2023-2024 Spring Term

Green transition from international and European perspective

Decarbonisation & Business

Lecture 3 | 12 April 2024

Reporting climate-related information: TCFD

Introduction to TCFD recommendations

G20 Finance Ministers and Central Bank Governors asked the Financial Stability Board (FSB) to review how the financial sector can take into account of climate-related issues. The FSB established the Task Force on Climate-related Financial Disclosures (TCFD) to develop recommendations that:

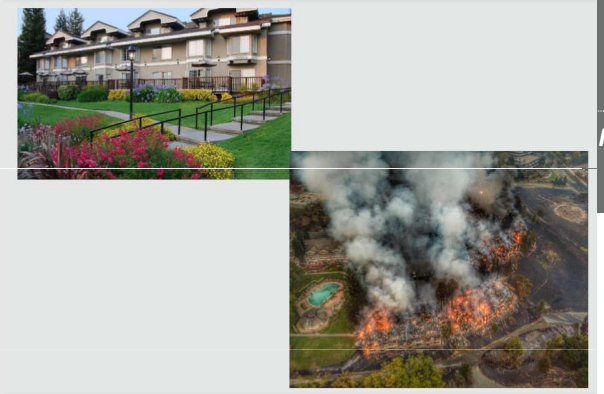
- could "promote more informed investment, credit, and insurance underwriting decisions", and
- in turn, "would enable stakeholders to understand better the concentrations of carbon-related assets in the financial sector and the financial system's exposures to climate-related risks."

The Task Force published recommendations (2017) to help address climate-related disclosure challenges faced by:

- Issuers who generally have an obligation under existing law to disclose material info, but lack a coherent framework to do so for climate info,
- Investors, lenders, and insurers who need decision-useful, climate-related info to make informed capital allocation and financial decisions

Focus on financial impact

Hilton Hotels – No Assessment or Mitigation



RISKS

Transition

Policy and Legal
- Carbon pricing and reporting obligations
- Mandates on and regulation of existing products and services
- Exposure to litigation

Technology
- Substitution of existing products and services with lower emissions options
- Unsuccessful investment in new technologies

Market
- Changing customer behavior
- Uncertainty in market signals
- Increased cost of raw materials

Reputation
- Shift in consumer preferences
- Increased stakeholder concern/negative feedback
- Stigmatization of sector

Physical
- Acute: Extreme weather events
- Chronic: Changing weather patterns and rising mean temperature and sea levels

OPPORTUNITIES

Resource Efficiency	– Use of more efficient modes of transport and production and distribution processes – Use of recycling – Move to more efficient buildings – Reduced water usage and consumption
Energy Source	– Use of lower-emission sources of energy – Use of supportive policy incentives – Use of new technologies – Participation in carbon market
Products & Services	– Development and/or expansion of low emission goods and services – Development of climate adaptation and insurance risk solutions – Development of new products or services through R&D and innovation
Markets	– Access to new markets – Use of public-sector incentives – Access to new assets and locations needing insurance coverage
Resilience	– Participation in renewable energy programs and adoption of energy-efficiency measures – Resource substitutes/diversification

Strategic Planning
Risk Management

Financial Impact

Revenues
Expenditures

Income Statement

Cash Flow Statement

Balance Sheet

Assets & Liabilities
Capital & Financing

Disclosure Recommendations

The Task Force developed four widely-adoptable recommendations on climate-related financial disclosures that are applicable to organizations across sectors and jurisdictions.

The recommendations are structured around four thematic areas that represent core elements of how organizations operate:

Governance
The organization's governance around climate-related risks and opportunities

Strategy
The actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning

Risk Management
The processes used by the organization to identify, assess, and manage climate-related risks

Metrics and Targets
The metrics and targets used to assess and manage relevant climate-related risks and opportunities

Disclosure recommendations

The four recommendations are supported by specific disclosures organizations should include in financial filings or other reports to provide decision-useful information to investors and others.

Governance

Disclose the organization's governance around climate-related risks and opportunities.

Recommended Disclosures

a) Describe the board's oversight of climate-related risks and opportunities.

b) Describe management's role in assessing and managing climate-related risks and opportunities.

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.

Recommended Disclosures

a) Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.

b) Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning.

c) Describe the resilience of the organization's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.

Risk Management

Disclose how the organization identifies, assesses, and manages climate-related risks.

Recommended Disclosures

a) Describe the organization's processes for identifying and assessing climate-related risks.

b) Describe the organization's processes for managing climate-related risks.

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

Metrics and Targets

Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.

Recommended Disclosures

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) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.

c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.

Key elements of disclosure recommendations

Principle of Materiality

- Materiality is a substantial likelihood that a reasonable investor would consider it important. The trigger areas could be legislation/regulation, international agreements, indirect consequences of regulations and businesses, and physical impacts.
- The disclosures related to the **Strategy and Metrics & Targets** are subject to an assessment of materiality.
- The disclosures related to the **Governance and Risk Management** are *not* subject to an assessment of materiality and should be provided because many investors want insight into the governance and risk management context in which organizations' financial and operating results are achieved.

Scenario Analysis

- The Task Force encourages forward-looking information through scenario analysis—a useful tool for considering and enhancing resiliency and flexibility of strategic plans.
- Many investors want to understand how **resilient organizations' strategies are to climate-related risks**.
- Recommended disclosure (c) under Strategy and the related guidance asks organizations to describe the resilience of their strategies, taking into consideration different climate-related scenarios, including **a 2°C or lower scenario**.

2°C Scenario

Provides a common reference point that is generally aligned with the objectives of the Paris Agreement.

Scenario Analysis Threshold

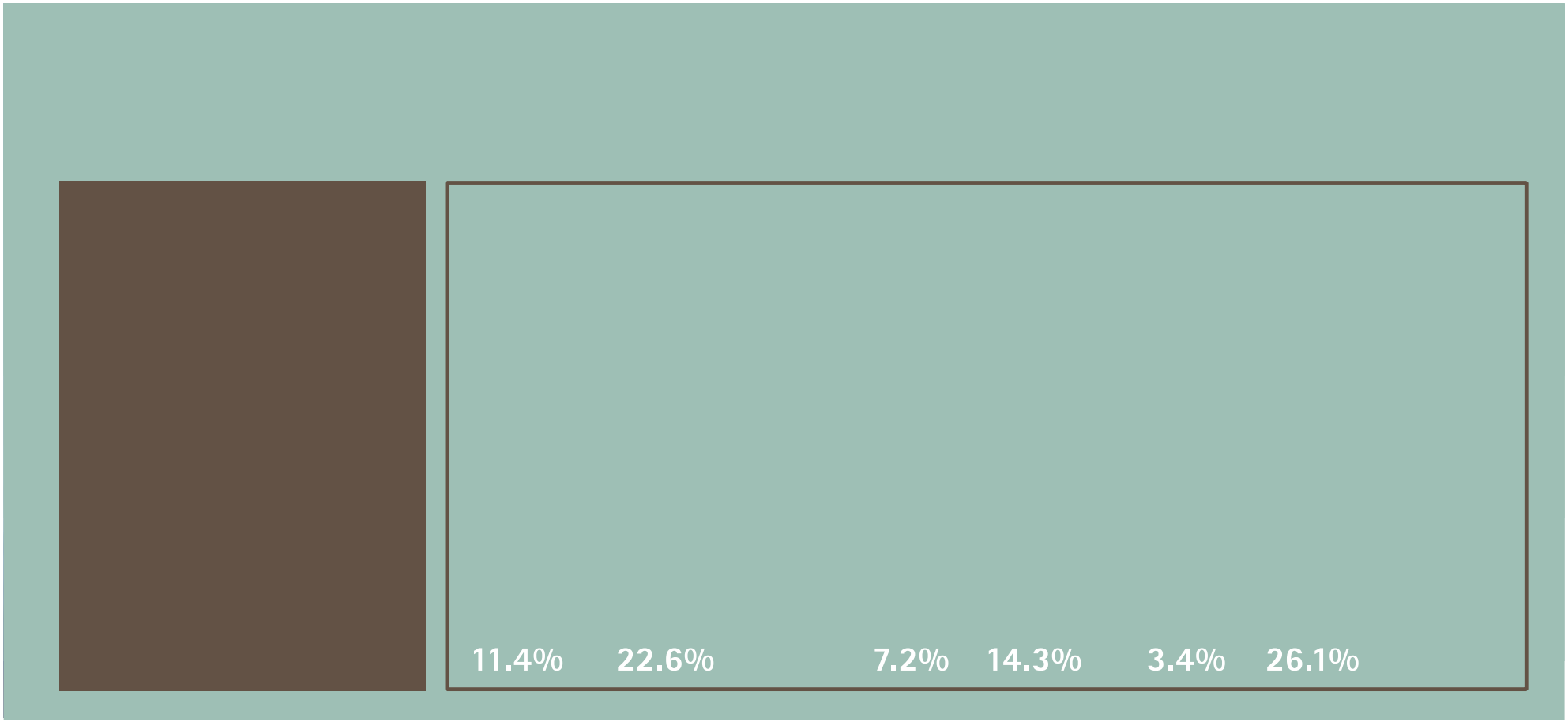
The Task Force established a threshold for organizations that should consider conducting more robust scenario analysis to assess the resilience of their strategies (those in the four non-financial groups with more than 1 billion USDeq in annual revenue).

CLIMATE SCENARIO REPORTS

- How did they balance voluntary reporting vs materiality considerations, given investor expectations?
- At what point do the results of a scenario analysis become material?
- How can a company talk about opportunities?
- What about physical risks?

CASE STUDY 2: TCFD DISCLOSURE FOR METAL MINING COMPANY

GHG emissions from metal mining



Copper and Molybdenum Mining Company

- One of the 10 leading molybdenum producers in the world (Southern Caucasus)
- EU is the main markets for company's products, molybdenum and copper
- Does not fall under EU CBAM or CSRD (yet!)
- Strategic partners: Government (partial owner) and EBRD – financier – requires climate risks assessment and Paris-alignment

IFRS S1 (former TCFD) / EU CSRD requirements

Governance
The organisation's governance around climate-related risks

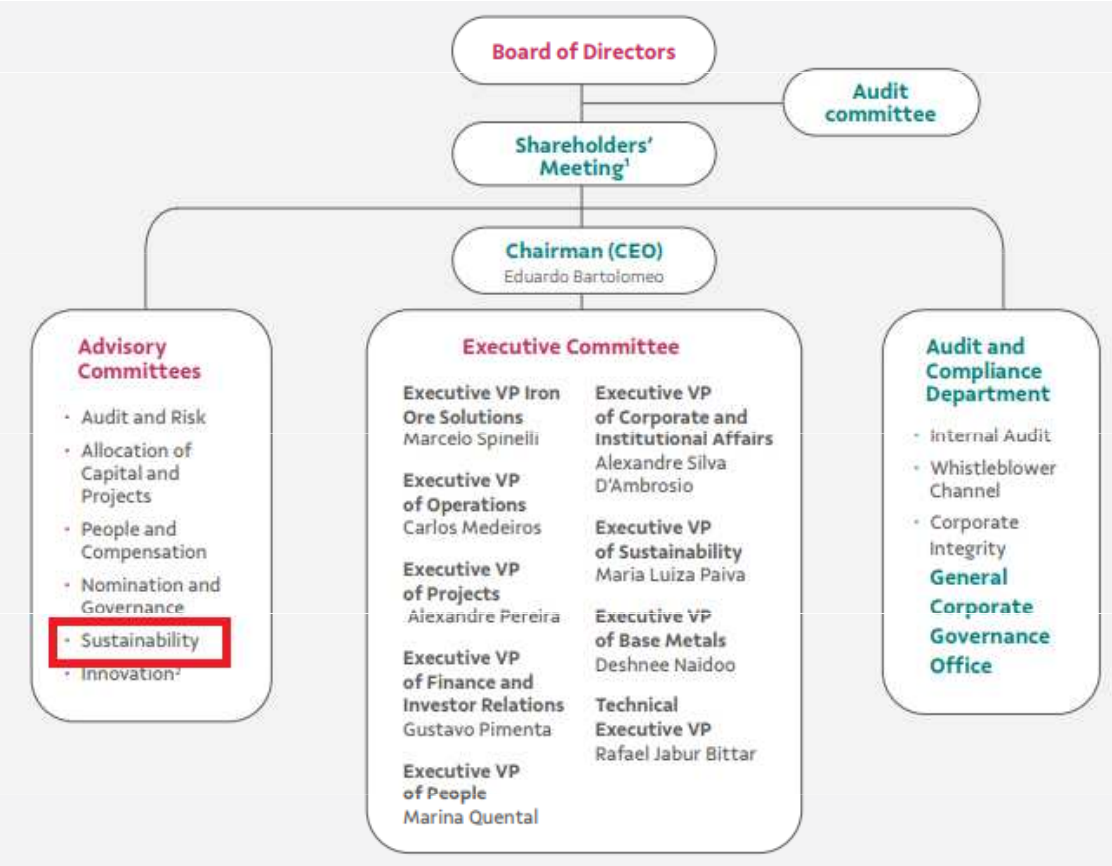
Strategy
The actual and potential impacts of climate-related risks and opportunities on the organisation's businesses, strategy, and financial planning

Risk management
The processes used by the organisation to identify, assess, and manage climate-related risks

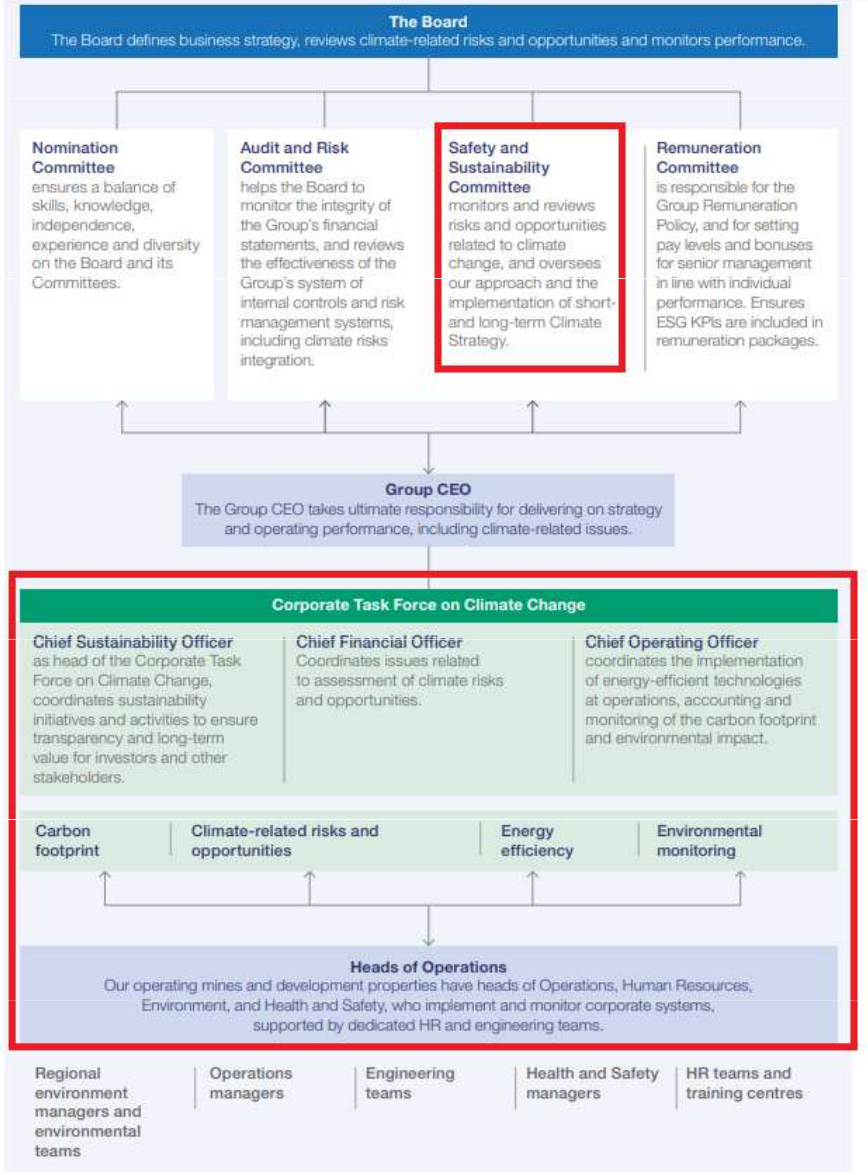
Metric and targets
The metrics and targets used to assess and manage relevant climate-related risks and opportunities

Governance

Example 1: VALE S.A.



Example 2: Polymetal



Assessment of risks and opportunities

TCFD recommends assessing climate-related issues and how they may affect an organisation's businesses, strategy, and financial planning.

Risks

- Transition risks
  - relate to changes in law and policies, technologies, the market, and reputation
- Physical risks
  - relate to changes in climate that affect operations

Opportunities

- Opportunities
  - climate change incentivizes the use of resources and energy in a more efficient way,
  - accessing new markets with old and/or new products, changes in the demand for products, etc.

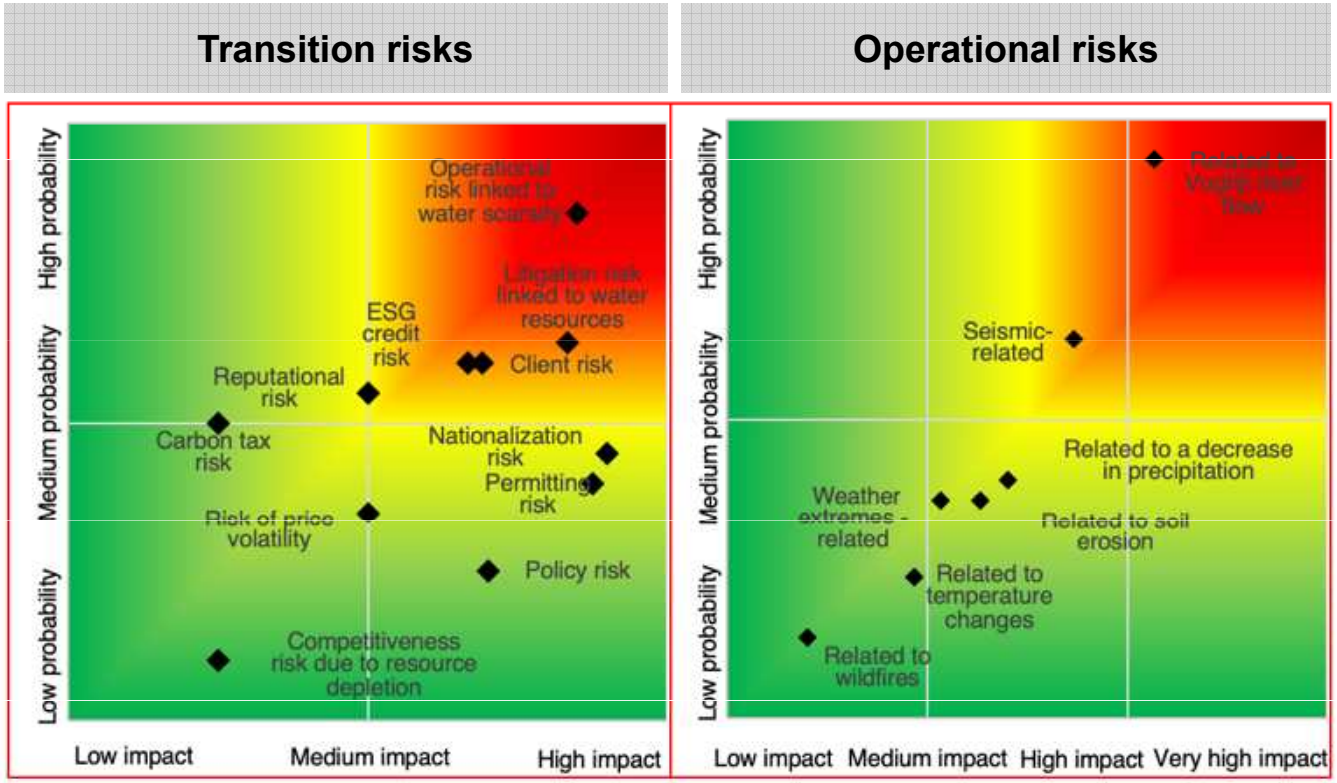
How the work was performed on assessing risks and opportunities for a mining company

- Benchmarking with risks and opportunities identified by selected peers (BHP Group, VALE S.A., Polymetal, KazMinerals)
- Analysis of studies and publications in the sector of copper and molybdenum mining
- Analysis of national regulatory requirements (existing and foreseen) of Armenia
- Conducting survey
- Conducting interviews

Risks

- Our report
  - Scored and positioned on the matrix 18 risks

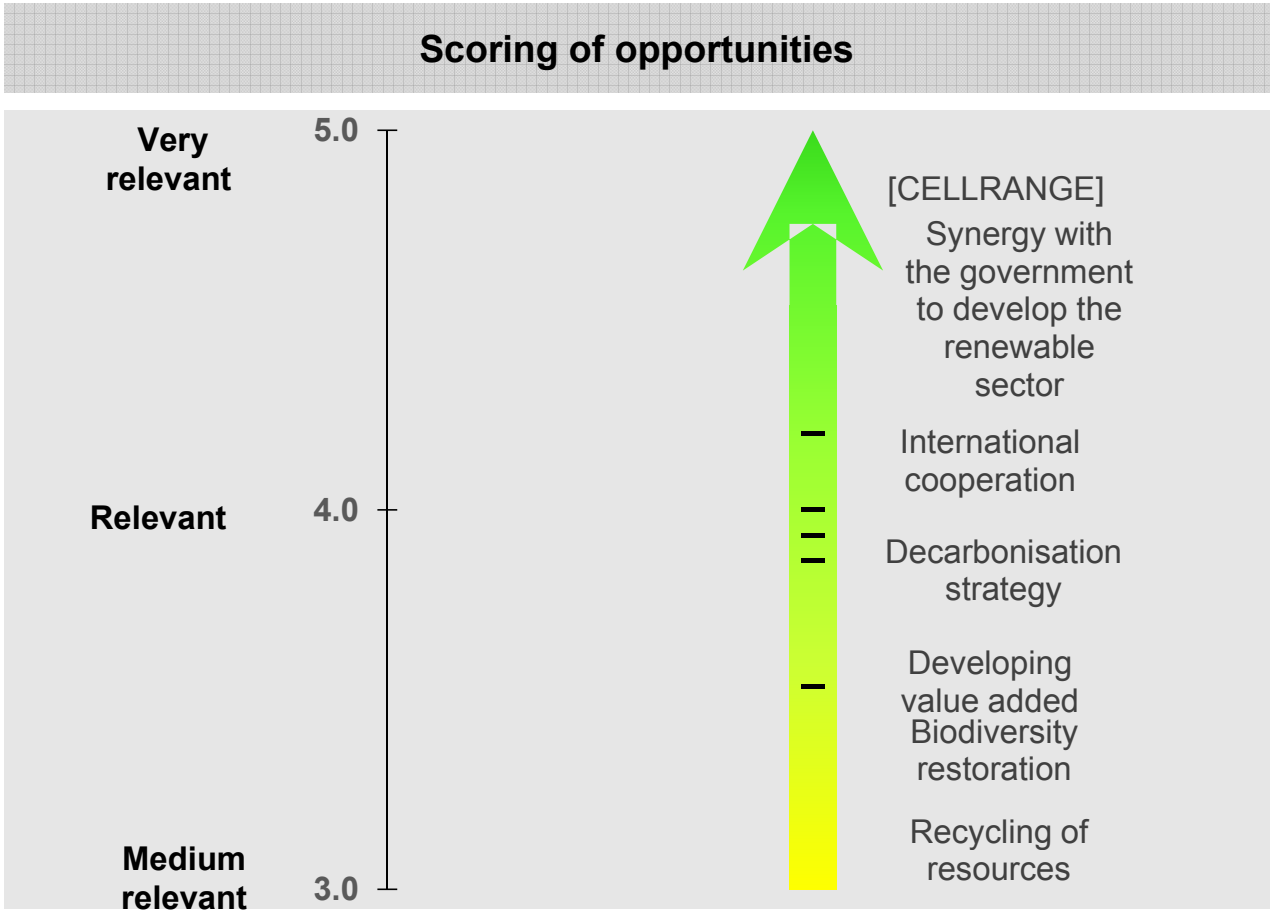
- Top 4 risks (top right square)
  - Scarcity of water resources
  - Litigation related to water
  - Client risk: decarbonization strategy of clients increases demand for products with lower carbon footprint
  - ESG credit risk



Notes:
Operational risk related to water scarcity - a reduced flow of i river poses a risk to production processes.
Litigation risk related to water - possible conflicts over water usage with local communities and agriculture.
Client risk - a risk of losing clients if not aligned with their decarbonization targets.
ESG risk - financing challenges due to stringent ESG requirements and a low ESG rating score.

Opportunities

- Our report
  - Scored 7 opportunities
- Top 4 opportunities
  - Cu and Mo demand expansion
  - Synergy with the government to develop renewable energy
  - Cost reduction linked to decarbonization activities
  - International cooperation i.a. with China



Risk management

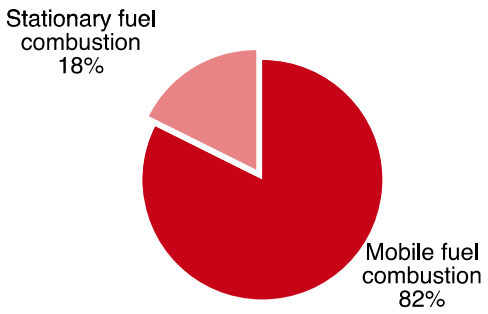
- TCFD recommends
  - describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management
- TCFD advocates
  - for an integrated approach to climate risk management urging businesses to embed climate risks into their broader risk management systems, ensuring long-term sustainability
- We recommend the following structure and process flow for the climate risk management ->

Metrics| Scope 1 and 2

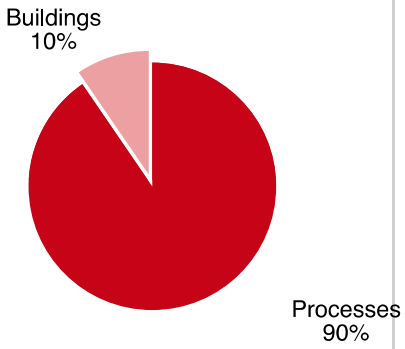
Scope 1: 25% of Scope 1 + 2 emissions

- Emissions associated with industrial transportation contribute the largest share to Scope 1.
- Emissions associated with industrial processes (mostly energy workshop) contribute the largest share to category “Stationary fuel combustion”

Scope 1 emissions by category



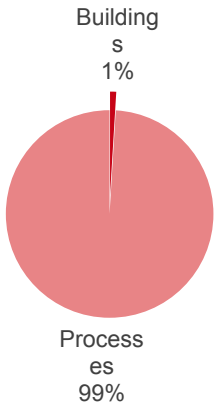
Emissions from stationary fuel combustion by sub-category



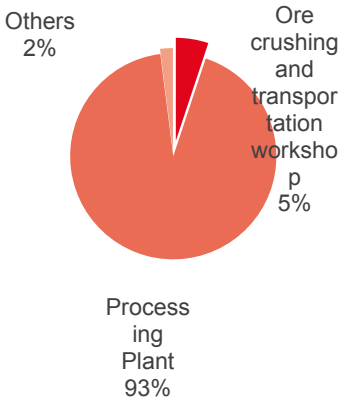
Scope 2: 75% of Scope 1+2 emissions

- Process-related emissions contribute the largest share to Scope 2.
- Emissions of the processing plant contribute the largest share to category process-related emissions.

Scope 2 emissions by category



Process emissions by sub-category

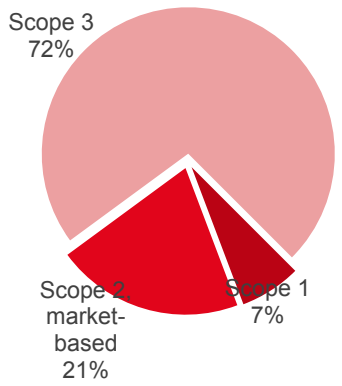


Metrics| Scope 3

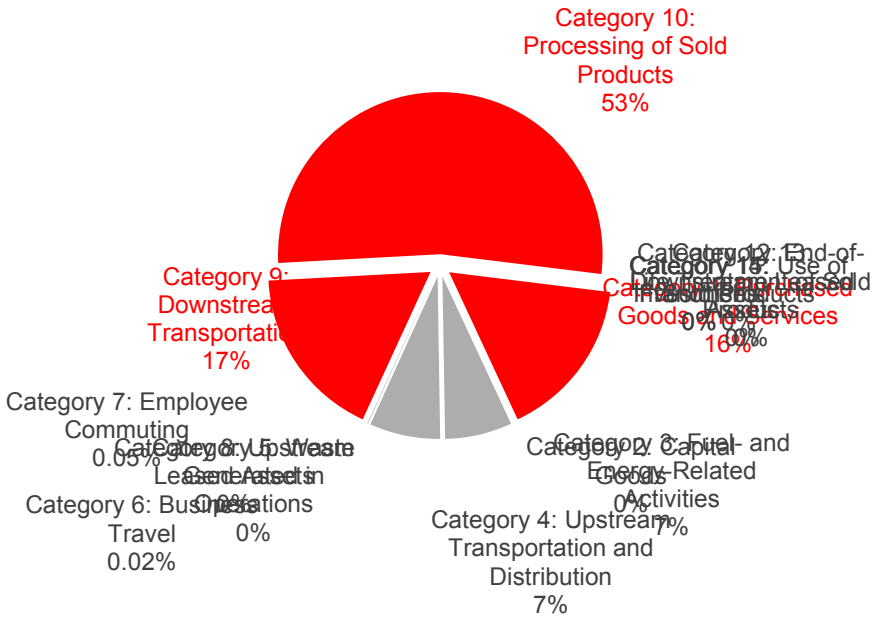
- > 70 % of Scope 1 + 2 +3 emissions

- Top 3 categories in terms of emissions:
  - energy consumption for processing of sold products,
  - transportation of sold products, and
  - emissions from the extraction, production and transportation of goods/ services purchased/ acquired by the company

GHG emissions by scope



Scope 3 emissions by category



Proposed decarbonisation targets

Scope 1 and 2 target

Between **30% and 35% by 2030, compared to 2022** (corresponds to an emission decrease of **3.8%/yr. to 4.5%/yr.**)

This level of ambitions is in line with and/ or ahead of the IEA Net Zero Scenario for the global industry, decarb benchmarks for the CU industry in ICA and IFC Scenarios, and the targets of its peers.

It also reflects the hard to abate nature of company's activities related to production and processing of non-ferrous metals.

Scope 3 target

Between **8% and 20% by 2030 compared to 2022** (corresponds to an emission decrease of **1.0%/yr. to 2.5%/yr.**)

This level of ambitions is in line with and/ or ahead of the targets for national economy, decarb benchmarks for the Cu industry in the ICA scenario, and its peers's targets.

Additional commitments for the 2030 target, consistent with the SBTi guidelines may include:

Achieve 30% of EVs in passenger vehicles (Scope 1);
Achieve 30% renewable electricity consumption (Scope 2); and
Ensure 100% of strategic value chain partners have science-based decarb targets (Scope 3).

Decarbonisation levers | Scope 1 & 2

Three general decarbonisation levers are proposed (Scope 1 & 2):

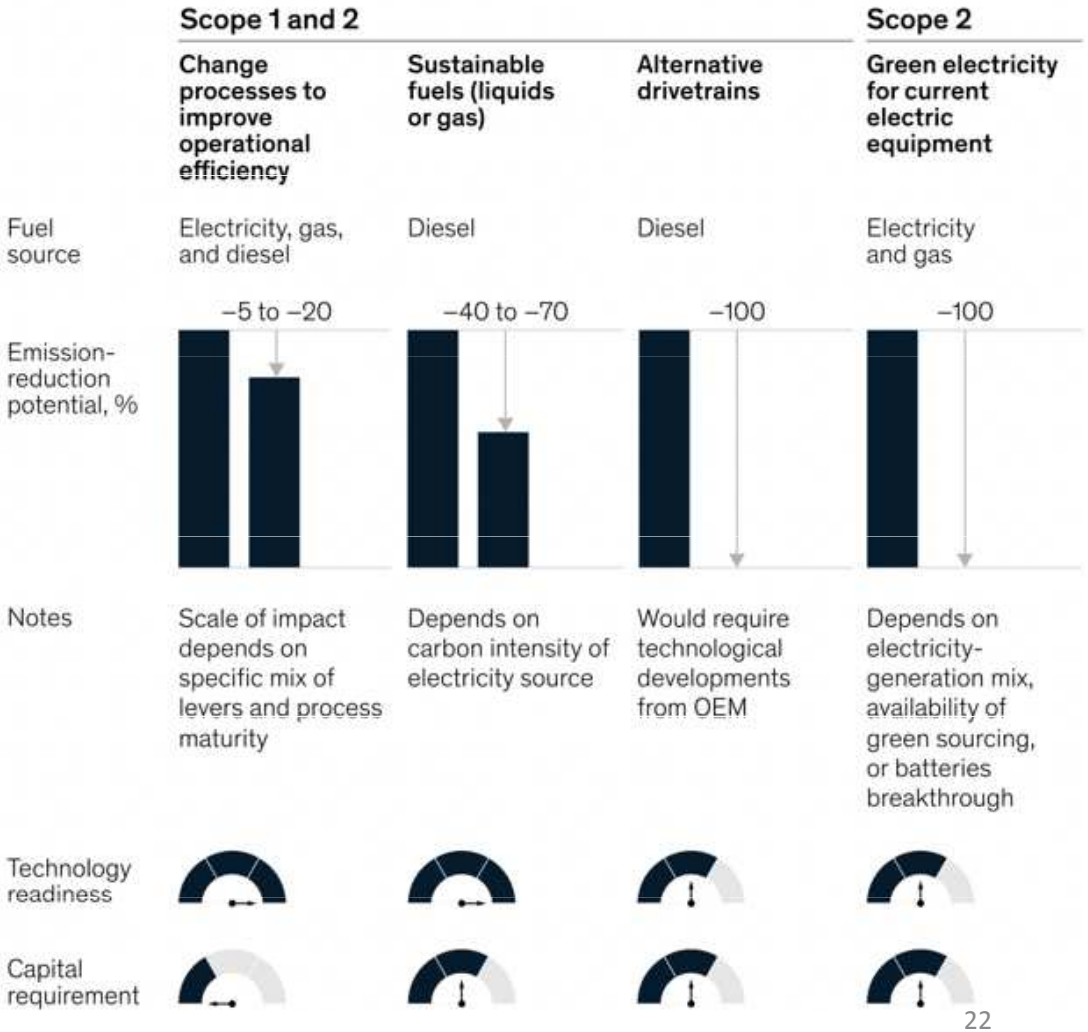
- ✓ energy and material efficiency,
- ✓ switch to renewables/ intensified electrification,
- ✓ decarbonisation of transport.

Breakdown of these levers and their technoeconomic assessment follows:

Low-carbon technology	Technology readiness	Cost competitive	Available at Scale	Emissions abatement potential*	Notes / examples
Efficient Equipment			Now	5-10%	Best-in-class motors, variable speed drives
Process Optimization			<5 years	10-20%	Mine-to-mill, high intensity selective blasting, coarse ore flotation & ore sorting
Digitization & Automation			<5 years	5-10%	Haul truck automation to reduce fuel use
Renewable Energy			Now	70-100%	Onsite RE hybridized with diesel can provide 70% emission reduction
Energy Storage			<5 years	100%	Enables complete RE penetration. Mines have unique storage options (compressed /liquid air)
Sustainable Biofuels			Now	30-70%	Even without blending ~30% of emissions remain, typical 20-30% premium
Green Hydrogen			5-10 years	100%	Used in large haul truck (fuel cell electric vehicles) or for high temperature heat. Already cost competitive with diesel in some locations but not available at scale
Battery Electric Vehicles			Underground: Now Open Pit: 5-10 years	100%	BEVs already deployed in underground mines to eliminate emissions. Larger sizes for open pit applications in development
Conveyors & Trolley Assist			Now	~30%	Mature, cost competitive haulage electrification. Cannot replace all trucks at most mines

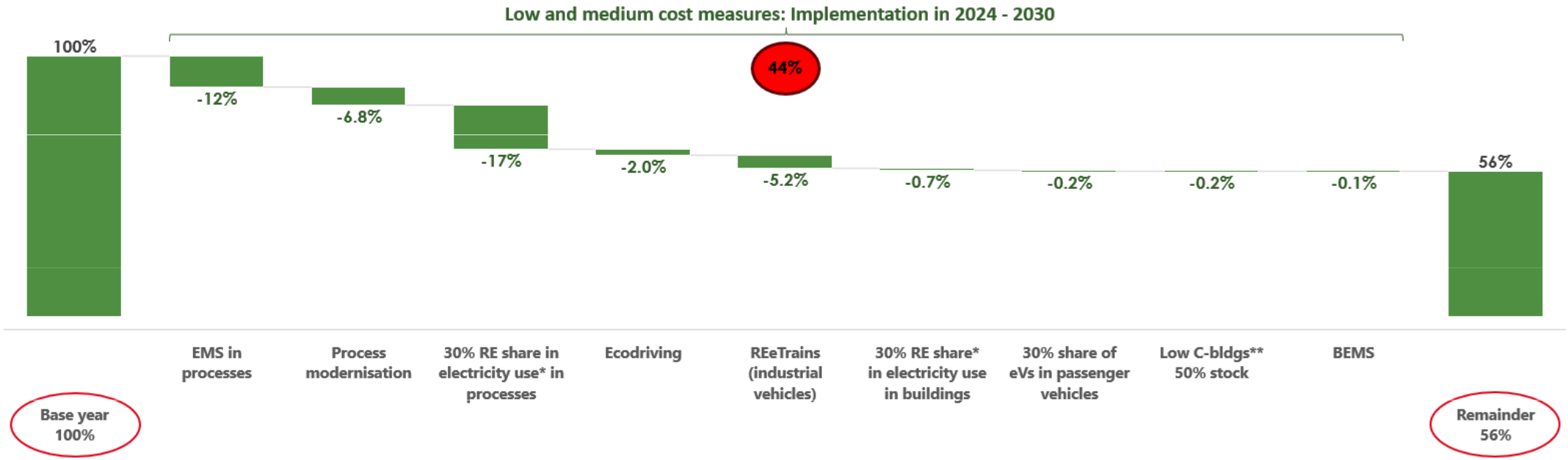
Source: IFC 2023. Net Zero Roadmap for Copper and Nickel

Decarbonisation levers | Scope 1 & 2



Source: McKinsey & Company: 2021, Creating the Zero Carbon Mine

Decarbonization roadmap | 2024 - 2030 | Scope 1 & 2



Notes:
* Renewable electricity refers to either own renewable energy production with energy storage or the purchase of renewable electricity from external suppliers.
** Replacement or retrofits of existing buildings with/to very low energy- or carbon levels, integrating such concepts and options as nZEBs, deep retrofits, solar water heating, and others.

EU Corporate Sustainability Reporting Directive (CSRD)

CSRD – Background information

- CSRD amends Directive 2013/34 (Accounting Directive "AD"), Directive 2004/109/EC (Transparency Directive "TD"), Directive 2006/43/EU (Audit Directive "AuD"), and Regulation (EU) No 537/2014 (Audit Regulation)
- CSRD revises and strengthens sustainability reporting requirements for companies introduced by Directive 2014/95 (**Non-Financial Reporting Directive "NFRD"**) into the Accounting Directive
- Key element of the EU Green Deal
- Objective: to put Sustainability Reporting in equal footing with Financial Reporting
- Publication in OJ in December 2022 (Directive 2022/2464)
- Transposition Deadline: 6 July 2024

CSRD – Key elements

Extension of NFRD scope of application

Strenghtening of NFRD reporting requirements

European Sustainability Reporting Standards (ESRS)

- Developed by EFRAG and adopted by COM as delegated acts

Digitalisation of sustainability reporting

- XHTML format (+ marking-up of the information once digital taxonomy is adopted)

Assurance of sustainability reporting

- limited assurance now, reasonable assurance at later stage

Scope & Schedule

2023:
The CSRD entered into force.

From 2024
All large companies already covered by the NFRD that meet at least two of the following three requirements:

- 500 or more employees
- 40 M EUR in net turnover
- 20 M EUR in assets

From 2025
All large companies that meet at least two of the following three requirements:

- 250 or more employees
- 40 M EUR in net turnover
- 20 M EUR in assets

From 2026
Small and medium sized-enterprises (SMEs) that meet at least two of the following requirements:

- More than 10 employees
- More than 700 000 EUR net revenue
- More than 350 000 EUR in assets

From 2028
All non-EU-country companies, with net turnover above 150 M EUR in the EU and if they have at least one subsidiary or branch in the EU.

European Sustainability Reporting Standards "ESRS"

"ESRS"
(Art. 29b AD)

- ❑ Cross-cutting standards and standards for all sustainability topics
- ❑ Sector-specific standards

Adoption by
COM 30 June 2023

"ESRS
for SMEs"
(Art. 29c AD)

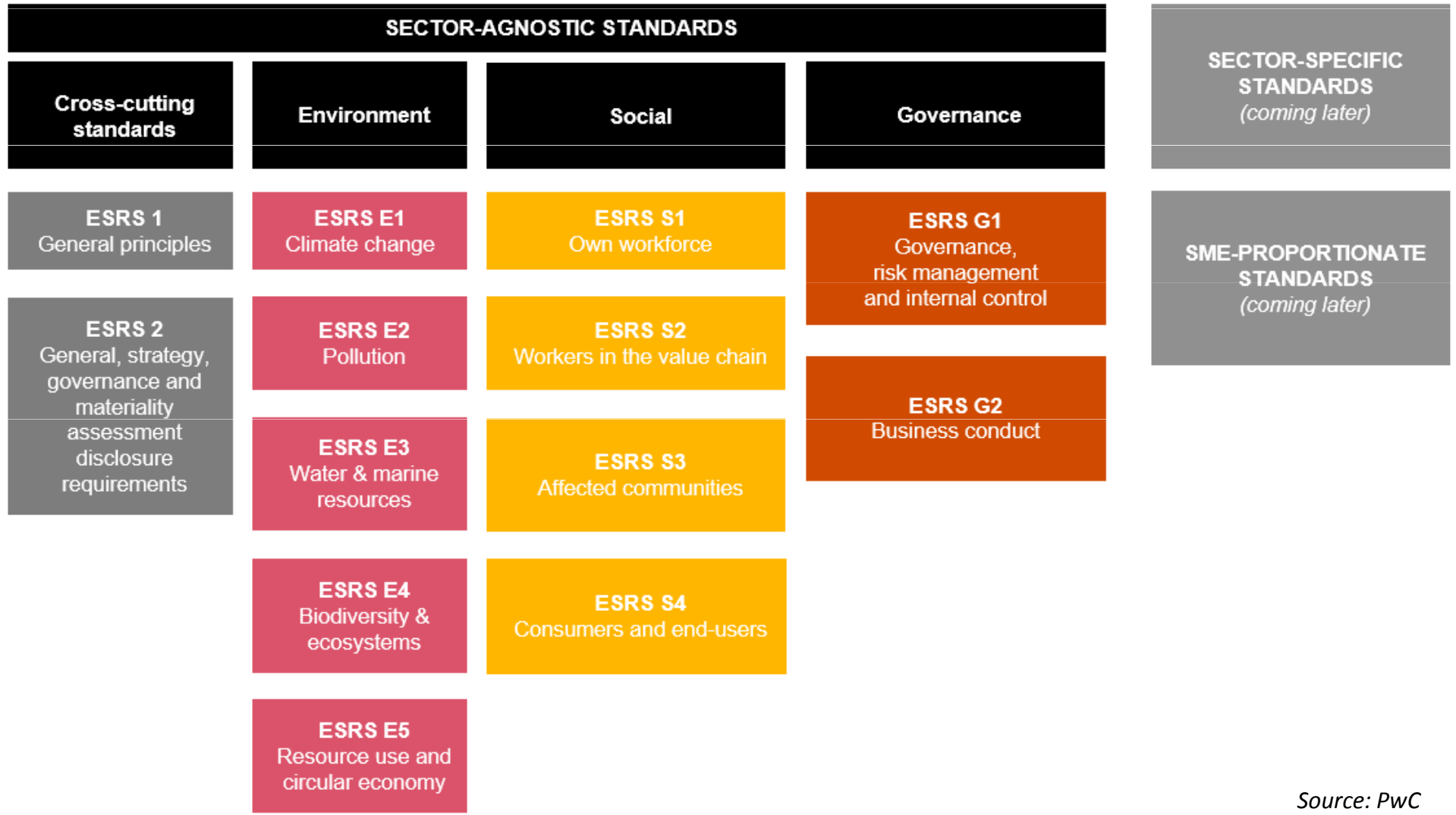
- ❑ Standards for listed SMEs

"ESRS
for certain
non-EU
companies"
(Art. 40b AD)

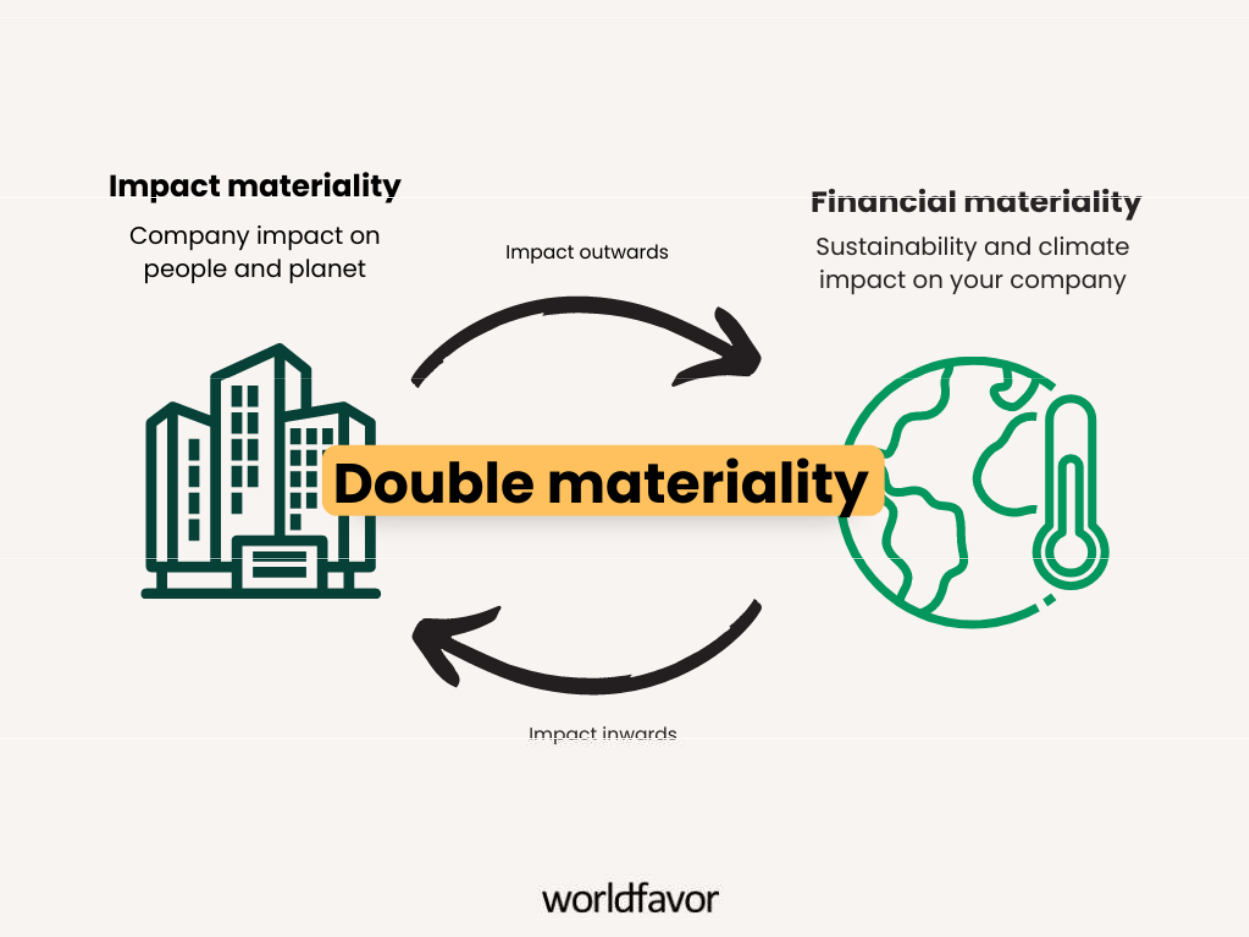
- ❑ Standards for non-EU companies exceeding EU turnover threshold

Adoption by COM
30 June 2024

CSRD Reporting Standards



Source: PwC


Impact materiality
Company impact on people and planet
Impact outwards
Financial materiality
Sustainability and climate impact on your company
Double materiality
Impact inwards
worldfavor

ESRS E1 Climate change

EFRAG

To enable users of sustainability statements to understand:

a) **how the undertaking affects climate change**, in terms of material positive and negative actual and potential impacts

b) the **undertaking's past, current and future mitigation efforts** in line with the Paris Agreement and limiting global warming to 1.5°C

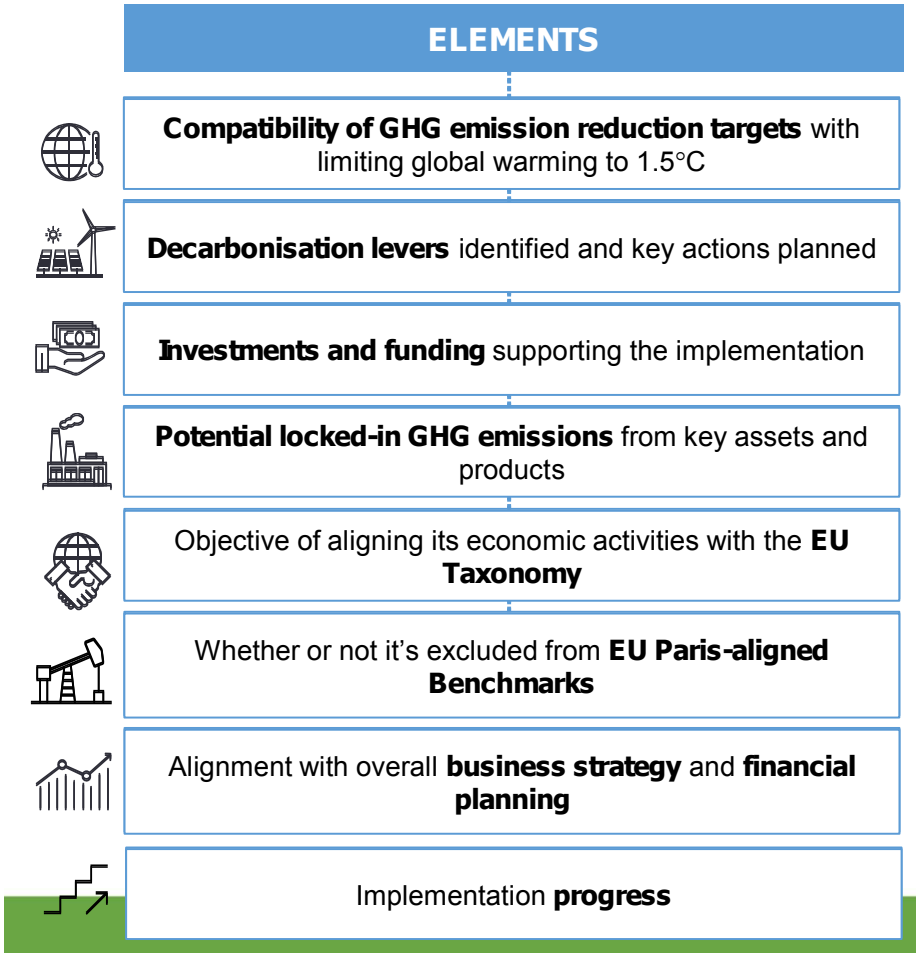
c) **plans and capacity of the undertaking to adapt its strategy and business model**(s) in line with the transition to a sustainable economy and to contribute to limiting global warming to 1.5°C

d) any **other actions taken** by the undertaking, and the **result** of such actions to prevent, mitigate or remediate actual or potential negative impacts

e) nature, type and extent of the undertaking's **material risks and opportunities** arising from the undertaking's impacts and dependencies on climate change, and how the undertaking manages them

f) **financial effects** on the undertaking over the short-, medium- and long-term time horizons of risks and opportunities arising from the undertaking's impacts and dependencies on climate change

DR E1-1 – TRANSITION PLAN FOR CLIMATE CHANGE MITIGATION



"...the undertaking is expected to provide a high-level explanation of how it will adjust its strategy and business model to ensure compatibility with the transition to a sustainable economy and with the limiting of global warming to 1.5°C in line with the Paris Agreement (...) and the objective of achieving climate neutrality by 2050 with no or limited overshoot (...), and where applicable, its exposure to coal, and oil and gas- related activities." (AR 1)

IF the undertaking does not have a transition plan in place, it shall indicate whether and, if so, when it will adopt a transition plan.

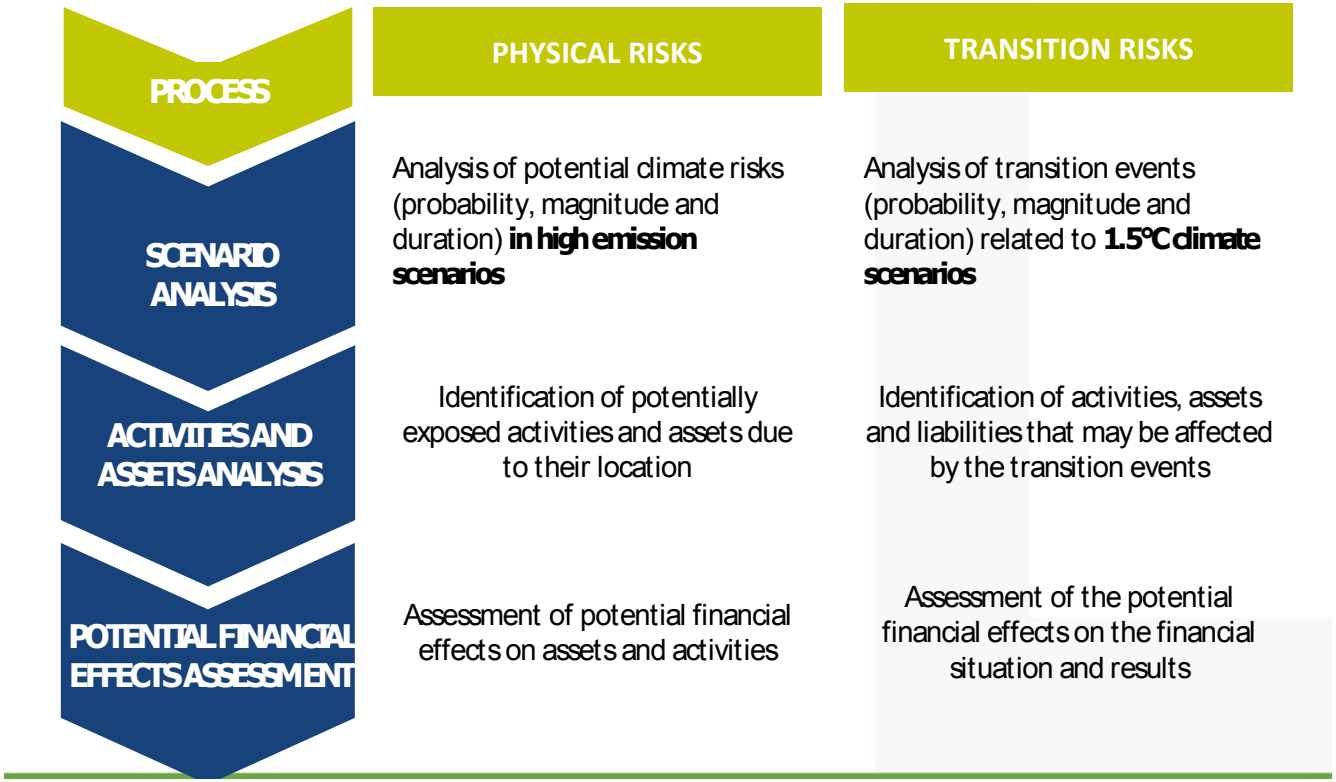
Impact, Risk and Opportunities (IRO) Management

DR RELATED TO ESRS 2 IRO-1

Describe the process to identify and assess climate-related IRO. This description shall include:

- Impacts on climate change, in particular, the undertaking's GHG emissions (as required by DR ESRS E1-6);
- Climate-related physical risks in own operations and along the value chain, in particular, climate-related hazards and an assessment of how its assets and business may be exposed to climate-related hazards (i.e. gross physical risks).
- Climate-related transition risks and opportunities in own operations and along the value chain, in particular, :
  - The identification of climate-related transition events, considering at least a climate scenario in line with limiting global warming to 1.5°C; and
  - The assessment of how its assets and business activities may be exposed to these climate-related transition events, creating gross transition risks.

Disclosure is required of how climate-related scenario analysis was used to inform the above disclosures.



IRO Management (cont)

E1-2 POLICIES RELATED TO CLIMATE CHANGE MITIGATION AND ADAPTATION

Disclose the policies adopted to manage material IRO related to climate change mitigation and adaptation, including summarised information on the policies implemented to manage them.

The DR should enable an understanding of the extent to which the undertaking has policies that address the identification, assessment, management and/or remediation of its material climate change mitigation and adaptation IRO.

The undertaking shall indicate whether and how its policies address the following areas:

- Climate change mitigation;
- Climate change adaptation;
- Energy efficiency;
- Renewable energy deployment; and
- Other.

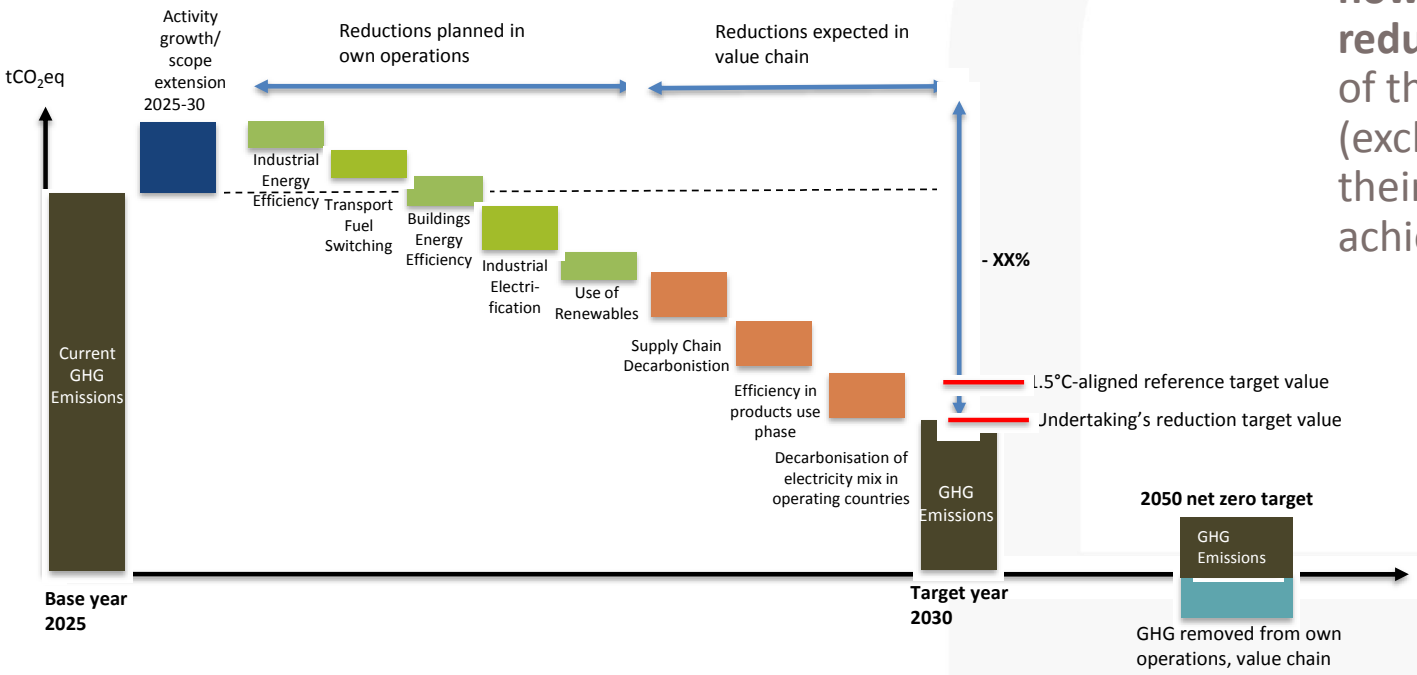
E1-3 ACTIONS AND RESOURCES IN RELATION TO CLIMATE CHANGE POLICIES

Disclose climate change mitigation and adaptation actions and the resources allocated for their implementation in order to provide an understanding of the key actions taken and planned to achieve climate-related policy objectives and targets.

Disclosure should:

- Follow the principles in ESRS 2 DC-A ***Actions and Resources in Relation to Material Sustainability Matters***;
- Present the climate change mitigation actions by decarbonisation lever including the nature-based solutions;
- When describing the outcome of the actions for climate change mitigation, include the achieved and expected GHG emission reductions; and
- Relate significant monetary amounts of CapEx and OpEx required to implement the actions to:
  - The relevant line items or notes in the financial statements;
  - The key performance indicators required under article 8 of Taxonomy Regulation (EU) 2020/852; and
  - If applicable, the CapEx plan required by Commission delegated regulation (EU) 2021/2178.

DR E1-4 – TARGETS RELATED TO CLIMATE CHANGE MITIGATION AND ADAPTATION



- Undertakings shall disclose **whether and how they have set GHG emission reduction targets**. If any, the description of the expected decarbonisation levers (excl. removals and carbon credits) and their overall quantitative contributions to achieve the targets.

METRICS AND TARGETS: ENERGY

Total energy consumption from non-renewable sources for high climate impact sectors :

- Fuel consumption from coal and coal products;
- Fuel consumption from crude oil and petroleum products;
- Fuel consumption from natural gas;
- Fuel consumption from other non-renewable sources;
- Consumption from nuclear products; and
- Consumption of purchased or acquired electricity, heat, steam, and cooling from non-renewable sources.

Total energy consumption from renewable sources disaggregated by:

- Fuel consumption for renewable sources (including biomass, biogas, non-fossil fuel waste,
- hydrogen from renewable sources, etc.);
- Consumption of purchased or acquired electricity, heat, steam, and cooling from renewable sources; and
- Consumption of self-generated non-fuel renewable energy.

HIGH CLIMATE IMPACT SECTORS

High climate impact sectors are defined in Regulation 2019/2088 as NACE Sections A to H and L. They are summarised as:

- Agriculture, forestry and fishing;
- Mining and quarrying;
- Manufacturing;
- Electricity, gas, steam and air conditioning supply;
- Water supply, sewerage, waste management and remediation activities;
- Construction;
- Wholesome and retail trade, repair of motor vehicles and motorcycles;
- Transportation and storage; and
- Real estate activities.

METRICS AND TARGETS: GHG EMISSIONS

Reporting table

	Evolution				Objectives and target years		
	Reference year	N-1	N	% N / N-1	2030	2050	Objective / reference year
EMISSIONS OF GHG SCOPE 1							
Gross GHG emission Scope 1 (tCO_2eq)	tCO_2eq	tCO_2eq	tCO_2eq	%	tCO_2eq	tCO_2eq	%
Share of Scope 1 GHG emissions covered by regulated emissions trading schemes (%)	tCO_2eq	tCO_2eq	tCO_2eq	%	tCO_2eq	tCO_2eq	%
SCOPE 2 GHG EMISSIONS							
Gross GHG emission Scope 2 in location-based (tCO_2eq)	tCO_2eq	tCO_2eq	tCO_2eq	%	tCO_2eq	tCO_2eq	
Gross GHG emission Scope 2 in market-based (tCO_2eq)	tCO_2eq	tCO_2eq	tCO_2eq	%	tCO_2eq	tCO_2eq	

GHG INTENSITY BASED ON NET REVENUE

Disclose its GHG emissions intensity =

$$\frac{\text{Total GHG emissions } (CO_2eq)}{\text{Net revenue (monetary unit)}}$$

The undertaking shall reconcile the net revenue in the calculation to the relevant line item or notes in the financial statements.

METRICS AND TARGETS (CONT)

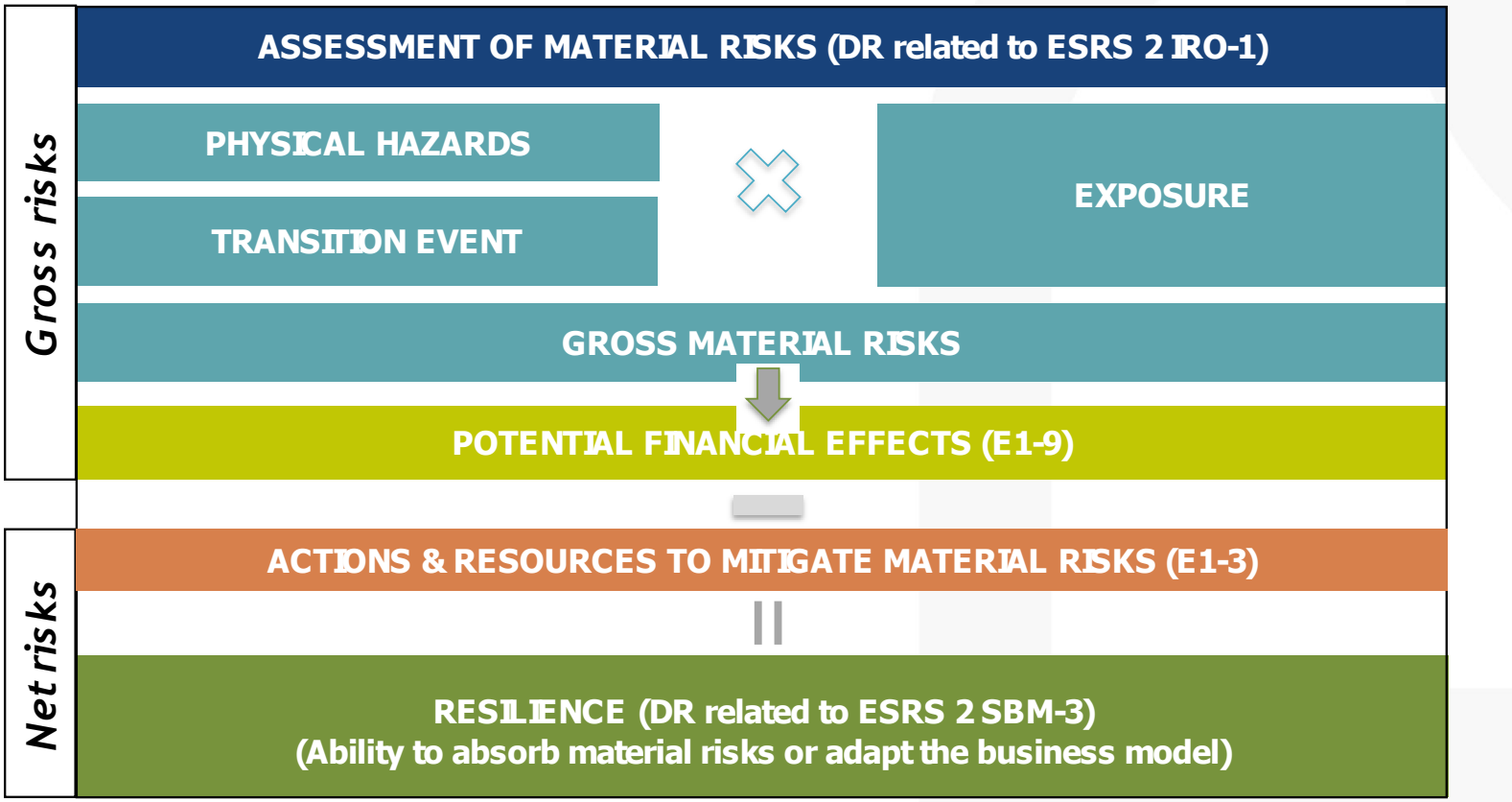
- GHG removals and storage from own operations and upstream and downstream value chain it may have developed in metric tonnes of CO2eq; and
- The amount of GHG emission reductions or removals from climate change mitigation projects outside its value chain it has financed through any purchase of carbon credits.

Disclose whether internal carbon pricing schemes are applied and, if so, how these support its decision making and incentivise the implementation of climate-related policies and targets, including:

- The type of internal carbon pricing scheme, for example, the shadow prices applied for CapEX or research and development (R&D) investment decision making, internal carbon fees or internal carbon funds;
- The specific scope of application of the carbon pricing schemes (activities, geographies, entities, etc.);
- The carbon prices applied according to the type of scheme and critical assumptions made to determine the prices, including the source of the applied carbon prices and why they are deemed relevant; and
- The current year approximate gross GHG emission volumes by Scopes 1, 2 and 3 in metric tonnes of CO2eq covered by these schemes, as well as their share of the undertaking's overall GHG emissions for each respective Scope.

METRICS AND TARGETS: E1-9 POTENTIAL FINANCIAL EFFECTS FROM MATERIAL PHYSICAL AND TRANSITION RISKS AND POTENTIAL CLIMATE-RELATED OPPORTUNITIES

- Potential financial effects from material physical risks;
- Potential financial effects from material transition risks; and
- Potential to pursue material climate-related opportunities.



Financial impact assessment

EFRAG

POTENTIAL FINANCIAL EFFECTS FROM MATERIAL PHYSICAL RISKS	POTENTIAL FINANCIAL EFFECTS FROM MATERIAL TRANSITION RISKS	POTENTIAL TO PURSUE MATERIAL CLIMATE-RELATED OPPORTUNITIES
Disclosure of: ▸ The monetary amount and proportion (percentage) of assets at material physical risk over the short-, medium- and long-term time horizons; with the monetary amounts of these assets disaggregated by acute and chronic physical risk; ▸ The proportion of assets at material physical risk addressed by the climate change adaptation actions; ▸ The location of significant assets at material physical risk; and ▸ The monetary amount and proportion (percentage) of net revenue from its business activities at material physical risk over the short-, medium- and long-term time horizons.	Disclosure of: ▸ The monetary amount and proportion (percentage) of assets at material transition risk over the short-, medium- and long-term time horizons; ▸ The proportion of assets at material transition risk addressed by the climate change mitigation actions; ▸ A breakdown of the carrying value of its real estate assets by energy-efficiency classes; ▸ Liabilities that may have to be recognised in financial statements over the short-, medium- and long-term time horizons; and ▸ The monetary amount and proportion (percentage) of net revenue from its business activities at material transition risk over the short-, medium- and long-term time horizons including, where relevant, the net revenue from the undertaking's customers operating in coal, oil and gas-related activities.	Disclosure of: ▸ Its expected cost savings from climate change mitigation and adaptation actions; and ▸ The potential market size or expected changes to net revenue from low-carbon products and services or adaptation solutions to which the undertaking has or may have access. Quantification of the financial effects is not required if such a disclosure does not meet the qualitative characteristics of useful information in [Draft] ESRS 1 Appendix C ***Qualitative Characteristics of Information***.

RECONCILIATION TO LINE ITEMS OR NOTES IN FINANCIAL STATEMENTS	
Reconcile to the relevant line items or notes the significant amounts of the assets and net revenue at material physical risk.	Reconcile to the relevant line items or notes the significant amounts of the assets, liabilities, and net revenue at material transition risk.

2020: SASB and IR frameworks merge into one Value Reporting Foundation, consolidating the standards

2000: CDP is established to leverage investor pressure to improve corporate disclosures

GREENHOUSE GAS PROTOCOL

PRI Principles for Responsible Investment

PRI and GHG remain distinct from the new standards

IR INTEGRATED REPORTING

SASB

CDP

2007: CDP establishes CDSB at the 2007 World Economic Forum

VALUE REPORTING FOUNDATION

CDSB Climate Disclosure Standards Board

TCFD TASK FORCE ON CLIMATE-RELATED FINANCIAL DISCLOSURES

2015: Established by the Financial Stability Board; provides a crucial basis for the ISSB standards

2021: The ISSB is formed to create one unified set of IFRS Sustainability standards

ISSB

GRI

1997: Most widely-used sustainability standard, which informed IFRS S1 and S2 and is indicated as a complementary source

IFRS Sustainability

2023: IFRS S1 and S2 are published

Source: BloombergNEF

Overview of IFRS sustainability standards

The International Sustainability Standards Board (ISSB) issued two IFRS Sustainability Disclosure Standards in June 2023

The first two ISSB Standards

IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information sets out the general requirements for a company to disclose info about its sustainability-related risks and opportunities that is useful to investors in making decisions relating to providing resources to the company. The requirements in IFRS S1 also integrate the TCFD recommendations.

IFRS S2 Climate-related Disclosures sets out the requirements for a company to disclose info about its climate-related risks/opportunities, while building on the requirements described in IFRS S1. IFRS S2 integrates the TCFD recommendations and requires the disclosure of info about both cross-industry and industry-specific climate-related risks and opportunities. IFRS S2 is broadly consistent with the TCFD recommendations, but it requires more detailed info.

- IFRS S1 and IFRS S2 are effective for annual reporting beginning on 1 January 2024. Companies are required to apply the two Standards together to assert compliance with IFRS Sustainability Disclosure Standards.

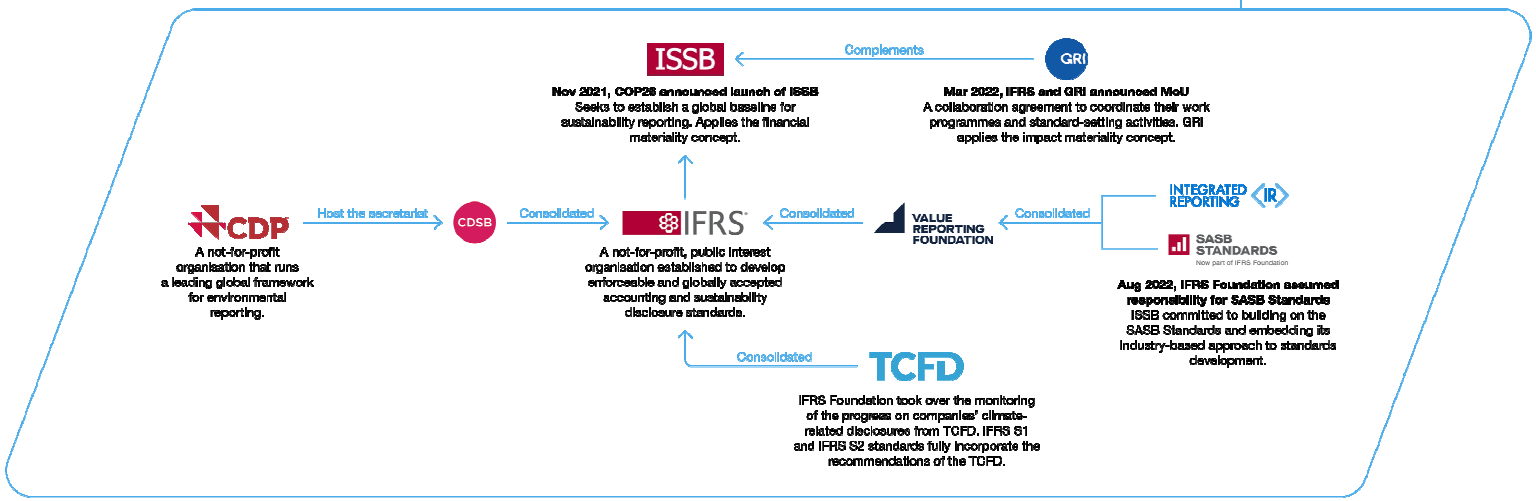
IFRS

IFRS S2

- A company applying IFRS S1 is required to apply IFRS S2 to identify and disclose material information about its climate-related risks and opportunities.

- IFRS S2 requires a company to disclose information about its governance, strategy and risk management, as well as metrics and targets, in relation to its climate-related risks and opportunities.

Pathway to ESG disclosure going mainstream



Source: IPC, 2023

Key take-aways

- Yesterday, we thought that the climate change challenge is the issue of the future. Today, the future has come, and the corporate world must respond to the challenge.

- Should you need to understand climate risks and opportunities of corporations, including the financial industry firms, now you know where to search for their climate-related information

- To read analyze the disclosure report, it is useful to rely on the respective standards, recommendations and guidelines