watershed Management**	Existence of an Integrated Watershed Assessment and Management Program
	Investments in companies without sustainable oceans/ seas practices	Share of investments in investee companies without sustainable oceans/seas practices or policies	**Biodiversity**	**18 Watershed Management**	Existence of an Integrated Watershed Assessment and Management Program
	Non-recycled waste ratio	Tonnes of non-recycled waste generated by investee companies per million EUR invested, expressed as a weighted average	**Materials lifecycle approach**	**15 Reduction of Waste**	Percentage of total waste diverted from incineration and landfills
Biodiversity	**Natural species and protected areas**	Share of investments in investee companies whose operations affect threatened species	**Biodiversity**	**17 Threatened species**	Number of Aquatic and Terrestrial Species Impacted (Fauna and Flora)
		Share of investments in investee companies without a biodiversity protection policy covering operational sites owned, leased, managed in, or adjacent to, a protected area or an area of high biodiversity value outside protected areas			**N/A**
	Deforestation	Share of investments in companies without a policy to address deforestation	**N/A**	**N/A**	**N/A**
Green securities	**Share of securities not certified as green under a future EU**	Share of securities in investments not certified as green	**N/A**	**N/A**	**N/A**

	legal act setting up an EU Green Bond Standard				
Greenhouse gas emissions	**GHG emissions**	Scope 1 GHG emissions generated by real estate assets	**Energy / GHG**	**12 GHG emissions**	Volume of Greenhouse gas emissions emitted by the project
		Scope 2 GHG emissions generated by real estate assets			
		Scope 3 GHG emissions generated by real estate assets (From 1 January 2023)			
		Total GHG emissions generated by real estate assets			
Energy consumption	**Energy consumption intensity**	Energy consumption in GWh of owned real estate assets per square meter	**Energy / GHG**	**13 Efficient use of energy**	Amount of energy consumed by the project
Waste	**Waste production in operations**	Share of real estate assets not equipped with facilities for waste sorting and not covered by a waste recovery or recycling contract	**Materials lifecycle approach**	**15 Reduction of Waste**	**N/A**
Resource consumption	**Raw materials consumption for new construction and major renovations**	Share of raw building materials (excluding recovered, recycled and biosourced) compared to the total weight of building materials used in new construction and major renovations	**Materials lifecycle approach**	**14 Materials lifecycle thinking**	Consideration of materials lifecycle impacts
Biodiversity	**Land artificialisation**	Share of non-vegetated surface area (surfaces that have not been vegetated in ground, as well as on roofs, terraces and walls) compared to the total surface area of the plots of all assets	**N/A**	**N/A**	**N/A**
Additional Social and employee matters	**Investments in companies without workplace accident prevention policies**	Share of investments in investee companies without a workplace accident prevention policy	**Working Conditions**	**24 Occupational Health & Safety (OH&S) Management Systems**	Implementation of a Comprehensive OH&S Management System
	Rate of accidents	Rate of accidents in investee companies expressed as a weighted average	**Working Conditions**	**25 Frequency rates of fatal and non-fatal occupational injuries**	Number of fatal and non-fatal occupational injuries
	Number of days lost to injuries, accidents, fatalities or illness	Number of workdays lost to injuries, accidents, fatalities or illness of investee companies expressed as a weighted average			**N/A**

	Lack of a supplier code of conduct	Share of investments in investee companies without any supplier code of conduct (against unsafe working conditions, precarious work, child labour and forced labour)	**Sustainable Supply chain**	**20 Project supply chain sustainability management**	Existence of a sustainable procurement plan and compliance monitoring
	Lack of grievance/ complaints handling mechanism related to employee matters	Share of investments in investee companies without any grievance/complaints handling mechanism related to employee matters	**Working Conditions**	**23 Labor rights**	Integration of International Labour Organisation's (ILO) fundamental conventions
	Insufficient whistleblower protection	Share of investments in entities without policies on the protection of whistleblowers	**Working Conditions**	**23 Labor rights**	Integration of International Labour Organisation's (ILO) fundamental conventions
	Incidents of discrimination	Number of incidents of discrimination reported in investee companies expressed as a weighted average	**Working Conditions**	**23 Labor rights**	Integration of International Labour Organisation's (ILO) fundamental conventions
			Gender	**3 Gender equality, inclusi-veness and empowerment**	Existence and Implementation of a comprehensive gender action plan (GAP).
	Excessive CEO pay ratio	Average ratio within investee companies of the annual total compensation for the highest compensated individual to the median annual total compensation for all employees (excluding the highest-compensated individual)	**Working Conditions**	**26 Fair Wages**	Percentage of employees who are paid a fair wage
Human Rights	**Lack of a human rights policy**	Share of investments in entities without a human rights policy	**Stakeholder Engagement**	**7 Free, Prior and Informed Consent (FPIC)**	Obtainment of Free, Prior and Informed Consent (FPIC)
	Lack of due diligence	Share of investments in entities without a due diligence process to identify, prevent, mitigate and address adverse human rights impacts	**Project Sustainability Management**	**2 Sustainability management system**	Implementation of a sustainable management system and reporting
			Stakeholder Engagement	**6 Stakeholder engagement plan**	Existence of a meaningful and inclusive stakeholder engagement process and plan.
			Stakeholder Engagement	**7 Free, Prior and Informed Consent (FPIC)**	Obtainment of Free, Prior and Informed Consent (FPIC)
			Stakeholder Engagement	**8 Involuntary Resettlement**	People physically or economically impacted by the project

	Lack of processes and measures for preventing trafficking in human beings	Share of investments in investee companies without policies against trafficking in human beings	**NOT RELEVANT**		
	Operations and suppliers at significant risk of incidents of child labour	Share of investments in investee companies exposed to operations and suppliers at significant risk of incidents of child labour exposed to hazardous work in terms of geographic areas or type of operation	**Sustainable Supply chain**	**20 Project supply chain sustainability management**	Existence of a sustainable procurement plan and compliance monitoring
	Operations and suppliers at significant risk of incidents of forced or compulsory labour	Share of the investments in investee companies exposed to operations and suppliers at significant risk of incidents of forced or compulsory labour in terms in terms of geographic areas and/or the type of operation	**Sustainable Supply chain**	**20 Project supply chain sustainability management**	Existence of a sustainable procurement plan and compliance monitoring
	Number of identified cases of severe human rights issues and incidents	Number of cases of severe human rights issues and incidents connected to investee companies on a weighted average basis	**N/A**	**N/A**	**N/A**
Anti-corruption and anti-bribery	**Lack of anti-corruption and anti-bribery policies**	Share of investments in entities without policies on anti-corruption and anti-bribery consistent with the UN Convention against Corruption	**Anti-corruption**	**21 Anti-corruption program**	Implementation of an anti-corruption program
	Cases of insufficient action taken to address breaches of standards of anti-corruption and anti-bribery	Share of investments in investee companies with identified insufficiencies in actions taken to address breaches in procedures and standards of anti-corruption and anti-bribery			**N/A**
	Number of convictions and amount of fines for violation of anti-corruption and anti-bribery laws	Numbers of convictions and amount of fines for violations of anti-corruption and anti-bribery laws by investee companies		**N/A**	**N/A**

Table 77: Mapping results against EU SFDR's Principal & Additional Adverse Impact Indicators

EU SFDR Regulatory Technical Standards (RTS)	

MATTERS	PRINCIPAL ADVERSE SUSTAINABILITY IMPACT INDICATORS	METRICS	COVERAGE LEVEL BY AISI
Greenhouse gas emissions	GHG emissions	Scope 1 GHG emissions	HIGH
		Scope 2 GHG emissions	
		Scope 3 GHG emissions (from January 1,2023)	
		Total GHG emissions	
	Carbon footprint	Carbon footprint	HIGH
	GHG intensity of investee companies	GHG intensity of investee companies	PARTIAL
	Exposure to companies active in the fossil fuel sector	Share of investments in companies active in the fossil fuel sector	NONE
	Share of non-renewable energy consumption and production	Share of non-renewable energy consumption and non-renewable energy production of investee companies from non-renewable energy sources compared to renewable energy sources, expressed as a percentage	HIGH
	Energy consumption intensity per high impact climate sector	Energy consumption in GWh per million EUR of revenue of investee companies, per high impact climate sector	PARTIAL
Biodiversity	Activities negatively affecting biodiversity- sensitive areas	Share of investments in investee companies with sites/operations located in or near to biodiversity-sensitive areas where activities of those investee companies negatively affect those areas	PARTIAL
Water	Emissions to water	Tonnes of emissions to water generated by investee companies per million EUR invested, expressed as a weighted average	HIGH
Waste	Hazardous waste ratio	Tonnes of hazardous waste generated by investee companies per million EUR invested, expressed as a weighted average	PARTIAL
Fossil Fuels	Exposure to fossil fuels through real estate assets	Share of investments in real estate assets involved in the extraction, storage, transport or manufacture of fossil fuels	NONE
Energy efficiency	Exposure to energy- inefficient real estate assets	Share of investments in energy-inefficient real estate assets	HIGH
Social and employee matters	Violations of UN Global Compact principles and OECD Guidelines for Multinational Enterprises	Share of investments in investee companies that have been involved in violations of the UNGC principles or OECD Guidelines for Multinational Enterprises	HIGH

	Lack of processes and compliance mechanisms to monitor compliance with UN Global Compact principles and OECD Guidelines for Multinational Enterprises	Share of investments in investee companies without policies to monitor compliance with the UNGC principles or OECD Guidelines for Multinational Enterprises or grievance /complaints handling mechanisms to address violations of the UNGC principles or OECD Guidelines for Multinational Enterprises	**PARTIAL**[56]
	Unadjusted gender pay gap	Average unadjusted gender pay gap of investee companies	**HIGH**
	Board gender diversity	Average ratio of female to male board members in investee companies	**HIGH**
	Exposure to controversial weapons (anti-personnel mines, cluster munitions, chemical weapons and biological weapons)	Share of investments in investee companies involved in the manufacture or selling of controversial weapons	**NOT RELEVANT**
MATTERS	**ADDITIONAL ADVERSE SUSTAINABILITY IMPACT INDICATORS**	**METRICS**	
Emissions	**Emissions of inorganic pollutants**	Tonnes of inorganic pollutants equivalent per million EUR invested, expressed as a weighted average	**NONE**
	Emissions of air pollutants	Tonnes of air pollutants equivalent per million EUR invested, expressed as a weighted average	**PARTIAL**[57]
	Emissions of ozone depletion substances	Tonnes of ozone depletion substances equivalent per million EUR invested, expressed as a weighted average	**NONE**
	Investments in companies without carbon emission reduction initiatives	Share of investments in investee companies without carbon emission reduction initiatives aimed at aligning with the Paris Agreement	**NONE**
Energy performance	**Breakdown of energy consumption by type of non-renewable sources of energy**	Share of energy from non-renewable sources used by investee companies broken down by each non-renewable energy source	**HIGH**
Water, waste and material	**Water usage and recycling**	Average amount of water consumed and reclaimed by the investee companies (in cubic meters) per million EUR of revenue of investee companies	**PARTIAL**[58]

[56] artial, because the ASSI indicator refers to adherence to Labor Rights fundamental conventions, but does not mention monitoring mechanisms.

[57] According to SFDR, 'air pollutants' means direct sulphur dioxides (SOx/SO2) emissions, direct nitrogen oxides (NOx/NO2) emissions, , direct non-methane volatile organic compounds (NMVOC) emissions and direct particulate matter (PM2.5) emissions as defined in points (5) to (8) of Article 3 of, as well as direct ammonia (NH3) and direct total heavy metals (HM) emissions (encompassing cadmium, mercury and lead) as referred to in Directive (EU) 2016/2284 of the European Parliament and of the Council

[58] Partial because ASSI does not require data on the amount of reclaimed water used.

emissions		Weighted average percentage of water recycled and reused by investee companies	
	Investments in companies without water management policies	Share of investments in investee companies without water management policies	**HIGH**
	Exposure to areas of high water stress	Share of investments in investee companies with sites located in areas of high water stress without a water management policy	**PARTIAL**
	Investments in companies producing chemicals	Share of investments in investee companies the activities of which fall under Division 20.2 of Annex I to Regulation (EC) No 1893/2006	**NOT RELEVANT**
	Land degradation, desertification, soil sealing	Share of investments in investee companies the activities of which cause land degradation, desertification or soil sealing	**PARTIAL**
	Investments in companies without sustainable land/agriculture practices	Share of investments in investee companies without sustainable land/agriculture practices or policies	**HIGH**
	Investments in companies without sustainable oceans/seas practices	Share of investments in investee companies without sustainable oceans/seas practices or policies	**HIGH**
	Non-recycled waste ratio	Tonnes of non-recycled waste generated by investee companies per million EUR invested, expressed as a weighted average	**HIGH**
Biodiversity	**Natural species and protected areas**	Share of investments in investee companies whose operations affect threatened species	**PARTIAL**
		Share of investments in investee companies without a biodiversity protection policy covering operational sites owned, leased, managed in, or adjacent to, a protected area or an area of high biodiversity value outside protected areas	
	Deforestation	Share of investments in companies without a policy to address deforestation	**NONE**
Green securities	**Share of securities not certified as green under a future EU legal act setting up an EU Green Bond Standard**	Share of securities in investments not certified as green	**NONE**
Greenhouse gas emissions	**GHG emissions**	Scope 1 GHG emissions generated by real estate assets	**HIGH**
		Scope 2 GHG emissions generated by real estate assets	

		Scope 3 GHG emissions generated by real estate assets (From 1 January 2023)	
		Total GHG emissions generated by real estate assets	
Energy consumption	**Energy consumption intensity**	Energy consumption in GWh of owned real estate assets per square meter	**PARTIAL**
Waste	**Waste production in operations**	Share of real estate assets not equipped with facilities for waste sorting and not covered by a waste recovery or recycling contract	**PARTIAL**
Resource consumption	**Raw materials consumption for new construction and major renovations**	Share of raw building materials (excluding recovered, recycled and biosourced) compared to the total weight of building materials used in new construction and major renovations	**HIGH**
Biodiversity	**Land artificialisation**	Share of non-vegetated surface area (surfaces that have not been vegetated in ground, as well as on roofs, terraces and walls) compared to the total surface area of the plots of all assets	**NONE**
Additional Social and employee matters	**Investments in companies without workplace accident prevention policies**	Share of investments in investee companies without a workplace accident prevention policy	**HIGH**
	Rate of accidents	Rate of accidents in investee companies expressed as a weighted average	**HIGH**
	Number of days lost to injuries, accidents, fatalities or illness	Number of workdays lost to injuries, accidents, fatalities or illness of investee companies expressed as a weighted average	**PARTIAL**
	Lack of a supplier code of conduct	Share of investments in investee companies without any supplier code of conduct (against unsafe working conditions, precarious work, child labour and forced labour)	**HIGH**
	Lack of grievance/complaints handling mechanism related to employee matters	Share of investments in investee companies without any grievance/complaints handling mechanism related to employee matters	**PARTIAL**
	Insufficient whistleblower protection	Share of investments in entities without policies on the protection of whistleblowers	**PARTIAL**
	Incidents of discrimination	Number of incidents of discrimination reported in investee companies expressed as a weighted average	**PARTIAL**
	Excessive CEO pay ratio	Average ratio within investee companies of the annual total compensation for the highest compensated individual to the median annual total compensation for all employees (excluding the highest-compensated individual)	**PARTIAL**
Human Rights	**Lack of a human rights policy**	Share of investments in entities without a human rights policy	**PARTIAL**

	Lack of due diligence	Share of investments in entities without a due diligence process to identify, prevent, mitigate and address adverse human rights impacts	**HIGH**
	Lack of processes and measures for preventing trafficking in human beings	Share of investments in investee companies without policies against trafficking in human beings	**NOT RELEVANT**
	Operations and suppliers at significant risk of incidents of child labour	Share of investments in investee companies exposed to operations and suppliers at significant risk of incidents of child labour exposed to hazardous work in terms of geographic areas or type of operation	**HIGH**
	Operations and suppliers at significant risk of incidents of forced or compulsory labour	Share of the investments in investee companies exposed to operations and suppliers at significant risk of incidents of forced or compulsory labour in terms in terms of geographic areas and/or the type of operation	**HIGH**
	Number of identified cases of severe human rights issues and incidents	Number of cases of severe human rights issues and incidents connected to investee companies on a weighted average basis	**NONE**
Anti-corruption and anti-bribery	**Lack of anti-corruption and anti-bribery policies**	Share of investments in entities without policies on anti-corruption and anti-bribery consistent with the United Nations Convention against Corruption	**HIGH**
	Cases of insufficient action taken to address breaches of standards of anti- corruption and anti-bribery	Share of investments in investee companies with identified insufficiencies in actions taken to address breaches in procedures and standards of anti-corruption and anti-bribery	**PARTIAL**
	Number of convictions and amount of fines for violation of anti- corruption and anti-bribery laws	Numbers of convictions and amount of fines for violations of anti-corruption and anti-bribery laws by investee companies	**NONE**

SFDR distinguishes its adverse sustainability impact indicators into 16 principal (mandatory) and 38 additional (optional) indicators. Three of the total 54 SFDR adverse impact indicators were identified as not relevant to infrastructure, 1 principal and 2 additional.

The high majority (13) out of the remaining 15 principal indicators are highly (8) or partially (5) addressed by AISI, with 2 not addressed. Of the 36 additional infrastructure-relevant SFDR indicators 28 are highly (14) or partially (14) addressed by AISI, with 8 not addressed.

In total 41 SFDR's principal and additional indicators are addressed by AISI's set of indicators, and more specifically by 18 of the 28 AISI indicators. Moreover it is worth noting that 10 of these 18 AISI indicators address 2 or more SFDR indicators each, as seen in the table below:

Table 78: No.of addressed SFDR indicators per AISI indicator

AISI INDICATORS	METRICS	no. of SFDR addressed[59] indicators per AISI indicator
2 Sustainability management system	Implementation of a sustainable management system and reporting	1
3 Gender equality, inclusiveness and empowerment	Existence and Implementation of a comprehensive gender action plan (GAP).	3
6 Stakeholder engagement plan	Existence of a meaningful and inclusive stakeholder engagement process and plan.	1
7 Free, Prior and Informed Consent (FPIC)	Obtainment of Free, Prior and Informed Consent (FPIC)	2
8 Involuntary Resettlement	People physically or economically impacted by the project	1
10 Public health and safety management plan	Implementation of a public health and safety management plan	1
12 GHG emissions	Volume of Greenhouse gas emissions emitted by the project	4
13 Efficient use of energy	Amount of energy consumed by the project	4
14 Materials lifecycle thinking	Consideration of materials lifecycle impacts	1
15 Reduction of Waste	Percentage of total waste diverted from incineration and landfills	2
16 Fine particulate matter emission	Mean PM2.5 and PM10 emissions	1
17 Threatened species	Number of Aquatic and Terrestrial Species Impacted (Fauna and Flora)	2
18 Watershed Management	Existence of an Integrated Watershed Assessment and Management Program	5
11 Freshwater withdrawal	Annual volume of fresh water used by the infrastructure project	2
19 Previously Disturbed Land	Percentage of land used by the project that has been previously disturbed or maintained as non-disturbed	1
20 Project supply chain sustainability management	Existence of a sustainable procurement plan and compliance monitoring	3
21 Anticorruption program	Implementation of an anti-corruption program	2
23 Labor rights	Integration of International Labour Organisation's (ILO) fundamental conventions	5

The total principal and additional SFDR indicators not addressed by AISI are presented in the table below:

Table 79: EU SFDR principal & additional indicators not covered by AISI

EU SFDR Regulatory Technical Standards (RTS) indicators not covered by AISI		
MATTERS	**PRINCIPAL ADVERSE SUSTAINABILITY IMPACT INDICATORS**	**METRICS**
Greenhouse gas emissions	**Exposure to companies active in the fossil fuel sector**	Share of investments in companies active in the fossil fuel sector
Fossil Fuels	**Exposure to fossil fuels through real estate assets**	Share of investments in real estate assets involved in the extraction, storage, transport or manufacture of fossil fuels

[59] Addressed partially or highly.

MATTERS	ADDITIONAL ADVERSE SUSTAINABILITY IMPACT INDICATORS	METRICS
Emissions	Emissions of inorganic pollutants	Tonnes of inorganic pollutants equivalent per million EUR invested, expressed as a weighted average
	Emissions of ozone depletion substances	Tonnes of ozone depletion substances equivalent per million EUR invested, expressed as a weighted average
	Investments in companies without carbon emission reduction initiatives	Share of investments in investee companies without carbon emission reduction initiatives aimed at aligning with the Paris Agreement
Biodiversity	Deforestation	Share of investments in companies without a policy to address deforestation
Green securities	Share of securities not certified as green under a future EU legal act setting up an EU Green Bond Standard	Share of securities in investments not certified as green
Biodiversity	Land artificialisation	Share of non-vegetated surface area (surfaces that have not been vegetated in ground, as well as on roofs, terraces and walls) compared to the total surface area of the plots of all assets
Human Rights	Number of identified cases of severe human rights issues and incidents	Number of cases of severe human rights issues and incidents connected to investee companies on a weighted average basis
Anti-corruption and anti-bribery	Number of convictions and amount of fines for violation of anti-corruption and anti-bribery laws	Numbers of convictions and amount of fines for violations of anti-corruption and anti-bribery laws by investee companies

Table 80: SDFR metrics not addressed by AISI indicators

AISI LINKED INDICATORS	SFDR PRINCIPAL ADVERSE SUSTAINABILITY IMPACT INDICATORS	NOT ADDRESSED METRICS
12 GHG emissions	GHG intensity of investee companies	GHG intensity of investee companies
13 Efficient use of energy	Energy consumption intensity per high impact climate sector	Energy consumption in GWh per million EUR of revenue of investee companies, per high impact climate sector
AISI LINKED INDICATORS	**SFDR ADDITIONAL ADVERSE SUSTAINABILITY IMPACT INDICATORS**	**NOT ADDRESSED METRICS**
11 Freshwater withdrawal	Water usage and recycling	Weighted average percentage of water recycled and reused by investee companies
17 Threatened species	Natural species and protected areas	Share of investments in investee companies without a biodiversity protection policy covering operational sites owned, leased, managed in, or adjacent to, a protected area or an area of high biodiversity value outside protected areas

15 Reduction of Waste	**Waste production in operations**	Share of real estate assets not equipped with facilities for waste sorting and not covered by a waste recovery or recycling contract
25 Frequency rates of fatal and non-fatal occupational injuries	**Number of days lost to injuries, accidents, fatalities or illness**	Number of workdays lost to injuries, accidents, fatalities or illness of investee companies expressed as a weighted average
21 Anticorruption program	**Cases of insufficient action taken to address breaches of standards of anti-corruption and anti-bribery**	Share of investments in investee companies with identified insufficiencies in actions taken to address breaches in procedures and standards of anti-corruption and anti-bribery

9. SYNTHESIS OF FINDINGS

This section provides a cross-system reading of the mappings to the extent possible, given that each system has its own vocabulary, approach and methodology for prioritizing sustainability issues and proposing a selected, compact or extensive, list of indicators. These indicators are connected to metrics, qualitative, quantitative or a combination of both. The cross-system reading has been provided in section 7 for the high-level mapping of AISI with the selected ESG systems with conclusions regarding:

- scope compatibility,
- ease of use and compactness,
- comprehensiveness,
- infrastructure project relevance, and
- structure and content comparability.[60]

The cross-system reading of the detailed mapping does not intend to supersede the findings of mapping each "standard" against AISI or AISI's mapping against each "framework or regulation and guidelines." So, key sustainability topics/issues were selected for reading the results, which highlight main overlaps and differences in each system's approach and methodology, and could potentially serve as recommendations for AISI.

The selected key sustainability topics are:

- climate risk,
- GHG emissions,
- energy,
- water,
- solid waste,
- air quality,
- biodiversity, and

[60] The high level mappings regarding scope compatibility and structure and content comparability were performed mainly with the objective to determine the feasibility of a detailed mapping of systems. It is through the detailed mapping that more targeted observations regarding the systems content were enabled, and will be presented in the respective section.

- human capital.

The findings are based on indicators or metrics of other ESG systems that were not linked to AISI indicators, so they were identified as omitted by AISI. The findings were also based on the observed similarities or differences in the approach and methodology used by each ESG system regarding the selected sustainability topics.

9.1. Synthesis of the findings of high-level mapping

Regarding tool's ease of use and compactness

AISI is a compact and easy to use tool. It is an one-document guidance tool with a compact list of indicators as compared to the other systems and standards. ESG standards include more detailed information than the one provided by frameworks, including various guidance documents. Only WEF was identified to be equally compact as AISI.

The direct connection of AISI's indicators to the SDG goals and specific targets is a feature that significantly adds to AISI's ease of use, highlighting its value. WEF also provides this linkage in a broader sense, while GRI and SASB present this information on stand-alone documents.

Regarding infrastructure project relevance

Among the ESG systems, AISI is the only one that focuses on infrastructure projects. The rest of the systems, though infrastructure-relevant, are enterprise based. However, this basic difference did not prevent the mapping against AISI, although it was necessary to slightly customize certain narratives of indicators to address the project level.

SASB is also considered to be an easy-to-use standard because of its materiality map and its online platform. It includes infrastructure-related industries in its list of industries, however, it does not provide a straightforward insight to infrastructure projects. To do so, it would require the user to fully review other industries' standards and identify material topics relevant to an infrastructure project, a task that was performed for the purposes of the present exercise. SASB encourages its users to identify topics financially material to their company.

Regarding Comprehensiveness

AISI does not aim to provide a comprehensive assessment of sustainability, but rather prioritizes 'characteristics deemed as necessary for early consideration by investors when prioritizing projects.' This approach is in line with ESG standards, as they all aim to capture sustainability topics that are material to a company and by extension to investors. Still, AISI covers the full range of ESG aspects through its indicators in a balanced way and the mapping did not identify key sustainability topics of other systems that were not addressed by AISI.

9.2. Synthesis of findings of the detailed mapping

Overall observations- singularities of AISI

ASSI requires comprehensive evidence for several indicators/metrics, requesting details of plans, management systems or programs that encompass all potential relevant information, such as:

- strategic options assessment,
- sustainability management system,
- comprehensive gender action plan (GAP),
- climate risk adaptation plan,
- stakeholder engagement,
- public health and safety management plan,
- integrated watershed assessment and management program,
- sustainable procurement plan,
- anti-corruption program, and
- comprehensive OH&S Management System

The other "standards" (e.g., SASB, GRI) include more indicators and mainly quantitative metrics to capture the scope of similar sustainability topics, but at a lesser detail than AISI. The mapping of other systems with AISI provides insight for additional 'metrics,' which could be included in AISI's indicators.

The inclusion of gender equality in AISI as a separate performance indicator is a different approach than most standards, where gender is integrated in other indicators, mostly as a consideration for reporting or breakdown; most often as part of work-related and human rights disclosures.

It is also observed that AISI includes information that is not found in some systems. The indicator 'sustainability in project award' is not included in any of the mapped ESG systems. The indicator 'heritage assessment' was also not included in GRI and SASB and the issue of cultural heritage was not explicitly addressed by WEF. The indicator 'previously disturbed land,' a key issue for citing infrastructure projects is not adequately covered in other systems.

AISI includes a rationale for the selection of its indicators and their importance in describing potential financial impacts of not considering them in the decision-making process. However, the metrics used for AISI indicators reflect sustainable performance against the indicator and do not reflect impact or benefit in monetary terms. AISI has a more environmental and social materiality as opposed to financial materiality. The difference in the nature of metrics on materiality is highlighted through the mappings of AISI against TCFD and EU SDFR. TCFD links climate risks and opportunities to financial impacts and EU SFDR's metrics are in their majority expressed in market value.

GRI has an approach similar to AISI to materiality, as expressed by most of its reporting requirements, however, as part of its economic-related disclosures, it also requests reporting in monetary terms. SASB also includes monetary metrics in various disclosure topics, most commonly about the monetary losses of not considering a specific sustainability topic. WEF complements its sustainability performance metrics

with 'a valued impact' in monetary terms in several of its disclosures. According to WEF, "Reporting valued impact in monetary terms provides a meaningful indication of the scale of impacts in units that can be readily understood by executives and compared across impact areas and with financial figures. Valuation of environmental impacts is increasingly recognized as the most efficient and effective way of incorporating as much relevant contextual information as possible to provide estimates of actual impact, rather than simply measures of output as is the case with most quantitative environmental metrics."[61]

Table 81: Examples of metrics expressed in monetary terms per ESG system

TCFD	'carbon price', 'revenues/savings from investments in', 'expenditures (OpEx) for', 'Investment (CapEx) in', 'indicative costs of', 'return on capital' related to a specific climate risk or opportunity or sustainability impact
SDFR	'share of investments in entities without [consideration of the specific adverse sustainability impact]', e.g., 'energy consumption per million EUR of revenue of investee companies'
NFDR	'Revenues from', 'expenditures for', Percent turnover' 'percent investment (CapEx) and/or 'expenditures (OpEx)' associated with some of its indicators
GRI	'costs of actions taken', 'financial implications of' 'amount of spending on' 'total monetary value of significant fines' related to [a specific impact].
SASB	'total amount of monetary losses as a result of legal proceedings associated with' the sustainability topic under consideration. 'rework costs'
WEF	'valued impact'[62] in monetary terms

The translation of a performance metric into monetary value, or expressing it in market value, is considered as a feasible next conversion for investors, once the data on the performance of a project or a

[61] World Economic Forum. (September 2020) "Measuring Stakeholder Capitalism towards Common Metrics and Consistent Reporting of Sustainable Value Creation".

[62] WEF as reference for the valued impact includes: US EPA fact sheet on the Social Cost of Carbon (2016), the Natural Capital Protocol (2016), ISO 14008 Monetary valuation of environmental impacts and related environmental aspects (2019), the Value Balancing Alliance.

portfolio of projects is reported by the company. For that reason, in some cases of the detailed mappings, it is assumed that AISI's performance metrics capture the nature of the other system's financial impact (e.g., against SFDR).

Observations regarding key sustainability topics

Regarding Climate risk

AISI covers climate risk management by focusing on the physical risks of climate change and not on the exposure to the risks of the transition to a low-carbon economy.

Table 82: Climate risk-related indicators/metrics not included in AISI

WEF	**TCFD implementation**	**Fully implement the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). If necessary, disclose a timeline of at most three years for full implementation.** Disclose whether you have set, or have committed to set, GHG emissions targets that are in line with the goals of the Paris Agreement – to limit global warming to well below 2°C above pre-industrial levels and pursue efforts to limit warming to 1.5°C – and to achieve net-zero emissions before 2050.
GRI	**201-2 Financial implications and other risks and opportunities due to climate change**	a. Risks and opportunities posed by climate change that have the potential to generate substantive changes in operations, revenue, or expenditure, including: i. a description of the risk or opportunity and its classification as either physical, regulatory, or other; ii. a description of the impact associated with the risk or opportunity; **iii. the financial implications of the risk or opportunity before action is taken;** iv. the methods used to manage the risk or opportunity; **v. the costs of actions taken to manage the risk or opportunity.**
SASB	**Climate impacts of business mix**	Amount of backlog for (1) cancellation associated with hydrocarbon-related projects and (2) renewable energy projects
		Amount of backlog for non-energy projects associated with climate change mitigation
	Management of Energy Infrastructure Integration & Related Regulations	Description of risks associated with integration of solar energy into existing energy infrastructure and discussion of efforts to manage those risks
		Description of risks and opportunities associated with energy policy and its impact on the integration of solar energy into existing energy infrastructure
	(Systemic Risk Management) Grid Resiliency	(1) System Average Interruption Duration Index (SAIDI), (2) System Average Interruption Frequency Index (SAIFI), and (3) Customer Average Interruption Duration Index (CAIDI), inclusive of major event days
	Managing Systemic Risks from	(1) System average interruption frequency and (2) customer average interruption duration

	Technology Interruptions	Discussion of systems to provide unimpeded service during service interruptions
TCFD	**Risk Adaptation & Mitigation**	Revenues/savings from investments in low-carbon alternatives (e.g., R&D, equipment, products or services)
		Expenditures (OpEx) for low carbon alternatives (e.g., R&D, equipment, products, or services)
		Proportion of capital allocation to long-lived assets versus short-term assets
		Capital payback periods or return on capital deployed
	Location	Area of buildings, plants or properties located in designated flood hazard areas
NFRD	**Physical risks**	Assets committed in regions likely to become more exposed to acute or chronic physical climate risks
	Products and services	Percent turnover in the reporting year from products or services associated with activities that meet the criteria for substantially contributing to mitigation of or adaptation to climate change as set out in the Regulation on the establishment of a framework to facilitate sustainable investment (EU taxonomy). And / or Percent investment (CapEx) and/or expenditures (OpEx) in the reporting year for assets or processes associated with activities that meet the criteria for substantially contributing to mitigation of or adaptation to climate change as set out in the Regulation on the establishment of a framework to facilitate sustainable investment (EU taxonomy).
	Opportunities of efforts engaging with a transition to a low carbon and climate-resilient economy, aligned with key EU policies, carrying out climate change mitigation / adaptation activities.	Revenues from low-carbon products
		Revenues from product or services applying to the circular economy model,
		R&D expenditures in circular economy production
	Disclosure on natural capitals (e.g. water, soil productivity or biodiversity) for companies whose business models are dependent on natural capitals threatened by climate change	
SFDR	**Exposure to fossil fuels through real estate assets**	Share of investments in real estate assets involved in the extraction, storage, transport or manufacture of fossil fuels
	Exposure to companies active in the fossil fuel sector	Share of investments in companies active in the fossil fuel sector

Regarding GHG emissions

When referring to GHG emissions, AISI similar to the majority of the systems requires evidence on Scope 1, 2 & 3 emissions. SASB has adopted a different approach. It requires the disclosure of direct emissions (Scope 1) and accounts for indirect emissions by capturing operational and/or strategic factors that give rise to such emissions: 'Energy Management' (Scope 2) and 'Product Design & Lifecycle Management', 'Supply Chain Management Materials Sourcing & Efficiency' (Scope 3). According to SASB "these factors are the actionable "levers" that company management is likely to pull to reduce Scope 2 and 3 emissions. Reporting on these "levers" enables investors to evaluate whether a company is adapting its business operations and strategy to mitigate climate-related risks, realize climate-related opportunities, and enable achievement of society's GHG emission targets."[63]

So, SASB includes metrics that capture information about the energy consumed by the reporting entity as a surrogate for Scope 2 emissions and similarly, rather than calling for Scope 3 emissions disclosure—which relates to issues beyond the control of reporting entities—SASB calls for the disclosure of industry-specific metrics related to the direct risks and opportunities companies face which drive Scope 3 emissions both up and down the value chain.[64]

Table 83: GHG emissions- related indicators/metrics not included in AISI

WEF	**TCFD implementation**	Fully implement the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). If necessary, disclose a timeline of at most three years for full implementation. Disclose whether you have set, or have committed to set, GHG emissions targets that are in line with the goals of the Paris Agreement – to limit global warming to well below 2°C above pre-industrial levels and pursue efforts to limit warming to 1.5°C – and to achieve net-zero emissions before 2050.
	Paris-aligned GHG emissions targets	Define and report progress against time-bound science-based GHG emissions targets that are in line with the goals of the Paris Agreement – to limit global warming to well below 2°C above pre-industrial levels and pursue efforts to limit warming to 1.5°C. This should include defining a date before 2050 by which you will achieve net-zero greenhouse gas emissions, and interim reduction targets based on the methodologies provided by the Science Based Targets initiative, if applicable. If an alternative approach is taken, disclose the methodology used to calculate the targets and the basis on which they deliver on the goals of the Paris Agreement.

[63] Sustainability Accounting Standards Board. (September 2020) SASB Implementation Supplement: Greenhouse Gas Emissions and SASB Standards.

[64] Ibid.

	Impact of GHG emissions	Report wherever material along the value chain (GHG Protocol Scope 1, 2 & 3) the valued impact of greenhouse gas emissions. Disclose the estimate of the **societal cost of carbon** used and the source or basis for this estimate.
GRI	**305-4 GHG emissions intensity**	a. GHG emissions intensity ratio for the organization. b. Organization-specific metric (the denominator) chosen to calculate the ratio. c. Types of GHG emissions included in the intensity ratio; whether direct (Scope 1), energy indirect (Scope 2), and/or other indirect (Scope 3). d. Gases included in the calculation; whether CO2, CH4, N2O, HFCs, PFCs, SF6, NF3, or all.
	305-5 Reduction of GHG emissions	a. GHG emissions reduced as a direct result of reduction initiatives, in metric tons of CO2 equivalent. b. Gases included in the calculation; whether CO2, CH4, N2O, HFCs, PFCs, SF6, NF3, or all. c. Base year or baseline, including the rationale for choosing it. d. Scopes in which reductions took place; whether direct (Scope 1), energy indirect (Scope 2), and/or other indirect (Scope 3). e. Standards, methodologies, assumptions, and/or calculation tools used.
SASB	**Emissions Reduction Services & Fuels management**	Discussion of strategies or plans to address air-emissions related risks, opportunities and impacts
		Percentage of engines in service that meet Tier 4 compliance for non-road diesel engine emissions
	Greenhouse emissions	Discussion of long-term and short-term strategy or plan to manage Scope 1 and lifecycle emissions, emissions reduction targets, and an analysis of performance against those targets
		in cases also] Percentage of of Scope 1 emissions associated with the emission of a specific (per industry) substance
TCFD	**GHG Emissions**	Describe current carbon price or range of prices used
		GHG emissions intensity from buildings (by occupants or square area) and from new construction and redevelopment
NFRD	**Direct and indirect atmospheric emissions**	GHG absolute emissions target
		Emissions of other pollutants (measured in absolute value and as intensity)
SFDR	**GHG intensity of investee companies**	GHG intensity of investee companies
	Investments in companies without carbon emission reduction initiatives	Share of investments in investee companies without carbon emission reduction initiatives aimed at aligning with the Paris Agreement

Regarding Energy

AISI addresses energy management through its 'efficient use of energy' indicator. Though the indicator's description refers to the importance of energy consumption savings, the metric 'amount of energy

consumed by the project' does not highlight the reduced energy objective of the indicators as in other ESG systems where clear reference is made on 'energy intensity', reduction targets, efficiency targets or considerations etc., as shown in the table below.

Table 84: Energy-related Indicators/ metrics not included in AISI

GRI	**302-3 Energy intensity**	a. Energy intensity ratio for the organization. b. Organization-specific metric chosen to calculate the ratio. c. Types of energy included in the intensity ratio; whether fuel, electricity, heating, cooling, steam, or all. d. Whether the ratio uses energy consumption within the organization, outside of it, or both.
	302-4 Reduction of energy consumption	a. Amount of reductions in energy consumption achieved as a direct result of conservation and efficiency initiatives, in joules or multiples. b. Types of energy included in the reductions; whether fuel, electricity, heating, cooling, steam, or all. c. Basis for calculating reductions in energy consumption, such as base year or baseline, including the rationale for choosing it. d. Standards, methodologies, assumptions, and/or calculation tools used.
	302-5 Reduction in energy requirements of products and services	a. Reductions in energy requirements of sold products and services achieved during the reporting period, in joules or multiples. b. Basis for calculating reductions in energy consumption, such as base year or baseline, including the rationale for choosing it. c. Standards, methodologies, assumptions, and/or calculation tools used.
SASB	**Lifecycle Impacts of Buildings & Infrastructure**	Discussion of process to incorporate operational-phase energy and water efficiency considerations into project planning and design (engineering & construction services)
	Energy management	Percentage of eligible portfolio that (1) has an energy rating and (2) is certified to ENERGY STAR, by property subsector
	Fleet fuel management	Percentage of alternative fuel vehicles in fleet
TCFD	**Energy/Fuel**	Indicative costs of supply for current and committed future projects (e.g., through a cost curve or indicative price range. This could be broken down by product, asset, or geography)
		Sales-weighted average fleet fuel economy, by region and weight/number of people transported
		Total energy intensity—by tons of product, amount of sales, number of products depending on informational value
		Building energy intensity (by occupants or square area)
NFRD	**Energy**	Energy efficiency target
		Renewable energy production target.
		Energy performance and improvements in energy performance
		Energy consumption from non-renewable sources and **energy intensity**

SFDR	**Energy consumption intensity per high impact climate sector**	Energy consumption in GWh per million EUR of revenue of investee companies, per high impact climate sector

Regarding water (quantity and quality)

AISI's approach to capture sustainable water management in quantity and quality is reflected in two indicators, the 'freshwater withdrawal' and the 'watershed management' indicators. The two indicators capture sufficiently sustainable water management, as also identified in other ESG systems. However, in the table below some additional indicators and metrics identified in the other systems are presented for potential enhancing the description of AISI indicators. For example, SFDR requests information on the recycling or reuse of water.

Table 85: Water-related Indicators/ metrics not included in AISI

WEF	**Impact of freshwater consumption and withdrawal**	Report wherever material along the value chain: the valued impact of freshwater consumption and withdrawal.
GRI	**303-1 Interactions with water as a shared resource**	a. A description of how the organization interacts with water, including how and where water is withdrawn, consumed, and discharged, and the water-related impacts caused or contributed to, or directly linked to the organization's activities, products or services by a business relationship (e.g., impacts caused by runoff). b. A description of the approach used to identify water-related impacts, including the scope of assessments, their timeframe, and any tools or methodologies used. c. A description of how water-related impacts are addressed, including how the organization works with stakeholders to steward water as a shared resource, and how it engages with suppliers or customers with significant water-related impacts. d. An explanation of the process for setting any water-related goals and targets that are part of the organization's management approach, and how they relate to public policy and the local context of each area with water stress.
SASB	**Water Supply Resilience**	Discussion of strategies to manage risks associated with the quality and availability of water resources
		Volume of recycled water delivered to customers
	Lifecycle Impacts of Buildings & Infrastructure	Discussion of process to incorporate operational-phase energy and water efficiency considerations into project planning and design (engineering & construction services)
	Effluent Quality Management	Number of incidents of non-compliance associated with water effluent quality permits, standards, and regulations
	Distribution Network Efficiency	Water main replacement rate
		Volume of non-revenue real water losses

TCFD	**Water**	Assets committed in regions with high or extremely high baseline water stress
		Building water intensity (by occupants or square area)
SFDR	**Water usage and recycling**	Weighted average percentage of water recycled and reused by investee companies

Regarding Waste

Other systems address hazardous waste as an indicator, while AISI has encompassed it in the indicator 'public health and safety management plan.'

Table 86: Waste-related Indicators/ metrics not included in AISI

WEF	**Impact of solid waste disposal**	Report wherever material along the value chain, the valued societal impact of solid waste disposal, including plastics and other waste streams.
GRI	**306-1 Waste generation and significant waste- related impacts**	a. For the organization's significant actual and potential waste-related impacts, a description of: (i). the inputs, activities, and outputs that lead or could lead to these impacts; (ii). whether these impacts relate to waste generated in the organization's own activities or to waste generated upstream or downstream in its **value chain.**
SASB	**Management of Leachate & Hazardous Waste**	Number of corrective actions implemented for landfill releases
		Number of incidents of non-compliance associated with environmental impacts
	Hazardous Waste Management	Number and aggregate quantity of reportable spills, quantity recovered
SFDR	**Waste production in operations**	Share of real estate assets not equipped with facilities for waste sorting and not covered by a waste recovery or recycling contract

Regarding Air Quality

AISI has selected Particulate Matter (PM) emissions (specifically $PM_{2.5}$ and PM_{10}) as the proxy indicator for air quality and presents its rationale for this indicator selection as representative of the topic. The approach of other systems in relation to air quality is different.

The 'air pollutants' definition of For EU SFDR is based on related EU Directives and means direct sulphur dioxides (SOx/SO2) emissions, direct nitrogen oxides (NOx/NO2) emissions, direct non-methane volatile organic compounds (NMVOC) emissions and direct particulate matter ($PM_{2.5}$) emissions, as well as direct ammonia (NH3) and direct total heavy metals (HM) emissions (encompassing cadmium, mercury and lead). The other ESG standards (WEF, GRI and SASB) also request disclosure on all these types of air pollutants. Moreover, they include additional metrics to the calculation of emissions:

Table 87: Air-quality related Indicators/ metrics not included in AISI

WEF	**Impact of air pollution**	Report wherever material along the value chain: the valued impact of air pollution, including nitrogen oxides (NOx), sulphur oxides (SOx), particulate matter and other significant air emissions.
GRI	**305-6 Emissions of ozone-depleting substances (ODS)**	a. Production, imports, and exports of ODS in metric tons of CFC-11 (trichlorofluoromethane) equivalent. b. Substances included in the calculation. c. Source of the emission factors used. d. Standards, methodologies, assumptions, and/or calculation tools used.
SASB	**Air quality**	Percentage of each pollutant emission in or near areas of dense population
		Number of facilities in or near areas of dense population
		Number of incidents of non-compliance associated with air emissions
NFRD	**Direct and indirect atmospheric emissions**	Emissions of other pollutants (measured in absolute value **and as intensity**)
SFDR	**Emissions of inorganic pollutants**	Tonnes of inorganic pollutants equivalent per million EUR invested, expressed as a weighted average
	Emissions of ozone depletion substances	Tonnes of ozone depletion substances equivalent per million EUR invested, expressed as a weighted average

Regarding Biodiversity (ecosystem health)

AISI's has selected three indicators for addressing biodiversity, the 'threatened species', 'watershed management' and 'previously disturbed land.' Together, they capture sufficiently the preservation of the ecosystem's health. Some additional indicators and metrics are presented in the table below for potential consideration to enhance the description of the AISI indicators.

Table 88: Ecosystem health- related Indicators/ metrics not included in AISI

WEF	Land use and ecological sensitivity	Report for operations (if applicable) and full supply chain (if material): - Area of land used for the production of basic plant, animal or mineral commodities (e.g. the area of land used for forestry, agriculture or mining activities). - Year-on-year change in the area of land used for the production of basic plant, animal or mineral commodities. Note: Supply-chain figures can initially be estimated where necessary based on the mass of each commodity used and the average mass produced per unit of land in different sourcing locations. - Percentage of land area in point 1 above or of total plant, animal and mineral commodity inputs by mass or cost, covered by a sustainability certification standard or formalized sustainable management programme. Disclose the certification standards or description of sustainable management programmes along with the percentage of total land area, mass or cost covered by each certification standard/programme.

SASB	**Land use & Ecological impacts**	Total amount of monetary losses as a result of legal proceedings associated with environmental regulations
	Environmental impacts of project development	Terrestrial acreage disturbed, percentage of impacted area restored
SFDR	**Natural species and protected areas**	Share of investments in investee companies without a biodiversity protection policy covering operational sites owned, leased, managed in, or adjacent to, a protected area or an area of high biodiversity value outside protected areas
	Deforestation	Share of investments in companies without a policy to address deforestation
	Land artificialisation	Share of non-vegetated surface area (surfaces that have not been vegetated in ground, as well as on roofs, terraces and walls) compared to the total surface area of the plots of all assets

Regarding human capital -related issues

AISI sufficiently addresses workforce related issues in its 'working condition' topic and related indicators, which are also identified in other systems. However, an additional indicator was identified in GRI and WEF, which include "workforce training and skill upgrading" as part of their human capital-related topics. Human capital management is of growing interest to investors because of evolving evidence of its financial impact.

Table 89: Workforce training and skill upgrading-related Indicators/ metrics not included in AISI

WEF	**Skills for the future**	Training provided (#, $)	
		Number of unfilled skilled positions (#, %)	
		Monetized impacts of training – Increased earning capacity as a result of training intervention (%, $)	
GRI	**Training & Education**	404-1 Average hours of training per year per employee	a. Average hours of training that the organization's employees have undertaken during the reporting period, by gender and employee category.
		404-2 Programs for upgrading employee skills and transition assistance programs	a. Type and scope of programs implemented and assistance provided to upgrade employee skills. b. Transition assistance programs provided to facilitate continued employability and the management of career endings resulting from retirement or termination of employment.
		404-3 Percentage of employees receiving regular performance and career development reviews	a. Percentage of total employees by gender and by employee category who received a regular performance and career development review during the reporting period.

SASB does not include workforce training-related indicators in its standards, however, in 2019, it initiated a research project to review its human capital dimension and strengthen its approach with additional

indicators. Though not a final proposition of indicators, SASB's research highlighted the growing importance of 'workforce investment:'[65]

- **Workforce Culture:** Evidence highlights the increasing importance of organizational culture. This broad concept embodies the values, processes, and outcomes of an organization and can drive its ability to produce a more productive, fair, and respectful work environment and therefore its ability to acquire, develop, and retain talent.
- **Workforce Investment** (including career and wealth-building opportunities): The role of business in providing employees with career-building and wealth-building opportunities is becoming increasingly critical, and is associated with increased worker engagement and retention. It may also be associated with an ability to reskill or upskill workers to address labor shortages in some industries, and/or improve employee performance and productivity within others.
- **Mental Health & Health-Related Benefits:** Several trends highlight the impact of employee mental health on business performance, through factors like productivity. These issues include the increasing prevalence of stress, depression, and anxiety. In addition to mental health, the role of health benefits for workers, including benefits such as paid sick leave, may be associated with factors like job turnover, recruitment and retention, productivity, and lower rates of absenteeism.
- **Alternative Workforce** (contingent and contract labor): Greater prevalence of alternative workforces has highlighted the potential to more effectively account for this multifaceted issue within SASB standards **and consider the potential implications of this issue within our general issue taxonomy.** This trend relates to the growing size of this worker classification and the expansion of the use of alternative workforces by a range of businesses.

[65] Sustainability Accounting Standards Board. (December 2020) RESEARCH PROJECT Human Capital: Preliminary Framework on Human Capital and the SASB Standards.

ABBREVIATIONS

CapEx Capital Expenditures
CDP (former Carbon Disclosure)
CDSB Climate Disclosure Standards Board
EU European Union
EU NFRD EU Non-financial Reporting Directive
EU SFDR EU Sustainable Finance Disclosure Regulation
ESG Environmental Social Governance
GHG Greenhouse Gas
GRI Global Reporting Initiative
IBC International Business Council
IFRS International Financial Reporting Standards
ILO International Labor Organization
<IR> Integrated Reporting
IRCC International Integrated Reporting Council
ISO International Organization for Standardization
ISO/TCs International Organization for Standardization's Technical Committees
LCA Lifecycle Assessment
ODS ozone-depleting substances
OECD Economic Co-operation and Development
OpEx Operating Expenditures
R&D Research and Development
ROI Return on Investment
SASB Sustainability Accounting Standards Board
SDGs Sustainable Development Goals
TCFD Task Force on Climate-related Financial Disclosures
UN United Nations
VOC Volatile Organic Compound
WEF World Economic Forum
5ISS Group of five joint effort (CDP, CDSB, GRI, <IR> and SASB)

APPENDIX A. Reference Documents per ESG System

SYSTEM	STATUS/ DATE OF PUBLICATION	TOTAL NO. OF DOCUMENTS	DOCUMENT TITLE
EU ESG Regulations	2020	1	1. EU Environmental Social Governance (ESG) Regulations guide
EU Taxonomy Regulation	March 2020	2	1. Taxonomy: Final report of the Technical Expert Group on Sustainable Finance 2. Taxonomy Report: Technical annex. Updated methodology & Updated Technical Screening Criteria
EU SFDR Disclosure Regulation		2?	1. Joint Consultation Paper on ESG disclosures: Draft technical, regulatory standards concerning the content, methodologies, and presentation of disclosures according to Article 2a, 4(6) and (7), Article 8(3), Article 9(5), Article 10(2) and Article 11(4) of Regulation (EU) 2019/2088 2. REGULATION (EU) 2019/2088 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 November 2019 on sustainability-related disclosures in the financial services sector
EU NFRD Non-Financial Reporting Directive		4	1. Communication from the Commission: Guidelines on non-financial reporting (methodology for reporting non-financial information), July 5, 2017 2. Communication from the Commission: Guidelines on non-financial reporting: Supplement on reporting climate-related information, June 2019 3. Consultation Document: Review of the Non-Financial Reporting Directive, February 20, 2020 4. Summary Report of the Public Consultation on the Review of the Non-Financial Reporting Directive, 20 February 2020 - 11 June 2020
5ISS (CDP, CDSB, GRI, IR & SASB)	September 2020	2	1. Statement of Intent to Work Together Towards Comprehensive Corporate Reporting 2. Reporting on enterprise value: Illustrated with a prototype climate-related financial disclosure standard. Progress towards a comprehensive corporate reporting system, from leading sustainability and integrated reporting organisations CDP, CDSB, GRI, IIRC and SASB, December 2020
CDP (Carbon Disclosure Project) **Questionnaires**	January 2021	4	1. Climate Change questionnaire 2. Forests questionnaire 3. Water Security Questionnaire 4. List of CDP-ACS: The full list of classifications for CDP's Activity Classification System (CDP-ACS)

CDSB (Climate Disclosure Standards Board) **Framework**	December 2019	1	1. CDSB Framework for reporting environmental & climate change information: Advancing and aligning disclosure of environmental information in mainstream reports
GRI (Global Reporting Initiative) **Standards**	Various dates	various	GRI Standards 2020 Three universal Standards: GRI 101 Foundation - GRI 102 General disclosures - GRI 103 Management Approach 34 topic-specific Standards GRI 200 series (Economic topics) GRI 300 series (Environmental issues) GRI 400 series (Social issues) GSSB. (11 June 2020). GRI Universal Standards: GRI 101, GRI 102, and GRI 103 – Exposure draft
IIRC's (International Integrated Reporting Council) **INTERNATIONAL <IR> FRAMEWORK**	January 2021	1	INTERNATIONAL <IR> FRAMEWORK JANUARY 2021
SASB (Sustainability Accounting Standards Board) **Standards**	various dates	7	1. SASB Conceptual Framework (Feb 2017) 2. SASB Standards Application Guidance, VERSION 2018-10 3. SASB Materiality Map® (interactive table with Disclosure topics & Accounting metrics) 4. Industry Guide to the Sustainable Development Goals (June 2020) 5. SASB Human Capital Bulletin (Nov 2020) 6. SASB Implementation Supplement: Greenhouse Gas Emissions and SASB Standards (Sep 2020) 7. Sustainable Industry Classification System® (SICS®)
WEF IBC ESG Reporting Metrics And Disclosure Standards	September 2020	1	1. Measuring Stakeholder Capitalism Towards Common Metrics and Consistent Reporting of Sustainable Value Creation
ISO TC 322 Sustainable Finance		2	1. ISO/TC 332 Sustainable Finance: Scope and Supporting statement, September 2019 2. ISO/TC 322 Strategic Business Plan v1, April 2020
IFRS Foundation	September 2020	1	1. Consultation Paper on Sustainability Reporting, September 2020

TCFD Recommendations	June 2017	6	1 . Recommendations of the Task Force on Climate-related Financial Disclosures(Final Report), June 2017 2. Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures, June 2017 3. TCFD. Guidance on Scenario Analysis for Non-Financial Companies, October 2020 4. TCFD Technical Supplement_ The Use of Scenario Analysis in Disclosure of Climate - Related Risks and Opportunities, June 2017 5. TCFD_ Forward - Looking Financial Sector Metrics Consultation, October 2020 6. TCFD 2020 Status Report, October 2020

APPENDIX B. Timeline of ESG Systems Evolution

December 2014	Directive 2014/95/EU of the European Parliament and of the Council on disclosure of non-financial and diversity information by certain large undertakings and groups ('the Directive') entered into force. The Directive would start applying as of 2018 for concerned companies, on information relating to the 2017 financial year.	EU NFRD
June 2014	The Corporate Reporting Dialogue is an initiative, convened in June 2014 by the International Integrated Reporting Council, designed to respond to market calls for greater coherence, consistency and comparability between corporate reporting frameworks, standards and related requirements.	5ISS [CDP, CDSB, GRI, <IR>, SASB] & ISO, IFRS's IASB, and FASB as Observer
June 2017	The Task Force for Climate- related Disclosures (TCFD) published its Recommendations on Climate-related disclosures along with an Implementation guide for companies, including example metrics.	TDFD
July 2017	EU Commission publishes non-binding Guidelines on non-financial reporting(methodology for reporting non-financial information)	EU NFRD
September 2017	CDSB and SASB collectively publish 'Converging on Climate Risk: CDSB, the SASB, and the TCFD: The Emerging Alignment of Market-Based Approaches to Climate-Related Financial Disclosure'; to document how the two systems are already well-aligned with the recommendations of the Task Force and also as a statement of agreement by CDSB and the SASB to further this harmonization, working to deliver a TCFD-ready framework to facilitate consistent, quality implementation.	SASB & CDSB

March 2018	EU Commission issues its Action plan on Financing Sustainable Growth	EU ACTION PLAN
June 2018	The European Commission set up a Technical Expert Group on Sustainable Finance (TEG) to assist in four key areas of the Action Plan through the development of: 1) a unified classification system for sustainable economic activities (taxonomy), 2) an EU green bond standard, 3) benchmarks for low-carbon investment strategies, and 4) new guidelines on the reporting of climate-related information.	EU ACTION PLAN
2018	The structure of the CDP climate change questionnaire was redesigned in 2018 in response to market needs and trends in corporate climate change reporting. Revisions included the inclusion of the TCFD recommendations, an increased emphasis on forward-looking metrics, a new requirement around climate scenario analysis, improved alignment with other reporting frameworks, and the integration of sector-specific questions. For climate change, CDP has incorporated sector-specific questions for 16 high-impact sectors.	CDP
2018	ISO forms the ISO/TC 322, a technical committee on Sustainable Finance to establish a framework under which new standards may be developed to define and guide certain sustainable finance activities	ISO
September 26 2018	The Impact Management Project launches a new network, the IMP Structured Network, bringing together leading global organisations in an ambitious initiative to provide coherent and end-to-end 'rules of the road' for impact management. Initial members of the network were:The United Nations Development Programme (UNDP), the International Finance Corporation (IFC), the Organisation for Economic Co-operation and Development (OECD), Social Value International (SVI), The Global Impact Investing Network (GIIN), the Principles for Responsible Investment (PRI), the World Benchmarking Alliance (WBA), the Global Steering Group for Impact Investment (GSG) and the GRI. Gradually CDP, CDSB, SASB and IIRC joined the network.	5ISS [CDP, CDSB, GRI, <IR>, SASB]
November 2018	The SASB Standards are released after extensive research and market consultation. (SASB published Provisional Standards for a set of 79 Industry Standards across 10 sectors - published sequentially by sector- between July 2013-March 2016. The provisional Standards were published to seek feedback from stakeholders on the relevance and decision-usefulness of the Standards and the feasibility and cost-effectiveness of their implementation.	SASB
January 2019	The EU Technical Group on Sustainable Finance (TEG) publishes the Report on Climate-related Disclosures (presenting its recommendations on climate-related reporting integrating the recommendations of the Task Force on Climate-related	EU NFRD

	Financial Disclosures (TCFD)) and invites feedback on its report by 1 February 2019	
20 February – 20 March 2019	Targeted online Consultation with interested stakeholders on the Update of the Non-Binding Guidelines on Non-Financial Reporting. The consultation document took account of the January 2019 TEG report and of stakeholder feedback on that report.	EU NFRD
May 2019	SASB and CDSB produced the TCFD Implementation Guide showing how both the SASB Standards and CDSB Framework can be used by report preparers to make the 11 recommended disclosures of the TCFD.	SASB & CDSB
June 2019	As part of the Sustainable Finance Action Plan, the Commission publishes Supplemental Guidelines on reporting climate-related information which integrate the recommendations of the TCFD. The guidelines took account of stakeholder feedback on the recommendations of the TEG and of the results of the targeted online consultation carried out in February-March 2019.	EU NFRD
Summer 2019	At its summer 2019 meeting in Geneva, the IBC launches a project to develop a proposal for consideration at its winter 2020 meeting for how its members could measure and disclose meaningful and relevant aspects of their performance on environmental, social and governance matters and their contribution to progress on the SDGs on a consistent and comparable basis.	WEF IBC
September 2019	Supporting statement to ISO/TC 322 scope is released	ISO TC 322
September 2019	Corporate Reporting Dialogue Driving Alignment in Climate-related Reporting Year One of the Better Alignment Project Report	5ISS [CDP, CDSB, GRI, <IR>, SASB] & ISO, IFRS's IASB, and FASB as Observer
December 2019	Regulation on sustainability-related disclosures in the financial services sector Level 1 published to be implemented on March 2021	EU SFDR
December 2019	In its Communication on the European Green Deal, the Commission committed to review the NFRD as part of the strategy to strengthen the foundations for sustainable investment.	EU NFRD
December 2019	CDSB Framework for reporting environmental & climate change information: Advancing and aligning disclosure¨of environmental information in mainstream reports	CDSB

January 2020	Consultation Draft Toward Common Metrics and Consistent Reporting of Sustainable Value Creation	WEF-IBC
February 20-June 11 2020	EU Consultation to collect stakeholders' views on the review of NFRD	EU NFRD
March 2020	Taxonomy (PHASE 1): Final report of the Technical Expert Group on Sustainable Finance Technical Screening criteria for Environmental Objectives 1 &2 (climate change mitigation & climate change adaptation)	EU Taxonomy
April 2020	the ISO/TC 322 Strategic Business Plan v1 became publicly available in April 2020. The under development work is estimated to be completed in a 4 to 8 years period.	ISO TC 322
April 2020-August 2020	Joint Consultation Paper ESG disclosures / for draft Regulatory Technical Standards (RTS) with regard to the content, methodologies and presentation of sustainability-related disclosures. Six of these RTS must be delivered by 30 December 2020 and one must be delivered by 30 December 2021. The purpose of RTS is to provide further detail and guidance to ensure that firms take a similar approach in their sustainability disclosure.	EU SFDR
June 2020-September 9 2020	GRI is undergoing a revision of its Universal standards. An exposure draft was made available for public comment. The revision includes: - New disclosures on responsible business conduct, due diligence, human rights and governance; - Updated reporting model that replaces the 'Core' and 'Comprehensive' options; - Greater clarity and new guidance on the key concepts of reporting – including 'impact', 'material topic' and 'stakeholder'; and - Revised reporting principles that increase the focus on high quality and well-presented information. Release of updated Universal Standards is scheduled for the 2nd half of 2021	GRI
July 8 - October 6 2020	Global Sustainability Standards Board (GSSB), the independent standard setting body of GRI, has published an exposure draft of the Sector Standard: Oil and Gas for public comment between 8 July and 6 October 2020. This is the first pilot Standard of the GRI Sector Program, and as such, it will help define the structure, format and language of future GRI Sector Standards (Sector Standards) and the approach to their implementation	GRI
July 13 2020	GRI and SASB announce collaboration for Promoting Clarity and Compatibility in the Sustainability Landscape. Initially the collaboration will focus on delivering communication materials (examples based on real-world reports) to help stakeholders better understand how the standards may be used concurrently. These resources are planned to be delivered before the end of 2020. It is expected that this can lead to the identification of further collaboration opportunities.	GRI & SASB
July 29 2020	EU publishes a Summary Report of the Public Consultation on the Review of the Non-Financial Reporting Directive 20 February 2020 - 11 June 2020	EU NFRD

August 28 2020-November 30 2020	SASB held public comment period on proposed changes(exposure drafts) to the SASB Conceptual Framework & SASB Rules of Procedure	SASB
September 2020	SASB releases a SASB implementation supplement for Greenhouse emissions that provides an overview of SASB's approach to greenhouse gas emissions and related topics in the SASB Standards. Moreover, SASB Climate Risk Bulletin is in process of updating	SASB
September 2020	Measuring Stakeholder Capitalism Towards Common Metrics and Consistent Reporting of Sustainable Value Creation	WEF-IBC
September-December 2020	IFRS Consultation	IFRS
September 2020	5ISS (or 'group of five') Statement of Intent	5ISS
October 2020	TCFD publishes Guidance on Scenario Analysis for Non-Financial Companies	TCFD
October 2020-January 2021	Consultation to determine whether further TCFD financial sector guidance on forward-looking metrics is needed.	TCFD
November 25 2020	IIRC and SASB announce intent to merge into a unified organization, the **Value Reporting Foundation**, providing investors and corporates with a comprehensive corporate reporting framework across the full range of enterprise value drivers and standards to drive global sustainability performance.	SASB & IIRC
December 2020	SASB's presents a Preliminary Framework on Human Capital and the SASB Standards as part of its research project on Human Capital.	
December 2020	Reporting on enterprise value: Illustrated with a prototype climate-related financial disclosure standard	5ISS
2020	For the 2020 reporting cycle, the CDP questionnaires are aiming to have complete sector alignment with the TCFD (Taskforce for Climate related Financial Disclosure). There will also be a new specific questionnaire within CDP Climate Change for the Financial Services (FS) sector. The addition of the new FS sector questions aims to move the sector from purely operationally focussed emissions reporting, towards reporting indirect financial impacts. The FS questions will be focussed on activities within banking, insurance, asset ownership and asset management. As CDP are still aligning to the TCFD recommendations, no major changes are expected to the other disclosure questionnaires in 2020.	CDP
January 2021	IIRC publishes revisions to the International <IR> Framework :INTERNATIONAL <IR> FRAMEWORK JANUARY 2021; the first revisions since the <IR> Framework was originally published in 2013, with purpose to clarify concepts, simplify guidance for report preparers and underpin better quality integrated reports.	<IR>

March 22 2021	IFRS Foundation Trustees announce working group to accelerate convergence in global sustainability reporting standards focused on enterprise value	IFRS
February 26, 2021	The European Securities and Markets Authority (ESMA), the EU's securities markets regulator publishes its Final Report on advice under Article 8 of the Taxonomy Regulation, which covers the information to be provided by non-financial undertakings and asset managers to comply with their disclosure obligations under the Non-Financial Reporting Directive (NFRD).	EU NFRD EU TAXONOMY
February 2021	EFRAG publishes a final report on 'Proposals for a relevant and dynamic EU Sustainability Reporting Standard-setting	EU NFRD
April 2021		EU NFRD
Jun 2021	Specificities of NFRD Taxonomy Related Disclosures	EU TAXONOMY
December 31 2021	Technical Screening criteria for Environmental Objectives 3,4,5 & 6 (Water, Circular Economy, Pollution & Ecosystems)	EU TAXONOMY

APPENDIX C. The ESG Systems Matrix

ESG System General Data

SYSTEMS GENERAL DATA				
	NAME OF ESG SYSTEM	**DEVELOPED BY**	**DEVELOPMENT STATUS**	**AMENDMENT OF PRIOR VERSION OR NOT**
0	**AISI**	PPIAF	Under Review	NO
1	**EU TAXONOMY (PHASE 1)**	EU	Phased agenda: from June 2020 to December 2022 PHASE 1- Completed (March 2020) PHASE 2 -Pending	YES
	EU DISCLOSURES REGULATION (EU SFDR)	EU	Level 1 published on December 2019 to be implemented on March 2021 Level 2 not finalized (delayed)	
	EU NFRD	EU	July 2017 & June 2019 (Revision expected)	YES
2	**5ISS joint initiative**	CDP, CDSB, GRI, IIRC, SASB	Under development Statement of intent published in September 2020	NO
	CDP Questionnaires	Carbon Disclosure Project (CDP)	January 2021	YES

	CDSB Framework	Climate Disclosure Standards Board (CDSB)	Published in December 2019	
	GRI Standards	Global Reporting Initiative (GRI)	Various completion dates: 2016,2018,2019,2020	YES
	INTERNATIONAL <IR> FRAMEWORK	International Integrated Reporting Council (IIRC)	Published in January 2021	YES
	SASB Standards	Sustainability Accounting Standards Board (SASB)		YES
3	**WEF-IBC ESG Reporting Metrics and Disclosure Standards**	World Economic Forum (WEF) & International Business Council (IBC)	Published in September 2020	NO
4	**ISO TC 322**	International Organization for Standardization (ISO)	Under Development (4-8 years to completion[66])	NO
5	**IFRS Consultation**	International Financial Reporting Standards (IFRS) Foundation	Consultation completed (September - December 2020) Consultation results not published	NO
6	**TCFD Framework**	Task Force on climate-related financial disclosures (TCFD)	Framework published in June 2017 along with Implementation guide. Consultation held October 2020-January 2021 focused on forward-looking metrics	

ESG System Structure Data

SYSTEM STRUCTURE						
SYSTEM	**No. of GUIDANCE DOCUMENTS**	**MAIN STRUCTURE COMPONENTS**	**ECONOMY SECTORS-SPECIFIC**	**TARGET ECONOMY SECTORS/INDUSTRIES**	**SUSTAINABILITY TOPICS**	**NUMBER OF INDICATORS**
AISI	1	Indicators grouped under sustainability topics	NO	-	1. Option Assessment 2. Sustainability Management System 3. Gender 4. Resilience 5. Stakeholder Engagement 6.Water 7.Energy/GHG 8.Materials Lifecycle approach 9.Air quality 10. Biodiversity 11. Sustainable supply chain 12.Anti-corruption 13. Procurement Procurement 14. Working Conditions 15. Service affordability	28

[66] Source:ISO/TC 322. (April 2020) Strategic Business plan v1 ISO/TC 322 Sustainable Finance

EU TAXONOMY (PHASE 1)	2+1 spreadsheet	Technical screening criteria for activities' (1) substantial contribution to 6 environmental objectives (2) Significant harm to 6 environmental objectives (3)'Do not do significant harm' or minimum social safeguards	YES	Priority Sectors (High-emitting macro sectors + Enabling sectors): 1. Forestry 2. Agriculture 3. Manufacturing 4. Electricity, gas, steam and air conditioning supply 5. Water, sewerage, waste and remediation 6. Transportation and storage 7. Information and communications 8. Construction and real estate activities	6 environmental objectives: 1. climate change mitigation 2. climate change adaptation 3. sustainable and protection 4. transition to a circular economy 5. pollution prevention and control 6. protection and restoration of biodiversity and ecosystems	
EU SFDR	1	Two broad categories of adverse impacts: 1. Principal and 2. Additional And further breakdown per category into: - Climate and other environmental-related impacts - Social and employee, respect for human rights, anti-corruption and anti-bribery matters	NO		**1. Principal Adverse Impacts (PAI)** **1.1 Climate and other environment-related impacts** - Greenhouse gas emissions - Energy performance - Biodiversity - Water - Waste **1.2 Social and employee, respect for human rights, anti-corruption and anti-bribery matters** - Social and employee matters - Human rights - Anti-corruption and anti-bribery **2. <u>Additional Adverse Impacts</u>** **2.1 Additional Climate and other environment-related impacts** - Emissions - Water, waste and material - Green securities **2.2 Additional Social & employee, respect for human rights, anti-corruption & anti-bribery matters** - Social and employee matters - Social securities	32 mandatory adverse sustainability indicators + 16 voluntary adverse sustainability indicators
EU NFRD	2	5 REPORTING AREAS: 1. Business model 2. Policies and due diligence 3. Outcome of policies 4. Principal risks and risk management 5. Key performance indicators	NO		**Environmental matters** 1.material disclosures on pollution prevention and control; 2.environmental impact from energy use; 3.direct & indirect atmospheric emissions 4.use and protection of natural resources (e.g. water, land) and related protection of biodiversity 5.waste management 6.environmental impacts from transportation or from the use and disposal of products and services; 7.development of green products and services. **Social and employee matters** 1.the implementation of	34 examples of KPIs & 12 examples of Climate-related KPIs[67]

[67] The 34 examples of KPIs as part of the EU Guidelines on non-financial reporting (2017) and the 12 examples as part of the Supplement on reporting Climate-related (2019)

					fundamental conventions of the International Labour Organisation; 2.diversity issues, such as gender diversity and equal treatment in employment and occupation (including age, gender, sexual orientation, religion, disability, ethnic origin and other relevant aspects 3.employment issues, including employee consultation and/or participation, employment and working conditions; 4.trade union relationships, including respect of trade union rights; 5.human capital management including management of restructuring, career management and employability, remuneration system, training; 6.health and safety at work; 7.consumer relations, including consumer satisfaction, accessibility, products with possible effects on consumers' health and safety; 8.impacts on vulnerable consumers; 9.responsible marketing and research; 10.community relations, including social and economic development of local communities. **Respect for human rights** 1.human rights due diligence, and 2.processes and arrangements implemented to prevent human rights abuses **Anti-corruption and bribery matters** 1. management anti-corruption and bribery matters and occurrences **other** 1. Supply chains 2. Conflict minerals (supplement climate-related matters) 1. GHG Emissions 2. Energy 3. Physical risks 4. Products and services 5. Green Finance	
5ISS	?	4 PILLARS (of TCFD) 1. Governance 2. Strategy 3. Risk Management 4. Metrics & Targets	NO			11 Recommended Disclosures + Mapped disclosures

CDP	4	3 QUESTIONNAIRES: 1. Climate Change questionnaire 2. Forests questionnaire 3. Water Security Questionnaire **12 modules (for Climate change:)** 1. Governance 2. Risks and opportunities 3. Business strategy 4. Targets and performance 5. Emissions methodology 6. Emissions data 7. Emissions breakdown 8. Energy 9. Additional metrics 10. Verification 11. Carbon pricing 12. Engagement	YES[68]	Sectors: 1. Agriculture 2. Energy:(Coal; Electric utilities; Oil & gas) 3. Financial: Financial service 4. Materials (Cement; Capital goods; Chemicals; Construction; Metals & mining; Real estate; Steel) 5. Transport(Transport services; Transport OEMs)	1. Board oversight 2. Management responsibility 3. Employee incentives 4. Management processes 5. Risk disclosure 6. Opportunity disclosure 7. Business strategy 8. Emissions targets 9. Other climate-related targets 10. Low-carbon products 11. Base year emissions 12. Emissions methodology 13. Scope 1 emissions data 14. Scope 2 emissions reporting 15. Scope 2 emissions data 16. Exclusions 17. Scope 3 emissions data 18. Biogenic carbon data 19. Emissions intensities 20. Scope 1 breakdown: GHGs 21. Scope 1 breakdown: country 22. Scope 1 breakdown: business breakdown 23. Scope 2 breakdown: country 24. Scope 2 breakdown: business breakdowns 25. Emissions performance 26. Energy spend 27. Energy-related activities 28. Other climate-related metrics 29. Verification 30. Other verified data 31. Carbon pricing systems 32. Internal price on carbon 33. Value chain engagement 34. Public policy engagement 35. Communications	
CDSB	1	12 Reporting Requirements 1. Governance 2. Management's environmental policies, strategy and targets 3. Risks and opportunities 4. Sources of environmental impacts 5. Performance and comparative analysis 6. Outlook 7. Organisational boundary 8. Reporting policies 9. Reporting period 10. Restatements 11. Conformance 12. Assurance	NO (Industry agnostic)			

[68] The questionnaires have Full and Minimum versions) high-impact sector companies have additional sector-specific questions

GRI	37	**3 Universal standards:** - GRI 101 Foundation - GRI 102 General disclosures - GRI 103 Management Approach **& 34 Topic- specific standards:** - GRI 200 series (Economic topics) - GRI 300 series (Environmental topics) - GRI 400 series (Social topics)	NO	-	GRI 103 Management approach GRI 201 Economic performance GRI 202 Market presence GRI 203 Indirect economic impacts GRI 204 Procurement practices GRI 205-Anti-corruption GRI 206 Anti-competitive behavior GRI 207 Tax GRI 301 Materials GRI 302 Energy GRI 303 Water and effluents GRI 304 Biodiversity 305 Emissions GRI 306 Waste GRI 307 Environmental compliance GRI 308 Supplier environmental assessment GRI 401 Employment GRI 402 Labor management relations GRI 403 Occupational health and safety GRI 404 Training and education GRI 405 Diversity and equal opportunity GRI 406 Non-discrimination GRI 407 Freedom of- association and collective bargaining GRI 408 Child labor GRI 409 Forced or compulsory labor GRI 410 Security practices GRI 411 Rights of indigenous people GRI 412 Human rights assessment GRI 413 Local communities GRI 414 Supplier social assessment GRI 415 Public policy GRI 416 Customer health and safety GRI 417 Marketing and labelling GRI 418 Customer privacy GRI 419 Socioeconomic compliance	Various per topic
<IR>	1	An integrated report includes 8 Content Elements, posed in the form of questions: 1. Organizational overview and external environment 2. Governance 3. Business model 4. Risks and opportunities 5. Strategy and resource allocation 6. Performance 7. Outlook 8. Basis of preparation and presentation			No prescribed individual matters for disclosure	No prescribed specific key performance

SASB	7	5 SUSTAINABILITY DIMENSIONS: 1. Environment 2. Social capital 3. Human capital 4. Business model & Innovation 5. Leadership and Governance	YES (Industry specific)	77 Industries in 11 Sectors 1. Consumer goods 2. Extractives & Minerals Processing 3. Financials 4. Food & Beverage 5. Healthcare 6. Infrastructure 7. Renewable Resources & Alternative Energy 8. Resource Transformation 9. Services 10. Technology & Communications 11. Transportation	**(26** General issue categories) 1.GHG Emissions 2.Air Quality 3.Energy Management 4.Water & Wastewater Management 5.Waste & Hazardous Materials Management 6. Ecological Impacts 7.Human Rights & Community Relations 8.Customer Privacy 9.Data Security 10.Access & Affordability 11.Product Quality & Safety 12.Customer Welfare 13. Selling Practices & Product Labelling 14. Labor Practices 15. Employee Health & Safety 16. Employee Engagement, Diversity & Inclusion 17.Product Design & Lifecycle Management 18. Business Model Resilience 19. Supply Chain Management 20. Materials Sourcing & Efficiency 21. Physical Impacts of Climate Change 22. Business Ethics 23. Competitive Behavior 24. Management of the Legal & Regulatory Environment 25. Critical Incident Risk Management 26. Systemic Risk Management	Disclosure topics per sector
WEF-IBC	1	**4 PILLARS:** 1. Principles of Governance 2. Planet 3. People 4. Prosperity	NO		(18 THEMES) 1. Governing purpose 2. Quality of governing body 3. Stakeholder engagement 4. Ethical behaviour 5. Risk and opportunity oversight 6. Climate change 7. Nature loss 8. Freshwater availability 9. Air pollution 10. Water pollution 11. Solid waste 12. Resource availability 13. Dignity and equality 14. Health and wellbeing 15. Skills for the future 16. Employment and wealth generation 17. Innovation of better products and services 18. Community and social vitality	**TOTAL: 55** (21 core metrics + 34 expanded metrics)
ISO TC322	?					
IFRS	?	-			-	-

TCFD	4	STRUCTURE OF DISCLOSURES IN THEMES: 1. Governance 2. Strategy 3. Risk Management 4. Metrics & Targets	YES	FINANCIAL SECTOR NON FINANCIAL SECTOR 1. Energy 2. Materials and Buildings; 3. Transportation; 4. Agriculture, Food, and Forest Products	(Climate-related categories across Non-financial sectors) 1.Carbon footprinting 2.Exposure to carbon-related assets 3.GHG Emissions 4. Energy/Fuel 5. Water 6. Risk Adaptation & Mitigation	11 recommended disclosures Metrics per sector

APPENDIX D. GRI Reporting Requirements for Disclosure

GRI Universal-topic Disclosures	Reporting Requirements
REP-5 External assurance	a. describe its policy and practice with regard to seeking external assurance, including whether and how the highest governance body and senior executives are involved; b. if the organization's sustainability reporting has been externally assured: i. provide a reference to the external assurance report(s), conclusions, or opinions; ii. describe what has and what has not been assured, the assurance standards used, the level of assurance obtained, and the limitations of the assurance process; iii. describe the relationship between the organization and the assurance provider.
ACT-1 Activities, value chain, and other business relationships	a. report its sector; b. describe its value chain, including: i. the organization's main activities, products, services, and markets served; ii. characteristics of the entities upstream from the organization and their activities related to the organization's products and services, i.e., its supply chain; iii. characteristics of the entities downstream from the organization and their activities related to the organization's products and services; c. report other relevant business relationships; d. describe significant changes in ACT-1-a, ACT-1-b and ACT-1-c since the previous reporting period.
ACT-2 Employees and other workers	a. report the total number of employees, and provide a breakdown of this total by: i. employment contract (permanent and temporary), by gender; ii. employment contract (permanent and temporary), by region; iii. employment type (full-time and part-time), by gender; iv. employment type (full-time and part-time), by region; b. provide contextual information to understand the data reported under ACT-2-a; c. report the total number of workers who are not employees and whose work is controlled by the organization, including: i. the most common types of worker and their contractual relationship with the organization; ii. the work they perform; d. describe significant fluctuations in the number of employees and workers who are not employees during the reporting period and between reporting periods; describe the assumptions and methodologies used to compile the data, including whether the number of employees and workers who are not employees are reported: i. in head count, full-time equivalent (FTE), or using another methodology; ii. at the end of the reporting period, as an average across the reporting period, or using another methodology.

GOV-1 Governance structure and composition	a. describe its governance structure, including committees of the highest governance body; b. report the committees of the highest governance body responsible for decision- making on and overseeing the management of sustainable development topics; c. describe the composition of the highest governance body and its committees by: i. executive and non-executive members; ii. independence; iii. tenure of members on the governance body; iv. number of each member's other significant positions and commitments, and the nature of the commitments; v. gender; vi. membership of under-represented social groups; vii. competencies relating to sustainable development topics that are relevant tothe organization and the sector in which it operates; viii. stakeholder representation.
GOV-2 Nomination and selection of the highest governance body	a. describe the nomination and selection processes for the highest governance body and its committees b. describe the criteria used for nominating and selecting highest governance body members, including whether and how: i. stakeholders (including shareholders) are involved ii. diversity is considered; iii. independence is considered; iv. expertise and experience relating to sustainable development topics are considered.
GOV-3 Responsibilities for sustainable development topics and delegation	a. describe the role and responsibilities of the highest governance body with regard to decision-making for sustainable development topics; b. report whether the organization has appointed any senior executives with responsibility for sustainable development topics; c. describe how management of sustainable development topics is delegated from the highest governance body to senior executives and other employees; d. describe the internal resources that the organization has for managing sustainable development topics; e. describe the process and specify the frequency for reporting to the highest governance body on sustainable development topics.
GOV-4 Stakeholder consultation on sustainable development topics	a. describe the processes for consultation between stakeholders and the highest governance body on sustainable development topics; b. if responsibility for stakeholder consultation is delegated, report to whom it is delegated, and how the feedback received is provided to the highest governance body.
Disclosure GOV-6 Conflicts of interest	a. describe the processes for the highest governance body to ensure that conflicts of interest are avoided and managed; b. report whether conflicts of interest are disclosed to stakeholders, including, as a minimum, the following conflicts of interest: i. Cross-board membership; ii. Cross-shareholding with suppliers and other stakeholders; iii. Existence of controlling shareholder; iv. Related parties, their relationships, transactions, and outstanding balances.
Disclosure GOV-7 Role of the highest governance body in setting purpose, values, and strategy	a. describe the role of the highest governance body and of senior executives in the development, approval, and updating of the organization's purpose, value or mission statements, strategies, policies, and goals related to sustainable development topics.

Disclosure GOV-10 Identification and management of impacts	a. describe the role of the highest governance body in overseeing the organization's processes to identify and manage sustainable development topics and their related impacts, including: i. the role of the highest governance body in due diligence processes; ii. the role of any committees of the highest governance body with specific responsibilities for these processes; iii. how the highest governance body considers and reviews the outcomes of these processes; b. report whether stakeholder consultation is used to support the role of the highest governance body as described in GOV-10-a; c. specify the frequency of reporting to the highest governance body on the organization's processes as described in GOV-10-a; d. describe the role of the highest governance body in reviewing the effectiveness of the organization's processes as described in GOV-10-a, and specify the frequency of this review.
Disclosure GOV-13 Remuneration policies	a. describe the remuneration policies for highest governance body members and senior executives, including: i. fixed pay and variable pay, such as performance-based pay, equity-based pay, bonuses, and deferred and vested shares; ii. sign-on bonuses or recruitment incentive payments; iii. termination payments; iv. clawbacks; v. retirement benefits, such as the difference between benefit schemes and contribution rates for the highest governance body members, senior executives, and all other employees; b. describe how performance criteria in the remuneration policies for highest governance body members and senior executives relate to their objectives for sustainable development topics.
Disclosure GOV-14 Process for determining remuneration	a. describe its process for determining remuneration, including its remuneration policies; b. report whether independent members of the highest governance body or an independent remuneration committee oversee the remuneration process; c. describe how the views of stakeholders (including shareholders) regarding remuneration are sought and taken into account; d. report the results of votes on remuneration policies and proposals, if applicable; e. report whether remuneration consultants are involved in determining remuneration and, if so, report any relationships that the remuneration consultants have with the organization, its highest governance body, or senior executives.
GOV-15 Annual total compensation ratio	a. report the ratio of the annual total compensation for the organization's highest- paid individual in each country of significant operations to the median annual total compensation for all employees (excluding the highest-paid individual) in the same country; b. report the ratio of the percentage increase in annual total compensation for the organization's highest-paid individual in each country of significant operations to the median percentage increase in annual total compensation for all employees (excluding the highest-paid individual) in the same country.
RBC-1 Statement on sustainable development strategy	a. provide a statement from the highest governance body or most senior executive of the organization about the relevance of sustainable development to the organization and its strategy for contributing to sustainable development.

RBC-2 Policy commitments	a. describe its policy commitments for responsible business conduct, including: i. the internationally recognized instruments that the commitments reference; ii. whether the commitments stipulate conducting due diligence; iii. whether the commitments stipulate applying the precautionary principle; iv. whether the commitments stipulate respecting human rights; b. describe its specific policy commitment to respect human rights, including: i. the internationally recognized human rights that the commitment covers; ii. the categories of stakeholders, including at-risk or vulnerable groups, that the organization gives particular attention to in the commitment; c. provide links to the policy commitments if publicly available, or, if the policy commitments are not publicly available, explain the reason for this; d. report the level at which each of the policy commitments was approved within the organization, including whether this is the most senior level, and the date of approval; e. report whether the policy commitments apply solely to the organization's own activities or whether they also stipulate the organization's expectations of those with which it has business relationships and, if so, describe what those expectations are; f. describe how the policy commitments are communicated to workers, business partners, and other relevant parties; g. if the organization does not have any of the policy commitments in RBC-2-a, explain the reason for not having them or describe any plans to develop them.
RBC-3 Embedding the policy commitments throughout the organization	a. describe how the organization embeds each of its policy commitments for responsible business conduct throughout its activities and business relationships, including: i. how the organization allocates responsibility for implementing the commitments across different levels within the organization; ii. how the organization integrates the commitments into organizational strategies and operational policies and procedures; iii. how the organization works with those with which it has business relationships, to implement the commitments; iv. training that the organization provides on implementing the commitments.
RBC-4 Grievance mechanisms and other remediation processes	a. describe its commitments to provide for or cooperate in the remediation of negative impacts that the organization identifies it has caused or contributed to; b. describe its approach to identify and address grievances, including: i. the grievance mechanisms that the organization has established or participates in; ii. other processes by which the organization provides for or cooperates in the remediation of negative impacts that it identifies it has caused or contributed to; c. describe how the stakeholders who are the intended users of the grievance mechanisms and other remediation processes are involved in the design, review, operation, and improvement of these mechanisms and processes; d. describe how the organization tracks the effectiveness of the grievance mechanisms and other remediation processes and provide examples of their effectiveness, including stakeholder feedback.
RBC-5 Mechanisms for seeking advice and raising concerns	a. describe the mechanisms for individuals to: i. seek advice on implementing the organization's policies and practices for responsible business conduct; ii. raise concerns about the organization's responsible business conduct.
RBC-6 Compliance with laws and regulations	a. report instances of non-compliance with laws or regulations for which significant fines or non-monetary sanctions were incurred during the reporting period, including: i. total monetary value of the significant fines incurred; ii. total number of significant fines and total number of non-monetary sanctions incurred; iii. the nature of each instance of non-compliance for which a significant fine or non-monetary sanction was incurred; b. report instances of non-compliance with laws or regulations raised through dispute resolution mechanisms during the reporting period, including the nature of each instance of non-compliance.

SE-1 Approach to stakeholder engagement	a. describe its approach to engaging with stakeholders, including: i. the categories of stakeholders it engages with, and how they are identified; ii. the purpose of the stakeholder engagement; iii. how the organization seeks to ensure meaningful engagement with stakeholders.
SE-2 Collective bargaining agreements	a. report the percentage of total employees covered by collective bargaining agreements; b. for employees not covered by collective bargaining agreements, report whether it determines their working conditions and terms of employment based on its existing collective bargaining agreements that cover other employees or based on collective bargaining agreements from other organizations.
MT-1 Identification of material topics and related impacts	a. report how it has identified its material topics, including: i. how it has identified actual and potential, negative and positive impacts on the economy, environment, and people, including impacts on human rights,across its own activities and business relationships; ii. how it has prioritized impacts for reporting based on their significance; iii. the stakeholders and experts whose views have informed the identification of material topics; b. report changes in the material topics compared to the previous reporting period.
MT-2 Material topics and related impacts	a. report the material topics it has identified; b. for each material topic: i. describe the actual and potential, negative and/or positive impacts identified on the economy, environment, and people, including impacts on human rights; ii. report whether the organization is involved with the negative impacts through its own activities or as a result of its business relationships.
MT-3 Management of material topics and related impacts	For each material topic reported under Disclosure MT-2: a.describe its policies or commitments for the topic; b.describe actions taken to manage the topic and related impacts, in particular: i.actions taken to prevent or mitigate potential negative impacts; ii.actions taken to address actual negative impacts, including actions to provide for or cooperate in their remediation; c.report the following information about the effectiveness of the actions taken: i.processes used to track the effectiveness of the actions taken; ii.goals, targets, and indicators used to evaluate progress; iii.evidence of the extent to which the actions taken have been effective,including progress toward the goals and targets; iv.lessons learned and how these have been incorporated into the organization's operational policies and procedures; d.describe how engagement with stakeholders has informed the actions taken (MT-3-b)and whether the actions taken have been effective (MT-3-c); e.if the organization does not manage a material topic, explain the reason for not managing the topic or describe any plans to manage it.
GRI Topic-specific Disclosures	**Reporting requirements**
201-1 Direct economic value generated and distributed	a. Direct economic value generated and distributed (EVG&D) on an accruals basis, including the basic components for the organization's global operations as listed below. If data are presented on a cash basis, report the justification for this decision in addition to reporting the following basic components: i. Direct economic value generated: revenues; ii. Economic value distributed: operating costs, employee wages and benefits, payments to providers of capital, payments to government by country, and community investments; iii. Economic value retained: 'direct economic value generated' less 'economic value distributed'. b. Where significant, report EVG&D separately at country, regional, or market levels, and the criteria used for defining significance.

201-2 Financial implications and other risks and opportunities due to climate change	a. Risks and opportunities posed by climate change that have the potential to generate substantive changes in operations, revenue, or expenditure, including: i. a description of the risk or opportunity and its classification as either physical, regulatory, or other; ii. a description of the impact associated with the risk or opportunity; **iii. the financial implications of the risk or opportunity before action is taken;** iv. the methods used to manage the risk or opportunity; **v. the costs of actions taken to manage the risk or opportunity.**
202-1 Ratios of standard entry level wage by gender compared to local minimum wage	a. When a significant proportion of employees are compensated based on wages subject to minimum wage rules, report the relevant ratio of the entry level wage by gender at significant locations of operation to the minimum wage. b. When a significant proportion of other workers (excluding employees) performing the organization's activities are compensated based on wages subject to minimum wage rules, describe the actions taken to determine whether these workers are paid above the minimum wage. c. Whether a local minimum wage is absent or variable at significant locations of operation, by gender. In circumstances in which different minimums can be used as a reference, report which minimum wage is being used. d. The definition used for 'significant locations of operation'.
202-2 Proportion of senior management hired from the local community	a. Percentage of senior management at significant locations of operation that are hired from the local community. b. The definition used for 'senior management'. c. The organization's geographical definition of 'local'. d. The definition used for 'significant locations of operation'.
203-1 Infrastructure investments and services supported	a. Extent of development of significant infrastructure investments and services supported. b. Current or expected impacts on communities and local economies, including positive and negative impacts where relevant. c. Whether these investments and services are commercial, in-kind, or pro bono engagements
203-2 Significant indirect economic impacts	a. Examples of significant identified indirect economic impacts of the organization, including positive and negative impacts. b. Significance of the indirect economic impacts in the context of external benchmarks and stakeholder priorities, such as national and international standards, protocols, and policy agendas.
204-1 Proportion of spending on local suppliers	a. Percentage of the procurement budget used for significant locations of operation that is spent on suppliers local to that operation (such as percentage of products and services purchased locally). b. The organization's geographical definition of 'local'. c. The definition used for 'significant locations of operation'.
205-1 Operations assessed for risks related to corruption	a. Total number and percentage of operations assessed for risks related to corruption. b. Significant risks related to corruption identified through the risk assessment.
205-2 Communication and training about anti-corruption policies and procedures	a. Total number and percentage of governance body members that the organization's anti-corruption policies and procedures have been communicated to, broken down by region. b. Total number and percentage of employees that the organization's anti-corruption policies and procedures have been communicated to, broken down by employee category and region. c. Total number and percentage of business partners that the organization's anti-corruption policies and procedures have been communicated to, broken down by type of business partner and region. Describe if the organization's anti-corruption policies and procedures have been communicated to any other persons or organizations. d. Total number and percentage of governance body members that have received training on anti-corruption, broken down by region. e. Total number and percentage of employees that have received training on anti-corruption, broken down by employee category and region.

205-3 Confirmed incidents of corruption and actions taken	a. Total number and nature of confirmed incidents of corruption. b. Total number of confirmed incidents in which employees were dismissed or disciplined for corruption. c. Total number of confirmed incidents when contracts with business partners were terminated or not renewed due to violations related to corruption. d. Public legal cases regarding corruption brought against the organization or its employees during the reporting period and the outcomes of such cases.
206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	a. Number of legal actions pending or completed during the reporting period regarding anti-competitive behavior and violations of anti-trust and monopoly legislation in which the organization has been identified as a participant. b. Main outcomes of completed legal actions, including any decisions or judgments.
207-3 Stakeholder engagement and management of concerns related to tax	a. A description of the approach to stakeholder engagement and management of stakeholder concerns related to tax, including: i. the approach to engagement with tax authorities; ii. the approach to public policy advocacy on tax; iii. the processes for collecting and considering the views and concerns of stakeholders, including external stakeholders.
301-1 Materials used by weight or volume	Total weight or volume of materials that are used to produce and package the organization's primary products and services during the reporting period, by: i. non-renewable materials used; ii. renewable materials used.
301-2 Recycled input materials used	Percentage of recycled input materials used to manufacture the organization's primary products and services.
301-3 Reclaimed products and their packaging materials	a. Percentage of reclaimed products and their packaging materials for each product category. b. How the data for this disclosure have been collected.
302-1 Energy consumption within the organization	a. Total fuel consumption within the organization from non-renewable sources, in joules or multiples, and including fuel types used. b. Total fuel consumption within the organization from renewable sources, in joules or multiples, and including fuel types used. c. In joules, watt-hours or multiples, the total: i. electricity consumption ii. heating consumption iii. cooling consumption iv. steam consumption d. In joules, watt-hours or multiples, the total: i. electricity sold ii. heating sold iii. cooling sold iv. steam sold e. Total energy consumption within the organization, in joules or multiples. f. Standards, methodologies, assumptions, and/or calculation tools used. g. Source of the conversion factors used.
302-2 Energy consumption outside of the organization	a. Energy consumption outside of the organization, in joules or multiples. b. Standards, methodologies, assumptions, and/or calculation tools used. c. Source of the conversion factors used.
302-3 Energy intensity	a. Energy intensity ratio for the organization. b. Organization-specific metric (the denominator) chosen to calculate the ratio. c. Types of energy included in the intensity ratio; whether fuel, electricity, heating, cooling, steam, or all. d. Whether the ratio uses energy consumption within the organization, outside of it, or both.
302-4 Reduction of energy consumption	a. Amount of reductions in energy consumption achieved as a direct result of conservation and efficiency initiatives, in joules or multiples. b. Types of energy included in the reductions; whether fuel, electricity, heating, cooling, steam, or all. c. Basis for calculating reductions in energy consumption, such as base year or baseline, including the rationale for choosing it.

	d. Standards, methodologies, assumptions, and/or calculation tools used.
302-5 Reduction in energy requirements of products and services	a. Reductions in energy requirements of sold products and services achieved during the reporting period, in joules or multiples. b. Basis for calculating reductions in energy consumption, such as base year or baseline, including the rationale for choosing it. c. Standards, methodologies, assumptions, and/or calculation tools used.
303-1 Interactions with water as a shared resource	a. A description of how the organization interacts with water, including how and where water is withdrawn, consumed, and discharged, and the water-related impacts caused or contributed to, or directly linked to the organization's activities, products or services by a business relationship (e.g., impacts caused by runoff). b. A description of the approach used to identify water-related impacts, including the scope of assessments, their timeframe, and any tools or methodologies used. c. A description of how water-related impacts are addressed, including how the organization works with stakeholders to steward water as a shared resource, and how it engages with suppliers or customers with significant water-related impacts. d. An explanation of the process for setting any water-related goals and targets that are part of the organization's management approach, and how they relate to public policy and the local context of each area with water stress.
303-2 Management of water discharge-related impacts	A description of any minimum standards set for the quality of effluent discharge, and how these minimum standards were determined, including: i. how standards for facilities operating in locations with no local discharge requirements were determined; ii. any internally developed water quality standards or guidelines; iii. any sector-specific standards considered; iv. whether the profile of the receiving waterbody was considered.
303-3 Water withdrawal	a. Total water withdrawal from all areas in megaliters, and a breakdown of this total by the following sources, if applicable: i. Surface water; ii. Groundwater; iii. Seawater; iv. Produced water; v. Third-party water. b. Total water withdrawal from all areas with water stress in megaliters, and a breakdown of this total by the following sources, if applicable: i. Surface water; ii. Groundwater; iii. Seawater; iv. Produced water; v. Third-party water, and a breakdown of this total by the withdrawal sources listed in i-iv. c. A breakdown of total water withdrawal from each of the sources listed in Disclosures 303-3-a and 303-3-b in megaliters by the following categories: i. Freshwater (≤1,000 mg/L Total Dissolved Solids); ii. Other water (>1,000 mg/L Total Dissolved Solids). d. Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used.

303-4Water discharge	a. Total water discharge to all areas in megaliters, and a breakdown of this total by the following types of destination, if applicable: i. Surface water; ii. Groundwater; iii. Seawater; iv. Third-party water, and the volume of this total sent for use to other organizations, if applicable. b. A breakdown of total water discharge to all areas in megaliters by the following categories: i. Freshwater (≤1,000 mg/L Total Dissolved Solids); ii. Other water (>1,000 mg/L Total Dissolved Solids). c. Total water discharge to all areas with water stress in megaliters, and a breakdown of this total by the following categories: i. Freshwater (≤1,000 mg/L Total Dissolved Solids); ii. Other water (>1,000 mg/L Total Dissolved Solids). d. Priority substances of concern for which discharges are treated, including: i. how priority substances of concern were defined, and any international standard, authoritative list, or criteria used; ii. the approach for setting discharge limits for priority substances of concern; iii. number of incidents of non-compliance with discharge limits. e. Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used.
303-5Water consumption	a. Total water consumption from all areas in megaliters. b. Total water consumption from all areas with water stress in megaliters. c. Change in water storage in megaliters, if water storage has been identified as having a significant water-related impact. d. Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used, including whether the information is calculated, estimated, modeled, or sourced from direct measurements, and the approach taken for this, such as the use of any sector-specific factors.
304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	a. For each operational site owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas, the following information: i. Geographic location; ii. Subsurface and underground land that may be owned, leased, or managed by the organization; iii. Position in relation to the protected area (in the area, adjacent to, or containing portions of the protected area) or the high biodiversity value area outside protected areas; iv. Type of operation (office, manufacturing or production, or extractive); v. Size of operational site in km2 (or another unit, if appropriate); vi. Biodiversity value characterized by the attribute of the protected area or area of high biodiversity value outside the protected area (terrestrial, freshwater, or maritime ecosystem); vii. Biodiversity value characterized by listing of protected status (such as IUCN Protected Area Management Categories, Ramsar Convention, national legislation).

304-2 Significant impacts of activities, products, and services on biodiversity	a. Nature of significant direct and indirect impacts on biodiversity with reference to one or more of the following: i. Construction or use of manufacturing plants, mines, and transport infrastructure; ii. Pollution (introduction of substances that do not naturally occur in the habitat from point and non-point sources); iii. Introduction of invasive species, pests, and pathogens; iv. Reduction of species; v. Habitat conversion; vi. Changes in ecological processes outside the natural range of variation (such as salinity or changes in groundwater level). b. Significant direct and indirect positive and negative impacts with reference to the following: i. Species affected; ii. Extent of areas impacted; iii. Duration of impacts; iv. Reversibility or irreversibility of the impacts.
304-3 Habitats protected or restored	a. Size and location of all habitat areas protected or restored, and whether the success of the restoration measure was or is approved by independent external professionals. b. Whether partnerships exist with third parties to protect or restore habitat areas distinct from where the organization has overseen and implemented restoration or protection measures. c. Status of each area based on its condition at the close of the reporting period. d. Standards, methodologies, and assumptions used.
304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations	a. Total number of IUCN Red List species and national conservation list species with habitats in areas affected by the operations of the organization, by level of extinction risk: i. Critically endangered ii. Endangered iii. Vulnerable iv. Near threatened v. Least concern
305-1 Direct (Scope 1) GHG emissions	a. Gross direct (Scope 1) GHG emissions in metric tons of CO2 equivalent. b. Gases included in the calculation; whether CO2, CH4, N2O, HFCs, PFCs, SF6, NF3, or all. c. Biogenic CO2 emissions in metric tons of CO2 equivalent. d. Base year for the calculation, if applicable, including: i. the rationale for choosing it; ii. emissions in the base year; iii. the context for any significant changes in emissions that triggered recalculations of base year emissions. e. Source of the emission factors and the global warming potential (GWP) rates used, or a reference to the GWP source. f. Consolidation approach for emissions; whether equity share, financial control, or operational control. g. Standards, methodologies, assumptions, and/or calculation tools used.
305-2 Energy indirect (Scope 2) GHG emissions	a. Gross location-based energy indirect (Scope 2) GHG emissions in metric tons of CO2 equivalent. b. If applicable, gross market-based energy indirect (Scope 2) GHG emissions in metric tons of CO2 equivalent. c. If available, the gases included in the calculation; whether CO2, CH4, N2O, HFCs, PFCs, SF6, NF3, or all. d. Base year for the calculation, if applicable, including: i. the rationale for choosing it; ii. emissions in the base year; iii. the context for any significant changes in emissions that triggered recalculations of base year emissions. e. Source of the emission factors and the global warming potential (GWP) rates used, or a reference to the GWP source. f. Consolidation approach for emissions; whether equity share, financial control, or operational control.

	g. Standards, methodologies, assumptions, and/or calculation tools used.
305-3 Other indirect (Scope 3) GHG emissions	a. Gross other indirect (Scope 3) GHG emissions in metric tons of CO2 equivalent. b. If available, the gases included in the calculation; whether CO2, CH4, N2O, HFCs, PFCs, SF6, NF3, or all. c. Biogenic CO2 emissions in metric tons of CO2 equivalent. d. Other indirect (Scope 3) GHG emissions categories and activities included in the calculation. e. Base year for the calculation, if applicable, including: i. the rationale for choosing it; ii. emissions in the base year; iii. the context for any significant changes in emissions that triggered recalculations of base year emissions. f. Source of the emission factors and the global warming potential (GWP) rates used, or a reference to the GWP source. g. Standards, methodologies, assumptions, and/or calculation tools used.
305-4 GHG emissions intensity	a. GHG emissions intensity ratio for the organization. b. Organization-specific metric (the denominator) chosen to calculate the ratio. c. Types of GHG emissions included in the intensity ratio; whether direct (Scope 1), energy indirect (Scope 2), and/or other indirect (Scope 3). d. Gases included in the calculation; whether CO2, CH4, N2O, HFCs, PFCs, SF6, NF3, or all.
305-5 Reduction of GHG emissions	a. GHG emissions reduced as a direct result of reduction initiatives, in metric tons of CO2 equivalent. b. Gases included in the calculation; whether CO2, CH4, N2O, HFCs, PFCs, SF6, NF3, or all. c. Base year or baseline, including the rationale for choosing it. d. Scopes in which reductions took place; whether direct (Scope 1), energy indirect (Scope 2), and/or other indirect (Scope 3). e. Standards, methodologies, assumptions, and/or calculation tools used.
305-6 Emissions of ozone-depleting substances (ODS)	a. Production, imports, and exports of ODS in metric tons of CFC-11 (trichlorofluoromethane) equivalent. b. Substances included in the calculation. c. Source of the emission factors used. d. Standards, methodologies, assumptions, and/or calculation tools used.
305-7 Nitrogen oxides (NOX), sulfur oxides (SOX), and other significant air emissions	a. Significant air emissions, in kilograms or multiples, for each of the following: i. NOX ii. SOX iii. Persistent organic pollutants (POP) iv. Volatile organic compounds (VOC) v. Hazardous air pollutants (HAP) vi. Particulate matter (PM) vii. Other standard categories of air emissions identified in relevant regulations b. Source of the emission factors used. c. Standards, methodologies, assumptions, and/or calculation tools used.
306-1 Waste generation and significant	a. For the organization's significant actual and potential waste-related impacts, a description of:

waste-related impacts	i. the inputs, activities, and outputs that lead or could lead to these impacts; ii. whether these impacts relate to waste generated in the organization's own activities or to waste generated upstream or downstream in its **value chain.**
306-2 Management of significant waste-related impacts	a. Actions, including circularity measures, taken to prevent waste generation in the organization's own activities and upstream and downstream in its value chain, and to manage significant impacts from waste generated. b. If the waste generated by the organization in its own activities is managed by a third party, a description of the processes used to determine whether the third party manages the waste in line with contractual or legislative obligations. c. The processes used to collect and monitor waste-related data.
306-3 Waste generated	a. Total weight of waste generated in metric tons, and a breakdown of this total by composition of the waste. b. Contextual information necessary to understand the data and how the data has been compiled
306-4 Waste diverted from disposal	a. Total weight of waste diverted from disposal in metric tons, and a breakdown of this total by composition of the waste. b. Total weight of hazardous waste diverted from disposal in metric tons, and a breakdown of this total by the following recovery operations: i. Preparation for reuse; ii. Recycling; iii. Other recovery operations. c. Total weight of non-hazardous waste diverted from disposal in metric tons, and a breakdown of this total by the following recovery operations: i. Preparation for reuse; ii. Recycling; iii. Other recovery operations. d. For each recovery operation listed in Disclosures 306-4-b and 306-4-c, a breakdown of the total weight in metric tons of hazardous waste and of non-hazardous waste diverted from disposal: i. onsite; ii. offsite. e. Contextual information necessary to understand the data and how the data has been compiled.
306-5 Waste directed to disposal	a. Total weight of waste directed to disposal in metric tons, and a breakdown of this total by composition of the waste. b. Total weight of hazardous waste directed to disposal in metric tons, and a breakdown of this total by the following disposal operations: i. Incineration (with energy recovery); ii. Incineration (without energy recovery); iii. Landfilling; iv. Other disposal operations. c. Total weight of non-hazardous waste directed to disposal in metric tons, and a breakdown of this total by the following disposal operations: i. Incineration (with energy recovery); ii. Incineration (without energy recovery); iii. Landfilling; iv. Other disposal operations. d. For each disposal operation listed in Disclosures 306-5-b and 306-5-c, a breakdown of the total weight in metric tons of hazardous waste and of non-hazardous waste directed to disposal: i. onsite; ii. offsite. e. Contextual information necessary to understand the data and how the data has been compiled.
307-1 Non-compliance with environmental laws and regulations	a. Significant fines and non-monetary sanctions for non-compliance with environmental laws and/or regulations in terms of: i. total monetary value of significant fines; ii. total number of non-monetary sanctions;

	iii. cases brought through dispute resolution mechanisms. b. If the organization has not identified any non-compliance with environmental laws and/or regulations, a brief statement of this fact is sufficient.
308-1 New suppliers that were screened using environmental criteria	a. Percentage of new suppliers that were screened using environmental criteria.
308-2 Negative environmental impacts in the supply chain and actions taken	a. Number of suppliers assessed for environmental impacts. b. Number of suppliers identified as having significant actual and potential negative environmental impacts. c. Significant actual and potential negative environmental impacts identified in the supply chain. d. Percentage of suppliers identified as having significant actual and potential negative environmental impacts with which improvements were agreed upon as a result of assessment. e. Percentage of suppliers identified as having significant actual and potential negative environmental impacts with which relationships were terminated as a result of assessment, and why.
401-1 New employee hires and employee turnover	a. Total number and rate of new employee hires during the reporting period, by age group, gender and region. b. Total number and rate of employee turnover during the reporting period, by age group, gender and region.
401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	a. Benefits which are standard for full-time employees of the organization but are not provided to temporary or part-time employees, by significant locations of operation. These include, as a minimum: i. life insurance; ii. health care; iii. disability and invalidity coverage; iv. parental leave; v. retirement provision; vi. stock ownership; vii. others. b. The definition used for 'significant locations of operation'.
401-3 Parental leave	a. Total number of employees that were entitled to parental leave, by gender. b. Total number of employees that took parental leave, by gender. c. Total number of employees that returned to work in the reporting period after parental leave ended, by gender. d. Total number of employees that returned to work after parental leave ended that were still employed 12 months after their return to work, by gender. e. Return to work and retention rates of employees that took parental leave, by gender.
Minimum notice periods regarding operational changes	a. Minimum number of weeks' notice typically provided to employees and their representatives prior to the implementation of significant operational changes that could substantially affect them. b. For organizations with collective bargaining agreements, report whether the notice period and provisions for consultation and negotiation are specified in collective agreements.
403-1 Occupational health and safety management system	a. A statement of whether an occupational health and safety management system has been implemented, including whether: i. the system has been implemented because of legal requirements and, if so, a list of the requirements; ii. the system has been implemented based on recognized risk management and/or management system standards/guidelines and, if so, a list of the standards/guidelines. b. A description of the scope of workers, activities, and workplaces covered by the occupational health and safety management system, and an explanation of whether and, if so, why any workers, activities, or workplaces are not covered.

403-2 Hazard identification, risk assessment, and incident investigation	a. A description of the processes used to identify work-related hazards and assess risks on a routine and non-routine basis, and to apply the hierarchy of controls in order to eliminate hazards and minimize risks, including: i. how the organization ensures the quality of these processes, including the competency of persons who carry them out; ii. how the results of these processes are used to evaluate and continually improve the occupational health and safety management system. b. A description of the processes for workers to report work-related hazards and hazardous situations, and an explanation of how workers are protected against reprisals. c. A description of the policies and processes for workers to remove themselves from work situations that they believe could cause injury or ill health, and an explanation of how workers are protected against reprisals. d. A description of the processes used to investigate work-related incidents, including the processes to identify hazards and assess risks relating to the incidents, to determine corrective actions using the hierarchy of controls, and to determine improvements needed in the occupational health and safety management system.
403-3 Occupational health services	a. A description of the occupational health services' functions that contribute to the identification and elimination of hazards and minimization of risks, and an explanation of how the organization ensures the quality of these services and facilitates workers' access to them.
403-4 Worker participation, consultation, and communication on occupational health and safety	a. A description of the processes for worker participation and consultation in the development, implementation, and evaluation of the occupational health and safety management system, and for providing access to and communicating relevant information on occupational health and safety to workers. b. Where formal joint management–worker health and safety committees exist, a description of their responsibilities, meeting frequency, decision-making authority, and whether and, if so, why any workers are not represented by these committees.
403-5 Worker training on occupational health and safety	a. A description of any occupational health and safety training provided to workers, including generic training as well as training on specific work-related hazards, hazardous activities, or hazardous situations.
403-6 Promotion of worker health	a. An explanation of how the organization facilitates workers' access to non-occupational medical and healthcare services, and the scope of access provided. b. A description of any voluntary health promotion services and programs offered to workers to address major non-work-related health risks, including the specific health risks addressed, and how the organization facilitates workers' access to these services and programs.
403-7 Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	a. A description of the organization's approach to preventing or mitigating significant negative occupational health and safety impacts that are directly linked to its operations, products or services by its business relationships, and the related hazards and risks.
403-8 Workers covered by an occupational health and safety management system	a. If the organization has implemented an occupational health and safety management system based on legal requirements and/or recognized standards/guidelines: i. the number and percentage of all employees and workers who are not employees but whose work and/or workplace is controlled by the organization, who are covered by such a system; ii. the number and percentage of all employees and workers who are not employees but whose work and/or workplace is controlled by the organization, who are covered by such a system that has been internally audited; iii. the number and percentage of all employees and workers who are not employees but whose work and/or workplace is controlled by the organization, who are covered by such a system that has been audited or certified by an external party. b. Whether and, if so, why any workers have been excluded from this disclosure, including the types of worker excluded. c. Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used.

403-9 Work-related injuries	a. For all employees: i. The number and rate of fatalities as a result of work-related injury; ii. The number and rate of high-consequence work-related injuries (excluding fatalities); iii. The number and rate of recordable work-related injuries; iv. The main types of work-related injury; v. The number of hours worked. b. For all workers who are not employees but whose work and/or workplace is controlled by the organization: i. The number and rate of fatalities as a result of work-related injury; ii. The number and rate of high-consequence work-related injuries (excluding fatalities); iii. The number and rate of recordable work-related injuries; iv. The main types of work-related injury; v. The number of hours worked. c. The work-related hazards that pose a risk of high-consequence injury, including: i. how these hazards have been determined; ii. which of these hazards have caused or contributed to high-consequence injuries during the reporting period; iii. actions taken or underway to eliminate these hazards and minimize risks using the hierarchy of controls. d. Any actions taken or underway to eliminate other work-related hazards and minimize risks using the hierarchy of controls. e. Whether the rates have been calculated based on 200,000 or 1,000,000 hours worked. f. Whether and, if so, why any workers have been excluded from this disclosure, including the types of worker excluded. g. Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used.
403-10 Work-related ill health	a. For all employees: i. The number of fatalities as a result of work-related ill health; ii. The number of cases of recordable work-related ill health; iii. The main types of work-related ill health. b. For all workers who are not employees but whose work and/or workplace is controlled by the organization: i. The number of fatalities as a result of work-related ill health; ii. The number of cases of recordable work-related ill health; iii. The main types of work-related ill health. c. The work-related hazards that pose a risk of ill health, including: i. how these hazards have been determined; ii. which of these hazards have caused or contributed to cases of ill health during the reporting period; iii. actions taken or underway to eliminate these hazards and minimize risks using the hierarchy of controls. d. Whether and, if so, why any workers have been excluded from this disclosure, including the types of worker excluded. e. Any contextual information necessary to understand how the data have been compiled, such as any standards, methodologies, and assumptions used.
404-1 Average hours of training per year per employee	a. Average hours of training that the organization's employees have undertaken during the reporting period, by: i. gender; ii. employee category.
404-2 Programs for upgrading employee skills and transition assistance programs	a. Type and scope of programs implemented and assistance provided to upgrade employee skills. b. Transition assistance programs provided to facilitate continued employability and the management of career endings resulting from retirement or termination of employment.
404-3 Percentage of employees receiving regular performance and career development reviews	a. Percentage of total employees by gender and by employee category who received a regular performance and career development review during the reporting period.

405-1 Diversity of governance bodies and employees	a. Percentage of individuals within the organization's governance bodies in each of the following diversity categories: i. Gender; ii. Age group: under 30 years old, 30-50 years old, over 50 years old; iii. Other indicators of diversity where relevant (such as minority or vulnerable groups). b. Percentage of employees per employee category in each of the following diversity categories: i. Gender; ii. Age group: under 30 years old, 30-50 years old, over 50 years old; iii. Other indicators of diversity where relevant (such as minority or vulnerable groups).
405-2 Ratio of basic salary and remuneration of women to men	a. Ratio of the basic salary and remuneration of women to men for each employee category, by significant locations of operation. b. The definition used for 'significant locations of operation'.
406-1 Incidents of discrimination and corrective actions taken	a. Total number of incidents of discrimination during the reporting period. b. Status of the incidents and actions taken with reference to the following: i. Incident reviewed by the organization; ii. Remediation plans being implemented; iii. Remediation plans that have been implemented, with results reviewed through routine internal management review processes; iv. Incident no longer subject to action.
407-1 Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	a. Operations and suppliers in which workers' rights to exercise freedom of association or collective bargaining may be violated or at significant risk either in terms of: i. type of operation (such as manufacturing plant) and supplier; ii. countries or geographic areas with operations and suppliers considered at risk. b. Measures taken by the organization in the reporting period intended to support rights to exercise freedom of association and collective bargaining
408-1 Operations and suppliers at significant risk for incidents of child labor	a. Operations and suppliers considered to have significant risk for incidents of: i. child labor; ii. young workers exposed to hazardous work. b. Operations and suppliers considered to have significant risk for incidents of child labor either in terms of: i. type of operation (such as manufacturing plant) and supplier; ii. countries or geographic areas with operations and suppliers considered at risk. c. Measures taken by the organization in the reporting period intended to contribute to the effective abolition of child labor.
409-1 Operations and suppliers at ignificant risk for incidents of forced or compulsory labor	a. Operations and suppliers considered to have significant risk for incidents of forced or ompulsory labor either in terms of: i. type of operation (such as manufacturing plant) and supplier; ii. countries or geographic areas with operations and suppliers considered at risk. b. Measures taken by the organization in the reporting period intended to contribute to the elimination of all forms of forced or compulsory labor.
410-1 Security personnel trained in human rights policies or procedures	a. Percentage of security personnel who have received formal training in the organization's human rights policies or specific procedures and their application to security. b. Whether training requirements also apply to third-party organizations providing security personnel.
411-1 Incidents of violations involving rights of indigenous peoples	a. Total number of identified incidents of violations involving the rights of indigenous peoples during the reporting period. b. Status of the incidents and actions taken with reference to the following: i. Incident reviewed by the organization; ii. Remediation plans being implemented; iii. Remediation plans that have been implemented, with results reviewed through routine internal management review processes; iv. Incident no longer subject to action.
412-1 Operations that have been subject to human rights reviews or impact assessments	a. Total number and percentage of operations that have been subject to human rights reviews or human rights impact assessments, by country.

412-2 Employee training on human rights policies or procedures	a. Total number of hours in the reporting period devoted to training on human rights policies or procedures concerning aspects of human rights that are relevant to operations. b. Percentage of employees trained during the reporting period in human rights policies or procedures concerning aspects of human rights that are relevant to operations.
412-3 Significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	a. Total number and percentage of significant investment agreements and contracts that include human rights clauses or that underwent human rights screening. b. The definition used for 'significant investment agreements'.
413-1 Operations with local community engagement, impact assessments, and development programs	a. Percentage of operations with implemented local community engagement, impact assessments, and/or development programs, including the use of: i. social impact assessments, including gender impact assessments, based on participatory processes; ii. environmental impact assessments and ongoing monitoring; iii. public disclosure of results of environmental and social impact assessments; iv. local community development programs based on local communities' needs; v. stakeholder engagement plans based on stakeholder mapping; vi. broad based local community consultation committees and processes that include ulnerable groups; vii. works councils, occupational health and safety committees and other worker representation bodies to deal with impacts; viii. formal local community grievance processes.
413-2 Operations with significant actual and potential negative impacts on local communities	a. Operations with significant actual and potential negative impacts on local communities, including: i. the location of the operations; ii. the significant actual and potential negative impacts of operations.
414-1 New suppliers that were screened using social criteria	a. Percentage of new suppliers that were screened using social criteria.
414-2 Negative social impacts in the supply chain and actions taken	a. Number of suppliers assessed for social impacts. b. Number of suppliers identified as having significant actual and potential negative social impacts. c. Significant actual and potential negative social impacts identified in the supply chain. d. Percentage of suppliers identified as having significant actual and potential negative social impacts with which improvements were agreed upon as a result of assessment. e. Percentage of suppliers identified as having significant actual and potential negative social impacts with which relationships were terminated as a result of assessment, and why.
416-1 Assessment of the health and safety impacts of product and service categories	a. Percentage of significant product and service categories for which health and safety impacts are assessed for improvement.
416-2 Incidents of non-compliance concerning the health and safety impacts of products and services	a. Total number of incidents of non-compliance with regulations and/or voluntary codes concerning the health and safety impacts of products and services within the reporting period, by: i. incidents of non-compliance with regulations resulting in a fine or penalty; ii. incidents of non-compliance with regulations resulting in a warning; iii. incidents of non-compliance with voluntary codes. b. If the organization has not identified any non-compliance with regulations and/or voluntary codes, a brief statement of this fact is sufficient.
417-1 Requirements for product and service information and labeling	a. Whether each of the following types of information is required by the organization's procedures for product and service information and labeling: i. The sourcing of components of the product or service; ii. Content, particularly with regard to substances that might produce an environmental or social impact; iii. Safe use of the product or service; iv. Disposal of the product and environmental or social impacts; v. Other (explain). b. Percentage of significant product or service categories covered by and assessed for compliance

	with such procedures.
417-2 Incidents of non-compliance concerning product and service information and labeling	a. Total number of incidents of non-compliance with regulations and/or voluntary codes concerning product and service information and labeling, by: i. incidents of non-compliance with regulations resulting in a fine or penalty; ii. incidents of non-compliance with regulations resulting in a warning; iii. incidents of non-compliance with voluntary codes. b. If the organization has not identified any non-compliance with regulations and/or voluntary codes, a brief statement of this fact is sufficient.
417-3 Incidents of non-compliance concerning marketing communications	a. Total number of incidents of non-compliance with regulations and/or voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship, by: i. incidents of non-compliance with regulations resulting in a fine or penalty; ii. incidents of non-compliance with regulations resulting in a warning; iii. incidents of non-compliance with voluntary codes. b. If the organization has not identified any non-compliance with regulations and/or voluntary codes, a brief statement of this fact is sufficient.
418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	a. Total number of substantiated complaints received concerning breaches of customer privacy, categorized by: i. complaints received from outside parties and substantiated by the organization; ii. complaints from regulatory bodies. b. Total number of identified leaks, thefts, or losses of customer data. c. If the organization has not identified any substantiated complaints, a brief statement of this fact is sufficient.
419-1 Non-compliance with laws and regulations in the social and economic area	a. Significant fines and non-monetary sanctions for non-compliance with laws and/or regulations in the social and economic area in terms of: i. total monetary value of significant fines; ii. total number of non-monetary sanctions; iii. cases brought through dispute resolution mechanisms. b. If the organization has not identified any non-compliance with laws and/or regulations, a brief statement of this fact is sufficient. c. The context against which significant fines and non-monetary sanctions were incurred.

APPENDIX E. SASB Relevance to Infrastructure

SASB has established its own industry classification: the Sustainable Industry Classification System® (SICS®), which groups companies based on their sustainability-related risks and opportunities. It is *"an impact-focused methodology categorizing companies under a sustainability lens. SICS builds on and complements traditional classification systems by grouping companies into sectors and industries in accordance with a fundamental view of their business model, their resource intensity and sustainability impacts, and their sustainability innovation potential. Each of the following 77 industries (across 11 sectors) has its own unique set of sustainability accounting standards in the SASB system."*[69]

There is an 'Infrastructure sector' among SASB's 11 sectors. However, key infrastructure industries such as transportation, renewable energy, and telecommunications, which are within AISI's scope, are not included due to SASB's impact-based classification. Therefore a selection of those standards across different SASB sectors is necessary to form a complete list of indicators relevant to infrastructure projects.

[69] Sustainability Accounting Standards Board, SASB'S SUSTAINABLE INDUSTRY CLASSIFICATION SYSTEM® (SICS®)

Sectors/ Industries considered in SASB

SECTORS	INDUSTRIES (a total of 77)	INFRASTRUCTURE RELEVANT
1. Consumer goods	7 Industries	NO
2. Extractives & Minerals Processing	1. Coal Operations	NO
	2. Construction Materials	YES
	3. Iron & Steel Producers	YES
	4. Metals & Mining	NO
	5. Oil & Gas - Exploration & Production	NO
	6. Oil & Gas – Midstream	NO
	7. Oil & Gas - Refining & Marketing	NO
	8. Oil & Gas - Services	NO
3. Financials (7 Industries)	7 Industries	NO
4. Food & Beverage	8 Industries	NO
5. Healthcare	6 Industries	NO
6. Infrastructure (8 Industries)	1. Electric Utilities & Power Generators	YES
	2. Engineering & Construction Services	YES
	3. Gas Utilities & Distributors	YES
	4. Home Builders	NO
	5. Real Estate	MAYBE?
	6. Real Estate Services	MAYBE?
	7. Waste Management	YES
	8. Water Utilities & Services	YES
7. Renewable Resources & Alternative Energy (6 Industries)	1. Biofuels	MAYBE?
	2. Forestry Management	NO
	3. Fuel Cells & Industrial Batteries	NO
	4. Pulp & Paper Products	NO
	5. Solar Technology & Project Developers	YES
	6. Wind Technology & Project Developers	YES
8. Resource Transformation	5 Industries	NO
9. Services	7 Industries	NO
10. Technology & Communications (6 Industries)	1. Electronic Manufacturing Services & Original Design Manufacturing	NO
	2. Hardware	NO
	3. Internet Media & Services	NO
	4. Semiconductors	NO
	5. Software & IT Services	NO
	6. Telecommunication Services	YES
11. Transportation (9 Industries)	1. Air Freight & Logistics	YES
	2. Airlines	NO
	3. Auto Parts	NO
	4. Automobiles	NO
	5. Car Rental & Leasing	NO
	6. Cruise Lines	NO
	7. Marine Transportation	YES
	8. Rail Transportation	YES
	9. Road Transportation	YES

APPENDIX F. Additional Information on WEF IBC Standard Analysis

Existing disclosures used as sources

WEF		EXISTING DISCLOSURES USED AS SOURCES												
PILLARS	THEMES	SOURCES FOR CORE METRICS						SOURCES FOR EXPANDED METRICS						
		GRI	IRR	CDSB	SASB	TCDF	ISO	GRI	IRR	CDSB	SASB	TCDF	ISO	UN
PRINCIPLE OF GOVERNMENT	Governing purpose	GRI 102-26						GRI 102-26						
	Quality of governing body	GRI 102-22,GRI 405-1a,	IR 4B					GRI 102-35						
	Stakeholder engagement	GRI 102-21, GRI 102-43, GRI 102-47												
	Ethical behaviour	GRI 205-2, GRI 205-3,GRI 102-17						GRI 415			SASB 510a.1			
	Risk and opportunity oversight	GRI 102-15	IR 4D							CDSB REQ-02				
PLANET	Climate change	GRI 305-1-3		CDSB R01, R02, R03, R04 and R06	SASB 110	TCFD							ISO14008	
	Nature loss	GRI 304-1			SASB CG-HP-140a.1								ISO14008	
	Freshwater availability												ISO14008	
	Air pollution							GRI 305-7						
	Water pollution				SASB CN0101-11		ISO14008							
	Solid waste						ISO14008							
	Resource availability													
PEOPLE	Dignity and equality	GRI 405-1b, GRI 405-2, GRI 202-1, GRI 408-1b, GRI 409-1a						GRI 102-38, GRI 406-1, GRI 407-1, GRI 412-1,GRI 408-1a, GRI 408-1a and GRI 409-1,			SASB FR 310a.4, SASB CN0401-17,			UN Guiding Principles
	Health and well-being	GRI:2018 403-9a&b, GRI:2018 403-6a						GRI:2018 403-10a&b,GRI:2016 403-2a						
	Skills for the future	GRI 404-1,			SASB HC 101-15									
PROSPERITY	Employment and wealth generation	GRI 401-1a&b, GRI 201-1, GRI 201-4,						GRI 203-1, GRI 203-2, GRI (FIFS7 + FIFS8)			SASB FN0102-16.a,			
	Innovation of better products and services													
	Community and social vitality	GRI 201-1						GRI 201-1						

Number of Indicators per Topic

AISI TOPICS	No.of Indicators per topic	WEF THEMES	No.of Indicators per theme
Option Assessment	**1**	**Governing purpose**	**2**

		Risk and opportunity oversight	2
Gender	1	Dignity and equality	9
		Quality of governing body	3
Resilience	1	Risk and opportunity oversight	2
		Climate change	4
Stakeholder Engagement	5	Quality of governing body	3
		Stakeholder engagement	1
Water pollution	3	Freshwater availability	2
		Water pollution	2
Air Quality	1	Air pollution	2
Energy / GHG	2	Climate change	4
Materials lifecycle approach	2	Solid waste	2
		Resource availability	1
Ecosystem and land use	2	Nature loss	3
Sustainability Management System	2	Dignity and equality	9
		Quality of governing body	3
		Risk and opportunity oversight	2
		Governing purpose	2
Anti-corruption	1	Ethical behaviour	4
		Community and social vitality	4
Procurement Process	1	N/A	
Working Conditions	5	Dignity and equality	9
		Health and well-being	3
		Employment and wealth generation	5

APPENDIX G. TCFD-AISI Mapping for Each Non-financial Group

Mapping of AISI's indicators against TCFD's illustrative example metrics for the energy group

ENERGY					
TCFD			AISI		
FINANCIAL CATEGORY	EXAMPLE METRICS	CLIMATE - RELATED CATEGORY	TOPICS	INDICATORS	METRIC
Revenues	Estimated Scope 3 emissions, including methodologies and emission factors used	GHG Emissions	Energy / GSG	12 GHG emissions	Volume of Greenhouse gas emissions emitted by the project
	Revenues/savings from investments in low-carbon alternatives (e.g., R&D, equipment, products or services)	Risk Adaptation & Mitigation	N/A	N/A	N/A

Expenditures	Describe current carbon price or range of prices used	GHG Emissions	**N/A**	**N/A**	**N/A**
	Expenditures (OpEx) for low carbon alternatives (e.g., R&D, equipment, products, or services)	Risk Adaptation & Mitigation	**N/A**	**N/A**	**N/A**
	Proportion of capital allocation to long-lived assets versus short-term assets	Risk Adaptation & Mitigation	**N/A**	**N/A**	**N/A**
	Percent water withdrawn in regions with high or extremely high baseline water stress	Water	**Water**	11 Freshwater withdrawal	Annual volume of fresh water used by the infrastructure project
	Amount of gross global Scope 1 emissions from: (1) combustion, (2) flared hydrocarbons, (3) process emissions, (4) directly vented releases, and (5) fugitive emissions/leaks	GHG Emissions	**Energy / GSG**	12 GHG emissions	Volume of Greenhouse gas emissions emitted by the project
	Indicative costs of supply for current and committed future projects (e.g., through a cost curve or indicative price range. This could be broken down by product, asset, or geography)	Energy/Fuel	**N/A**	**N/A**	**N/A**
Assets	Assets committed in regions with high or extremely high baseline water stress	Water	**Water**	11 Freshwater withdrawal	Annual volume of fresh water used by the infrastructure project
	Investment (CapEx) in low carbon alternatives (e.g., capital equipment or assets)	Risk Adaptation & Mitigation	**Project Sustainability Management**	2 Sustainability management system	Implementation of a sustainable management system and reporting
	A breakdown of reserves by type and an indication of associated emissions factors to provide insight into potential future emissions	GHG Emissions	**Energy / GHG**	12 GHG emissions	Volume of Greenhouse gas emissions emitted by the project
Capital	Capital payback periods or return on capital deployed	Risk Adaptation & Mitigation	**N/A**	**N/A**	**N/A**

The mapping against the Energy group example metrics shows that half of the metrics are not covered by AISI. These are all metrics with economic values that are not required by any AISI indicator.

Mapping of AISI's indicators against TCFD's illustrative example metrics for the transportation group

TRANSPORTATION

TCFD			AISI		
FINANCIAL CATEGORY	EXAMPLE METRICS	CLIMATE - RELATED CATEGORY	TOPICS	INDICATORS	METRIC
Revenues	Sales-weighted average fleet fuel economy, by region and weight/number of people transported	Energy/Fuel	N/A	N/A	N/A
	Revenues/savings from investments in low-carbon alternatives (e.g., R&D, equipment, products or services)	Risk Adaptation & Mitigation	N/A	N/A	N/A
	Vehicle sales (historical, current and projected) by category (e.g., gas vehicles, diesel vehicles, battery electric vehicles, plug-in hybrid electric vehicles, alternative-powered vehicles (LPG, CNG, fuel cells, compressed air)	Risk Adaptation & Mitigation	N/A	N/A	N/A
	Energy Efficiency Design Index (EEDI) for new ships	Risk Adaptation & Mitigation	N/A	N/A	N/A
Expenditures	Expenditures (OpEx) for R&D for low-carbon transportation equipment or transportation services	Risk Adaptation & Mitigation	N/A	N/A	N/A
	Total fuel consumed and percent renewable for road, airlines, marine, rail (?)	Energy/Fuel	**Energy / GSG**	13 Efficient use of energy	Amount of energy consumed by the project
	Road vehicles—Geographic breakdown of GHG emissions: emissions and/or emission intensity of products for key geographies against regulatory requirements/targets	GHG Emissions	Energy / GSG	12 GHG emissions	N/A
Assets	Life cycle reporting of GHG emissions of Transportation products (air, ship, rail, truck, auto)	GHG Emissions	Energy / GSG	12 GHG emissions	Volume of Greenhouse gas emissions emitted by the project
	Investments (CapEx) in low-carbon transportation equipment or transportation services	Risk Adaptation & Mitigation	**Project Sustainability Management**	2 Sustainability management system	Implementation of a sustainable management system and reporting

The mapping against the Transportation group example metrics shows that the majority of TCFD metrics are not covered by AISI. This is either due to the economic values of metrics or due to the metric's focus on transportation infrastructure specific characteristics.[70]

Mapping of AISI's indicators against TCFD's illustrative example metrics for the materials & buildings group

MATERIALS & BUILDINGS					
TCFD			AISI		
FINANCIAL CATEGORY	EXAMPLE METRICS	CLIMATE - RELATED CATEGORY	TOPICS	INDICATORS	METRIC
Revenues	Revenues/savings from investments in low-carbon alternatives (e.g., R&D, equipment, products or services)	Risk Adaptation & Mitigation	**Project Sustainability Management**	2 Sustainability management system	Implementation of a sustainable management system and reporting
Expenditures	Expenditures (OpEx) for low-carbon alternatives (e.g., R&D, technology, products, or services)	Risk Adaptation & Mitigation	**N/A**	**N/A**	**N/A**
	Total energy consumed, broken down by source (e.g., purchased electricity and renewable sources)	Energy/Fuel	**Energy / GSG**	13 Efficient use of energy	Amount of energy consumed by the project
	Total fuel consumed—percentage from coal, natural gas, oil, and renewable sources	Energy/Fuel	**Energy / GSG**	13 Efficient use of energy	Amount of energy consumed by the project
	Total energy intensity—by tons of product, amount of sales, number of products depending on informational value	Energy/Fuel	**Energy / GSG**	13 Efficient use of energy	**N/A**
	Building energy intensity (by occupants or square area)	Energy/Fuel	**Energy / GSG**	13 Efficient use of energy	**N/A**
	Percent of fresh water withdrawn in regions with high or extremely high baseline water stress	Water	**Water**	11 Freshwater withdrawal	Annual volume of fresh water used by the infrastructure project
	Building water intensity (by occupants or square area)	Water	**Water**	11 Freshwater withdrawal	**N/A**

[70] Transportation -related products and fleet, which are mentioned in some metrics, are not considered part of infrastructure definition according to ASSI. ASSI, as mentioned, refers to infrastructure projects encompassed by the World Bank: 'infrastructure' includes economic, social, and government infrastructure—that is, the 'basic physical and organizational structures' needed to make economic, social, and government activity possible (using the Oxford English Dictionary definition).

	GHG emissions intensity from buildings (by occupants or square area) and from new construction and redevelopment	GHG Emissions	**Energy / GSG**	12 GHG emissions	**N/A**
Assets	Area of buildings, plants or properties located in designated flood hazard areas	Location	**Resilience**	**4 Climate Risk Resilience**	**N/A**
	A breakdown of reserves and an indication of associated emissions factors to provide insight into potential future emissions	GHG Emissions	**Energy / GSG**	12 GHG emissions	Volume of Greenhouse gas emissions emitted by the project
	For each property type, the percentage certified as sustainable	Risk Adaptation & Mitigation	**N/A**	**N/A**	**N/A**
	Investment (CapEx) in low-carbon alternatives (e.g., capital equipment or assets)	Risk Adaptation & Mitigation	**Materials lifecycle approach**	15 Reduction of Waste	**N/A**
			Project Sustainability Management	2 Sustainability management system	Implementation of a sustainable management system and reporting

The mapping against the Materials& Buildings group example metrics shows that the majority of TCFD metrics are not covered by AISI. This is either due to the economic values of TCFD example metrics or due to the metric's focus on transportation infrastructure specific characteristics.

Example metrics of TCFD non-financial groups that are not covered by AISI's indicators/metrics (non-financial group)

ENERGY GROUP	Describe current carbon price or range of prices used
	Expenditures (OpEx) for low carbon alternatives (e.g., R&D, equipment, products, or services)
	Proportion of capital allocation to long-lived assets versus short-term assets
	Indicative costs of supply for current and committed future projects (e.g., through a cost curve or indicative price range. This could be broken down by product, asset, or geography)
	Capital payback periods or return on capital deployed
TRANSPORTATION GROUP	Sales-weighted average fleet fuel economy, by region and weight/number of people transported
	Revenues/savings from investments in low-carbon alternatives (e.g., R&D, equipment, products or services)

	Vehicle sales (historical, current and projected) by category (e.g., gas vehicles, diesel vehicles, battery electric vehicles, plug-in hybrid electric vehicles, alternative-powered vehicles (LPG, CNG, fuel cells, compressed air)
	Energy Efficiency Design Index (EEDI) for new ships
	Expenditures (OpEx) for R&D for low-carbon transportation equipment or transportation services
MATERIALS & BUILDINGS GROUP	Expenditures (OpEx) for low-carbon alternatives (e.g., R&D, technology, products, or services)
	For each property type, the percentage certified as sustainable

TCFD's example metrics mapping results - energy group

ENERGY		
TCFD EXAMPLE METRICS	**No of AISI's indicators**	**COVERAGE LEVEL**
Estimated Scope 3 emissions, including methodologies and emission factors used	1	HIGH
Revenues/savings from investments in low-carbon alternatives (e.g., R&D, equipment, products or services)	1	PARTIAL
Describe current carbon price or range of prices used	0	**NONE**
Expenditures (OpEx) for low carbon alternatives (e.g., R&D, equipment, products, or services)	0	**NONE**
Proportion of capital allocation to long-lived assets versus short-term assets	0	**NONE**
Percent water withdrawn in regions with high or extremely high baseline water stress	1	PARTIAL
Amount of gross global Scope 1 emissions from: (1) combustion, (2) flared hydrocarbons, (3) process emissions, (4) directly vented releases, and (5) fugitive emissions/leaks	1	HIGH
Indicative costs of supply for current and committed future projects (e.g., through a cost curve or indicative price range. This could be broken down by product, asset, or geography)	0	**NONE**
Assets committed in regions with high or extremely high baseline water stress	1	PARTIAL
Investment (CapEx) in low-carbon alternatives (e.g., capital equipment or assets)	1	PARTIAL
A breakdown of reserves by type and an indication of associated emissions factors to provide insight into potential future emissions	1	PARTIAL
Capital payback periods or return on capital deployed	0	**NONE**

The above mapping table shows that 6 out of 12 example metrics of TCFD for energy group are covered by AISI's metrics. Each example metric is linked to either one or no indicators/metrics from AISI.

TCFD's example metrics mapping results - transportation group

TRANSPORTATION

TCFD EXAMPLE METRICS	No of AISI's indicators	COVERAGE LEVEL
Sales-weighted average fleet fuel economy, by region and weight/number of people transported	0	NONE
Revenues/savings from investments in low-carbon alternatives (e.g., R&D, equipment, products or services)	1	PARTIAL
Vehicle sales (historical, current and projected) by category (e.g., gas vehicles, diesel vehicles, battery electric vehicles, plug-in hybrid electric vehicles, alternative-powered vehicles (LPG, CNG, fuel cells, compressed air)	0	NONE
Energy Efficiency Design Index (EEDI) for new ships	0	NONE
Expenditures (OpEx) for R&D for low-carbon transportation equipment or transportation services	0	NONE
Total fuel consumed and percent renewable for road, airlines, marine, rail (?)	1	FULL
Road vehicles—Geographic breakdown of GHG emissions: emissions and/or emission intensity of products for key geographies against regulatory requirements/targets	0	NONE
Life cycle reporting of GHG emissions of Transportation products (air, ship, rail, truck, auto)	0	NONE
Investments (CapEx) in low-carbon transportation equipment or transportation services	1	PARTIAL

The above mapping table shows that only 3 out of 9 example metrics of TCFD for the transportation group are covered by AISI's metrics. Each example metric is linked to either one or no indicators/metrics from AISI.

TCFD's example metrics mapping results - materials & buildings group

MATERIALS & BUILDINGS		
TCFD EXAMPLE METRICS	**No of AISI's indicators**	**COVERAGE LEVEL**
Revenues/savings from investments in low-carbon alternatives (e.g., R&D, equipment, products or services)	1	PARTIAL
Expenditures (OpEx) for low-carbon alternatives (e.g., R&D, technology, products, or services)	0	NONE
Total energy consumed, broken down by source (e.g., purchased electricity and renewable sources)	1	PARTIAL
Total fuel consumed—percentage from coal, natural gas, oil, and renewable sources	1	PARTIAL
Total energy intensity—by tons of product, amount of sales, number of products depending on informational value	0	NONE
Building energy intensity (by occupants or square area)	0	NONE
Percent of fresh water withdrawn in regions with high or extremely high baseline water stress	1	PARTIAL
Building water intensity (by occupants or square area)	0	NONE
GHG emissions intensity from buildings (by occupants or square area) and from new construction and redevelopment	0	NONE

Area of buildings, plants or properties located in designated flood hazard areas	0	**NONE**
A breakdown of reserves and an indication of associated emissions factors to provide insight into potential future emissions	1	PARTIAL
For each property type, the percentage certified as sustainable	0	**NONE**
Investment (CapEx) in low-carbon alternatives (e.g., capital equipment or assets)	2	PARTIAL

The above mapping table shows that 6 out of 13 example metrics of TCFD for the Materials & Buildings group are covered by AISI's metrics.