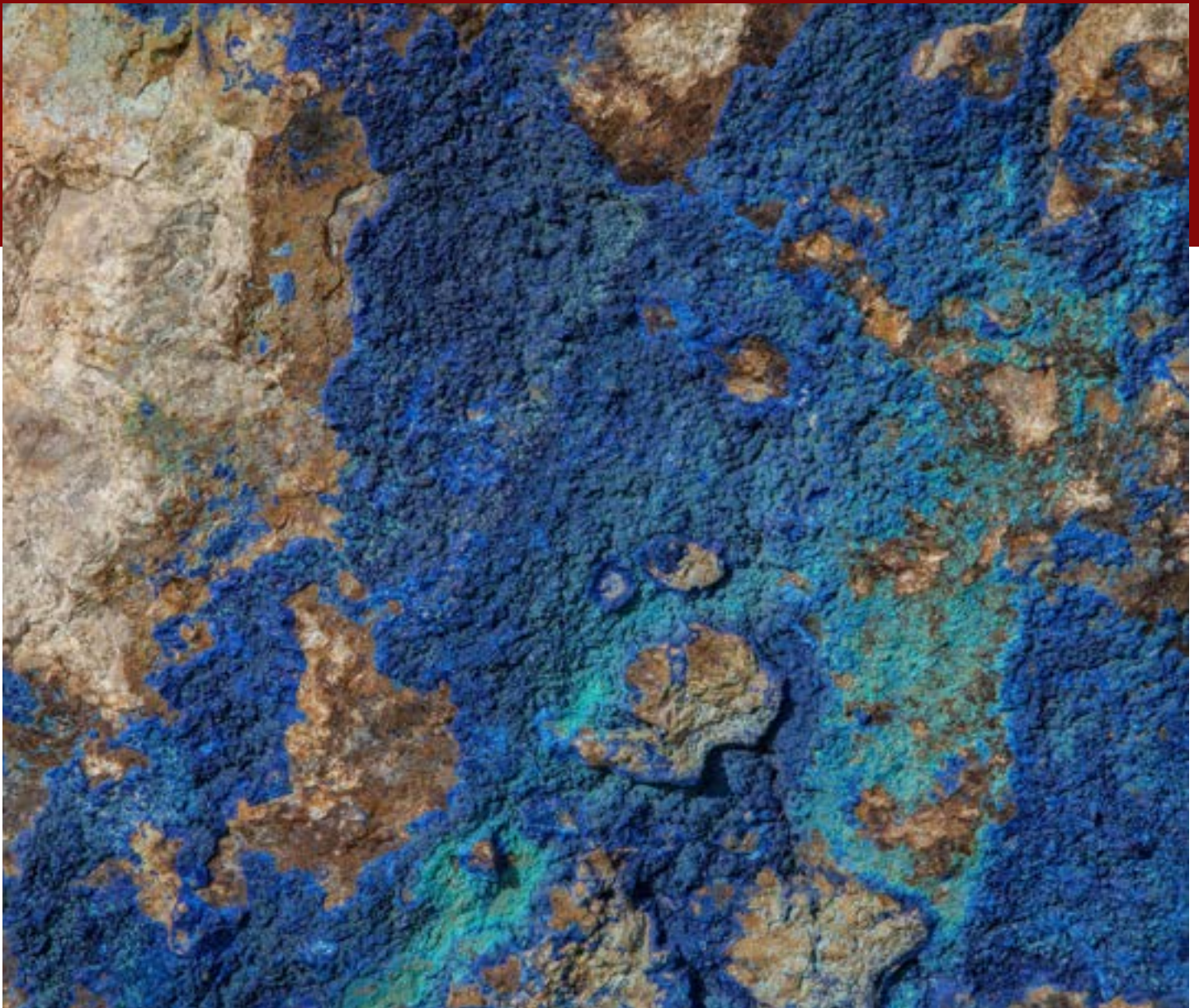


TPT Transition Plan
Taskforce

Metals & Mining Sector Guidance

April 2024



Acknowledgements

The drafting of this guidance was led by the TPT Metals & Mining Working Group, with oversight from the Sector Guidance Co-Chairs and input from the wider TPT Delivery Group, Steering Group, and the TPT working groups on nature, adaptation, and just transition, as well as technical and drafting support from Satarla and overall support from the TPT Secretariat.

The TPT would like to thank:

- the chair of the Working Group: **Laura Hillis** (Church of England Pensions Board);
- the Co-Chairs of the Sector Guidance Workstream: **Julie Baddeley** (Chapter Zero) and **David Harris** (London Stock Exchange Group); and
- **Dr Rose Clarke**, **Dr Chris Stockey** and **Dr Sarah Gordon** (Satarla), for drafting support.

The TPT would also like to thank the members of the TPT Metals & Mining Working Group and their teams:

Jonathan Dunn and **Amy Yiannitsarou**, Anglo American

Philip Lindop, Barclays

Tristan Stanley and **Andrew Rudyy**, BHP

Philipa Varris, Horizonte Minerals

Sam Cornish, Institutional Investors Group on Climate Change (IIGCC)

George Cheveley, NinetyOne

Danny McNeice, Pensana

Catriona Bell, Standard Chartered

Katie Fedesenko, Teck Resources

Ali Amin, Transition Pathway Initiative Centre, LSE

Tracey Kerr, Non-Executive Director at the Weir Group, Jubilee Metals Group, Hochschild

In addition, the following individuals and their teams provided valuable input, including reviewing drafts of the guidance: **Andy Ross** and **Scott Twigg** (CDP), **Mike Coffin** (Carbon Tracker), **Alice England** (Ecora Resources), and **Christian Spano** (International Council on Mining and Metals).

All members of the TPT Steering Group and Delivery Group are listed on the [TPT website](#).

The TPT would also like to thank members of the TPT Secretariat Sector Guidance team:

Nina Pimblett (Sector Guidance Lead)

Ben Gilbey (Food & Beverage, Electric Utilities & Power Generators, Metals & Mining, Sector Summary)

Nathan Chan (Banks)

Saad Moazam (Oil & Gas)

Sasha Polikarpova (Asset Managers, Asset Owners)

Abigail Bernabe (Sector Summary)

Alexander Schlatter (Sector Summary)

In addition, the TPT thanks the wider TPT Secretariat team for their work to support this guidance and the wider TPT work programme:

Dr Ben Caldecott (Co-Head)

Kate Levick (Co-Head)

Jacques Morris (Team Leader)

Ira Poensgen (Technical Lead)

Helen Civil

Sophie Collerton

Sophie English

Max Rose

Kate Ryan



Contents

ABOUT THE TPT	5
1. INTRODUCTION	6
The TPT's Sector Guidance	6
How this Guidance fits within the suite of TPT Guidance	7
Sector Context	11
Scope of this Guidance	13
A strategic and rounded approach to Metals and Mining transition plans	17
2. INTERPRETING THE TPT DISCLOSURE FRAMEWORK FOR THE METALS & MINING SECTOR	22
GLOSSARY	41

ABOUT THE TPT

The United Kingdom (UK) has set itself ambitious and legally binding targets to cut greenhouse gas (GHG) emissions to net zero by 2050, with binding interim targets. The UK has also pledged at UN climate negotiations to cut emissions by at least 68% by 2030¹

In October 2021, the UK government published the Greening Finance Roadmap, signalling that it intends to strengthen new and existing sustainability reporting requirements for companies, including publication of climate transition plans.

At COP26, the UK Chancellor further committed to work towards the UK becoming the world's first Net Zero-aligned Financial Centre and ensuring that financial flows shift towards supporting a net zero economy. The Chancellor also set out that the UK will move towards making publication of transition plans mandatory.

The Transition Plan Taskforce (TPT) was launched by HM Treasury in March 2022 with a mandate to bring together leaders from industry, academia, and regulators to develop good practice for transition plan disclosures for finance and the real economy. In addition, the TPT has been tasked to engage with non-UK governments and regulatory networks to

support conversations on how to build common baselines and principles for transition planning.

This has included the Financial Stability Board, the International Organization of Securities Commissions (IOSCO) and the Network for Greening the Financial System (NGFS), as well as the G7, G20, UNFCCC and the Coalition of Finance Ministers for Climate Action. The TPT's Disclosure Framework complements, and builds on, the ISSB's final Standards IFRS S1² and S2³ and draws on GFANZ's framework and guidance for credible, comprehensive, and comparable net zero transition planning.

In the 2023 Green Finance Strategy, the UK government committed to consult on introducing requirements for the UK's largest companies to disclose their transition plans if they have them.⁴ In addition, the Financial Conduct Authority (FCA) has signalled its intention to consult on strengthening requirements for transition plan disclosures in line with the TPT Disclosure Framework, alongside its consultation on implementing UK-endorsed ISSB Standards.⁵

In January 2024 the TPT's mandate was extended to 31 July 2024, with the possibility of a further 3-month extension in order to contribute to the work of the new Transition Finance Market Review.

At COP26, the UK Chancellor further committed to work towards the UK becoming the world's first Net Zero-aligned Financial Centre and ensuring that financial flows shift towards supporting a net zero economy

1) See **UK Climate Change Act 2008** and the **UK's Nationally Determined Contribution**, as updated September 2022

2) International Financial Reporting Standards (IFRS), **IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information**, 2023.

3) International Financial Reporting Standards (IFRS), **IFRS S2 Climate-related Disclosures**, 2023.

4) UK Government, **Mobilising green investment: 2023 green finance strategy**, March 2023

5) FCA, **Primary Market Bulletin 45**, August 2023

1. INTRODUCTION

The TPT's Sector Guidance

In October 2023, the TPT published the final **Disclosure Framework** and a **suite of Implementation Guidance**. Preparers of transition plans should first read these products.

The TPT's Terms of Reference also gave the TPT a mandate to produce sectoral guidance for both financial sector and real economy companies. To deliver this the TPT has published two types of sector guidance to complement the TPT Disclosure Framework: the TPT Sector Summary and the TPT Sector Deep Dives.

The TPT Sector Summary was published online in October 2023 and was open for comment until 24 November 2023. This Guidance provides a high-level overview of decarbonisation levers and metrics & targets for an extensive number of financial and real economy sectors, leveraging existing third-party guidance. An updated version of the TPT Sector Summary was published in April 2024.

The TPT Sector Deep Dive Guidance provides sector-specific guidance for preparers to interpret the Disclosure Framework for a small number of sectors. In its **Status Update** in July 2023, the TPT confirmed

- **Asset Managers;**
- **Asset Owners;**
- **Banks;**
- **Electric Utilities & Power Generators;**
- **Food & Beverage;**
- **Metals & Mining;** and
- **Oil & Gas.**

These sectors were chosen given each sector's GHG emissions, its need for or its provision of transition finance in the UK context, and the quality of existing guidance available in the market. In making its selection the TPT sought to identify sectors for which additional guidance would be beneficial in kick-starting transition plan disclosures, while also identifying opportunities to leverage existing sectoral guidance and consolidate it into the context of the Disclosure Framework.

In November 2023, the TPT published the Sector Deep Dive Guidance for consultation. The consultation ran until 29 December 2023. This document is the final version of this Guidance.

The materials produced by the TPT reflect a synthesis of best practice at the time of publication. They do not constitute financial, legal, or other professional advice and should not be relied upon as such. Nothing in the Metals & Mining Guidance is intended to override, substitute, or alter existing legal or regulatory requirements, including, without limitation, duties of the entity's directors and senior managers, and the entity's constitutional documents. Nothing in the Metals & Mining Guidance should be understood to require the disclosure of commercially sensitive information.

How this Guidance fits within the suite of TPT Guidance

In October 2023, the TPT published its final **Disclosure Framework**, as part of a wider suite of Implementation Guidance, including:

- Guidance to help preparers **explore the disclosure recommendations**, including case studies;
- Guidance on **the transition planning cycle**, including case studies;
- Technical mapping to the final **Climate-Related Disclosures standard (IFRS S2) issued by the International Sustainability Standards Board (ISSB)** and the **TCFD's Recommendation and Guidance**;
- A comparison of the TPT Disclosure Framework to the **European Sustainability Reporting Standards (ESRS)**; and
- **Legal considerations for preparers of transition plans using the TPT Disclosure Framework.**

On 9 April 2024, the TPT published the suite of final Sector Deep Dive alongside:

- **Opportunities and challenges relating to the use of private sector transition plans in emerging markets and developing economies**; and
- the final **Transition Planning Cycle Guidance** document which includes new content on adaptation.

The TPT Working Groups on Adaptation, Just Transition and Nature, and the TPT Advisory Group on SMEs, also published advisory papers on 9 April 2024. These papers are independent of the core suite of TPT documents:

- **Building Climate-ready Transition Plans: Including adaptation and resilience for comprehensive Transition Planning approaches**, an advisory paper from the TPT Adaptation Working Group;
- **The Future of Nature in Transition Planning**, an advisory paper from the TPT Nature Working Group;
- **Putting people at the heart of transition plans: key steps and metrics for issuers, an advisory paper from the Just Transition Working Group**; and
- **Considerations on SMEs and transition plans**, an advisory paper from the SME Advisory Group.

The Disclosure Framework contains the foundational disclosure recommendations which apply to all sectors, as shown in Figure 1. It is designed to complement, and build on, the ISSB's final Standards IFRS S1⁶ and S2,⁷ as well as drawing on GFANZ's framework and guidance for credible, comprehensive, and comparable net zero transition planning and uses the same core components and structure. This means that the TPT Framework and GFANZ are both part of an aligned, consistent effort to support the development of private sector transition plans.

Preparers should first read the Disclosure Framework to understand the TPT's key concepts.

6) International Financial Reporting Standards (IFRS), **IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information**, 2023.

7) International Financial Reporting Standards (IFRS), **IFRS S2 Climate-related Disclosures**, 2023.

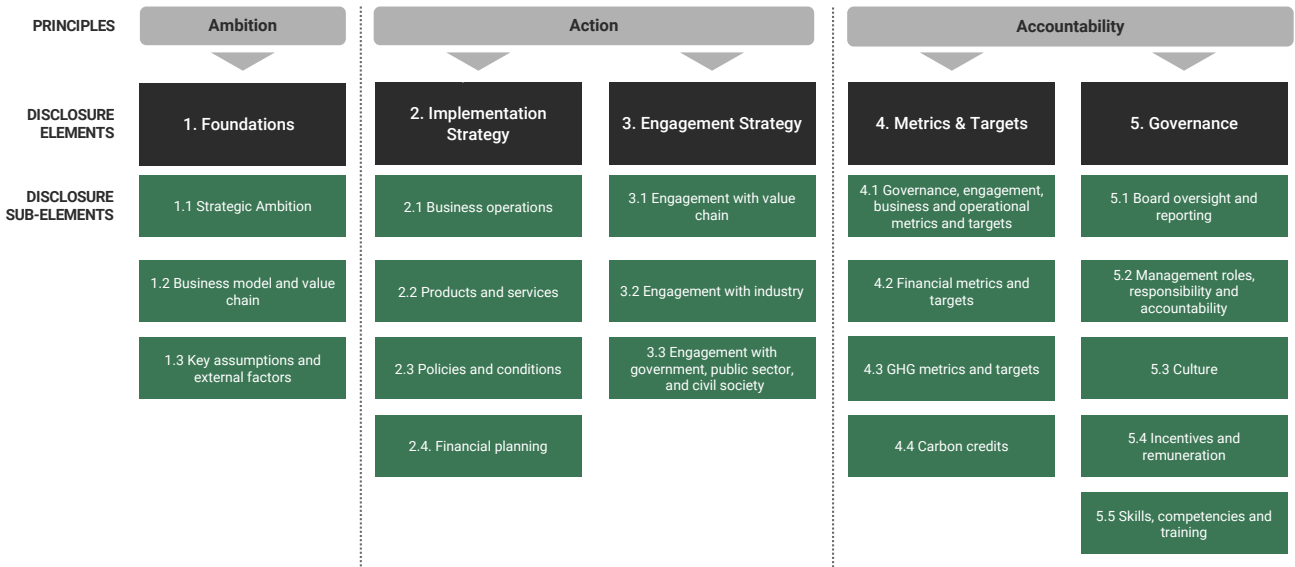


Figure 1: The TPT Disclosure Framework

This Metals & Mining Guidance adds further depth and detail for preparers of transition plans that are operating in the Metals & Mining sector.

Part One of this Guidance (Introduction) introduces the sector context and how the Guidance is to be used alongside the Disclosure Framework and wider TPT Guidance. Part Two (Interpreting the Disclosure Framework for the Metals & Mining sector) provides suggestions of disclosures and further guidance and resources for entities to consider.

The hierarchy of TPT guidance within the overall transition plan disclosures landscape is set out in Figure 2. In jurisdictions where ISSB Standards are to be adopted, preparers will likely begin by consulting IFRS S1 and S2 for wider climate and sustainability disclosures. IFRS S2 contains disclosure requirements relevant to transition planning. The TPT Disclosure Framework then complements, and builds on, ISSB. The TPT’s suite of Implementation Guidance, as well as transition plan guidance materials published by GFANZ, may further help preparers develop their plans. The Metals & Mining Guidance then interprets the Disclosure Framework for the Metals & Mining sector.



Photo Markus Spiske, Unsplash.com

The Transition Plan Disclosures Landscape: how preparers can use the outputs of ISSB, GFANZ, and TPT

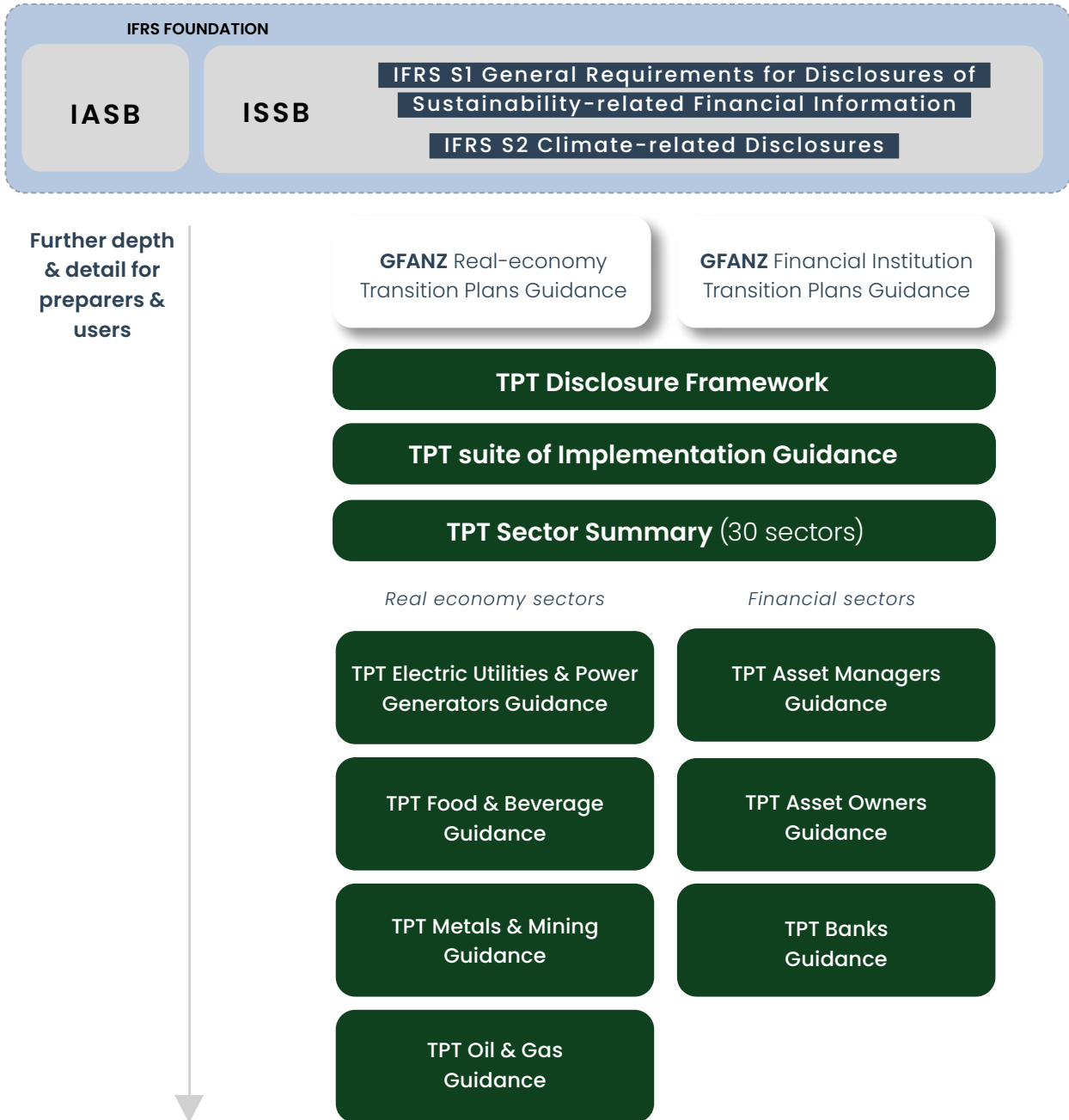


Figure 2: The Transition Plan Disclosures Landscape

Using the Metals & Mining Guidance to interpret the Disclosure Framework

The TPT Disclosure Framework (see Figure 1) breaks down five Elements into 19 Sub-Elements, each of which is supported by Disclosure Recommendations. Where Recommendations are introduced using “**shall**”, this indicates that the TPT views these as relevant disclosures for all good practice transition plans, subject to a materiality assessment. Some Sub-Elements also contain examples of additional disclosures that an entity may consider, but which may not be relevant to all entities. These are introduced using “**may**” or “**e.g.**” and are not intended to be comprehensive. This means an entity may consider disclosing other information under these Sub-Elements.

Part Two of this Guidance supports preparers and users to interpret the Disclosure Framework by setting out suggestions of disclosures that entities “should consider disclosing”. None of the suggestions in this Guidance replace the Disclosure Recommendations in the Disclosure Framework; they are complementary and intended to help preparers interpret the Disclosure Framework. As in the Disclosure Framework, suggested disclosures are not intended to be comprehensive, and an entity may consider disclosing other information under these Sub-Elements where deemed material to the decisions of primary users of the entity’s general purpose financial reports. These suggestions of disclosures are accompanied by further considerations and references to external guidance that preparers may find useful, titled “**When disclosing, an entity may additionally consider:**”.

The TPT Disclosure Framework and Sector Guidance, including this Metals & Mining Guidance, use the ISSB’s definition of a climate-related transition plan, and apply the same approach to materiality and the wider set of concepts, definitions, and corporate reporting norms that are set out in the ISSB’s General Requirements standard (IFRS S1)⁸ (see Appendix 1: Reporting of transition plans in the TPT **Disclosure Framework**). In addition to including transition plan disclosures as part of its general purpose financial reports, the TPT regards it as good practice for an entity periodically to publish its transition plan in a single standalone document that sits alongside its general purpose financial reports.



Photo Unsplash.com

⁸) International Financial Reporting Standards (IFRS), **IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information**, 2023.

Sector Context

The Metals & Mining sector has a vital role to play in the transition to a low-GHG emissions, climate-resilient economy. The sector is an essential step in the value chains of many products, including renewable energy technologies that will be crucial to the global transition. By 2030, demand for critical minerals used for clean energy is expected to soar, with demand rising by four times by 2030 under the International Energy Agency's Net Zero Emissions by 2050 (IEA NZE) scenario.⁹

Yet, raw material extraction and processing contributes significantly to global emissions. In 2022, extraction and processing of metals and non-metallic minerals accounted for 17% of global GHG emissions. The sector is also involved in coal activities, contributing to the further 18% of global GHG emissions in 2022 from fossil fuel extraction and processing.¹⁰ While the sector is positioned to grow considerably, it will simultaneously need to lower its absolute GHG emissions and work with partners to reduce emissions throughout the value chain.

The transition will present a range of sustainability-related risks and opportunities for the sector, including social risks. Reducing its absolute GHG

emissions will create challenges related to the transition of GHG intensive assets, activities, and materials, particularly phase-out of thermal coal. The Metals & Mining sector must ensure that provisions and retraining are put in place for those working on and living near these GHG-intensive operations, so that no-one is left behind in the transition.

Challenges may also arise from the "phase-in" of new operations which meet the needs of a low-GHG emissions, climate-resilient economy. The sector has the opportunity to contribute to a just transition by consulting with, and obtaining the consent of, local communities, upholding labour rights, and the sharing of wealth and resources.

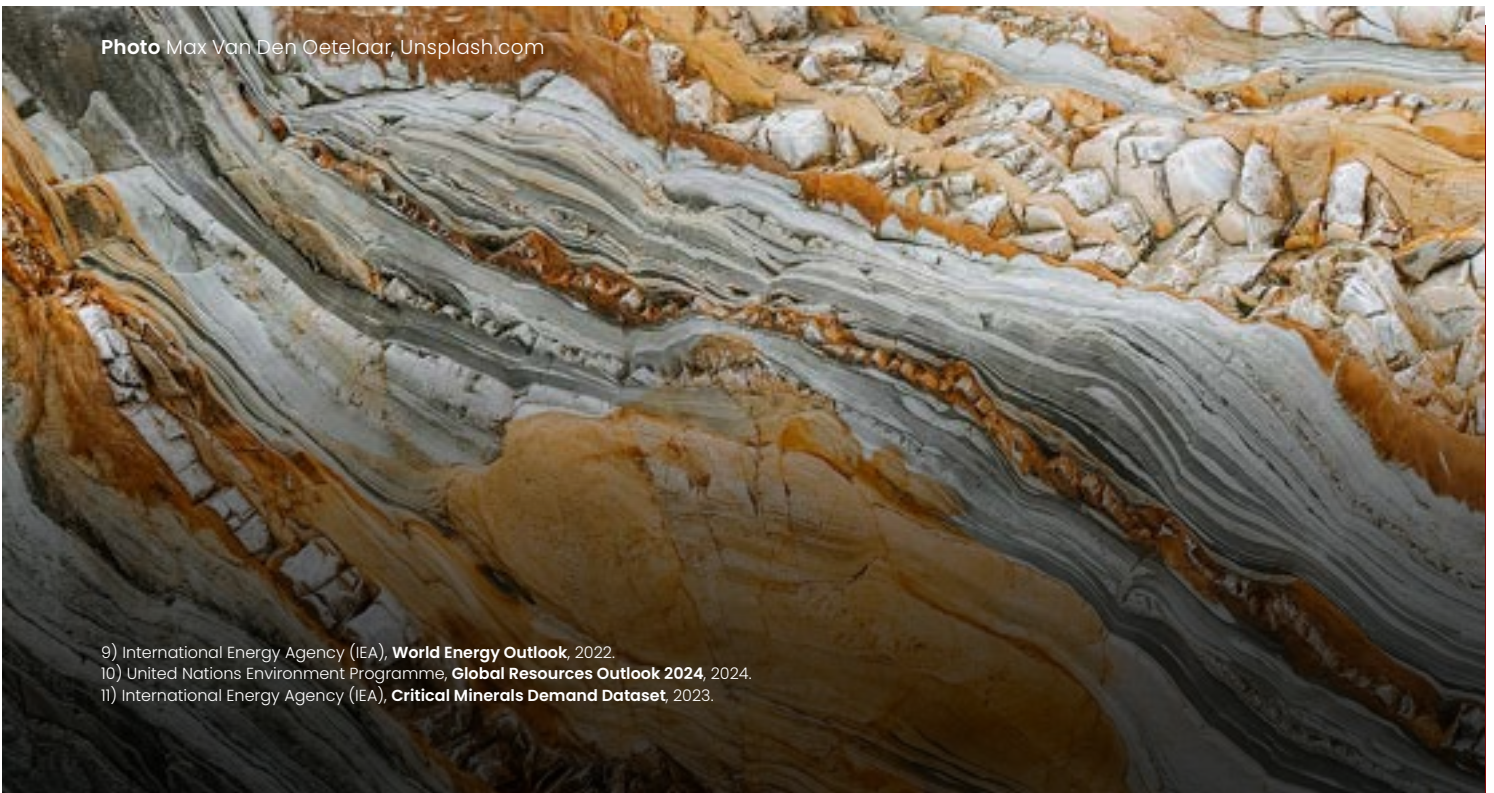
Opportunities will arise in increased demand for clean technologies. Under the International Energy Agency's IEA NZE scenario, demand is expected to rise by 40% for copper, 115% for cobalt, 454% for lithium and 98% for Nickel by 2030, compared to 2022.¹¹ Most of these minerals will need to be mined as a primary product, therefore the mining industry is anticipated to

Photo Max Van Den Oetelaar, Unsplash.com

⁹ International Energy Agency (IEA), **World Energy Outlook**, 2022.

¹⁰ United Nations Environment Programme, **Global Resources Outlook 2024**, 2024.

¹¹ International Energy Agency (IEA), **Critical Minerals Demand Dataset**, 2023.



grow significantly. In time, the repurposing, reuse, and recycling of technology and infrastructure in a more circular economy will allow stocks of materials to be better managed. Under the IEA NZE scenario, secondary supply from recycling will meet between 10 and 20% of total demand for key energy transition materials in 2030 and there is scope for this to increase further.¹² The circular economy offers opportunities for the Metals & Mining sector, including optimising mining processes, drawing value from waste, and developing innovative business models for recycling and metals leasing.¹³

The Metals & Mining sector must remain resilient to the changing climate, as it faces more frequent and severe extreme weather events. Today, between 30 and 50% of the production of copper, gold, iron ore, and zinc is concentrated in areas of high-water stress, with this percentage expected to increase.¹⁴ The changing climate presents

challenges both directly (e.g. through increased frequency and severity of floods, droughts, and landslides affecting mining operations), and indirectly (e.g. from impacts on supply chains or on productivity).¹⁵ The sector will need to assess these risks and put in place processes to adapt and build climate resilience.

Metals & Mining transition plans can safeguard the natural environment by reducing adverse impacts (e.g. deforestation) as the sector expands to meet the needs of the energy transition. The sector's large landholding also presents opportunities for ecosystem restoration and nature-based solutions (e.g. on non-operational land holdings, at sites, and during rehabilitation) which may provide biological sequestration of carbon, as well as having social and nature-related co-benefits. Nature-based solutions can also support the Metals & Mining sector to adapt to climate change, providing water and land management ecosystem services.



Photo Pexels.com

¹² International Energy Agency (IEA), **Net Zero Roadmap: A Global Pathway to Keep the 1.5°C Goal in Reach**, 2023.

¹³ International Council on Metals and Mining (ICMM), **Mining and Metals and the Circular Economy**, 2015.

¹⁴ McKinsey & Company, **Here's how the mining industry can respond to climate change**, 2020.

¹⁵ Klein et al., **Climate risk perception, management and adaptation in the Nordic mining sector**, 2022.

Scope of the TPT Metals & Mining Guidance

The scope of this Metals & Mining Guidance is aligned with the Metals & Mining industry description provided by IFRS:

"The Metals & Mining industry is involved in extracting metals and minerals, producing ores, quarrying stones, smelting and manufacturing metals, refining metals, and providing mining support activities. It also produces iron ores, rare earth metals, and precious metals and stones. Larger entities in this industry are vertically integrated – from mining across global operations to wholesaling metals to customers."¹⁶

It is noted that, while transition plans may initially be produced by large Metals & Mining entities, the sector comprises thousands of smaller ("junior") entities. This Metals & Mining Guidance is applicable to any entity in the sector preparing a transition plan, regardless of its market capitalisation.

Entities may have operations relating to different materials and/or stages of the value chain, and therefore each Metals & Mining entity may find different aspects of the guidance relevant to their specific business models. Entities should apply the TPT's Sector Guidance as appropriate to their specific business model. In instances in which an entity has multiple operations, this may result in an entity using more than one piece of Sector Guidance to support the interpretation of the TPT Disclosure Framework. For example, the TPT recognises that some entities may also have Oil & Gas operations. In such instances, an entity is recommended to use both the TPT's Metals & Mining and Oil & Gas Guidance.¹⁷

Value chain and cross-sector entities

This Guidance divides Metals & Mining activities into value chain segments, as shown in Figure 3. It is noted that not all commodities go through all stages or processes, and some commodities go through some stages or processes more than once.

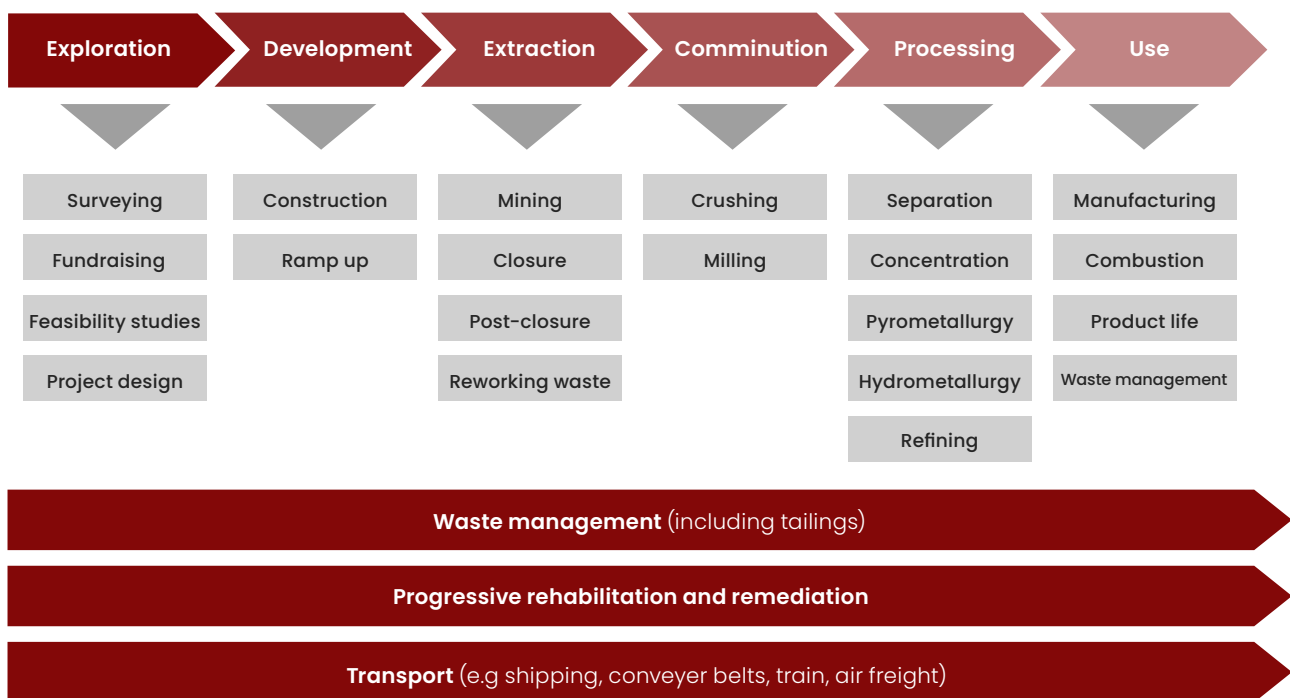


Figure 3: Stages, steps, and processes in the Metals & Mining value chain considered in the TPT Metals & Mining Guidance.

16) International Financial Reporting Standards (IFRS), **IFRS S2 Climate-related Disclosures**, 2023.

17) Transition Plan Taskforce (TPT), **Oil & Gas Sector Guidance**, 2024.

This Guidance is relevant to entities operating in the exploration, development, extraction, comminution, and processing value chain stages. This Guidance does not directly apply to activities related to downstream use of material typically performed by other sectors, including design of technology and infrastructure, manufacturing, combustion, reuse, and collection.

As circular business models can play a key role in the transition of the Metals & Mining sector,¹⁸ this guidance references activities related to processes and product circularity. Process circularity actions, such as reworking waste and tailings or increasing scrap use in processing and refining, may require actions to be taken in an entity's own business operations. Improving product circularity, where product design and collection processes are used to harvest and reuse metals, may require engagement activities with an entity's downstream value chain.

Guidance provided on the processing value chain stage is high-level to encompass the wide range of materials that are processed. Given steelmaking, aluminium and cement, and chemical production activities each account for a large share of global emissions,¹⁹ entities operating in these activities are recommended to refer to the TPT Sector Summary for Iron & Steel Producers,²⁰ Construction Materials,²¹ and Chemicals²² for these industries.

Photo Scott Webb, Unsplash.com

18) International Council on Mining and Metals, **Mining and the Circular Economy**, 2023.
19) See Table A.4c: International Energy Agency (IEA), **World Energy Outlook 2023**, 2023.
20) Transition Plan Taskforce (TPT), **Sector Summary: Iron & Steel Producers**, 2024.
21) Transition Plan Taskforce (TPT), **Sector Summary: Construction Materials**, 2024.
22) Transition Plan Taskforce (TPT), **Sector Summary: Chemicals**, 2024.

Mining method

This Metals & Mining Guidance is applicable to all types of mineral extraction (e.g. underground and surface mining, dredging, solution or fluid extraction, harvesting, and re-processing). This Guidance is applicable to all methods used currently, and that may be used in the future.

Materials

This Guidance is applicable to all non-biological raw materials, including:

- base metals;
- iron and other steel raw materials;
- precious metals;
- critical minerals – noting that many different critical minerals lists exist (e.g. the UK Critical Minerals list),²³ and that critical minerals may also be base or precious metals;
- gemstones;
- mineral sands;
- silicon and other non-metals;
- quarrying products including (but not limited to) stone, sands, and aggregates;
- metallurgical coal;
- thermal coal;
- naturally occurring radioactive materials including uranium; and
- phosphate, potash, and fertiliser.²⁴

This Metals & Mining Guidance is material-agnostic, although specific guidance is provided for coal given the high emissions impact of coal combustion and the associated transition risk. Coal mining itself produces significant emissions, primarily methane emissions need to be rapidly reduced to limit near-term global warming. In 2022, coal mine methane emissions were estimated by the IEA as 41.8 Mt representing more than 10% of total methane emissions from human activity. This excludes emissions from abandoned coal mines, which may account for almost one fifth of methane emissions from coal production.²⁵

This Metals & Mining Guidance distinguishes between thermal and metallurgical coal where relevant, to account for their different end-uses and decarbonisation timelines:

- Thermal coal is primarily burned directly to generate steam for production of electricity, with thermal coal power generation accounting for nearly 75% of the electricity sector's total emissions.²⁶ Many governments have committed to phasing out thermal coal;²⁷
- Metallurgical coal is primarily used in steelmaking, with demand expected to reduce by the move towards hydrogen and electricity-based steel technologies.²⁸

23) UK Government, **Resilience for the Future: the UK's Critical Minerals Strategy**, 2022.

24) Please note that this Metals & Mining Guidance does not consider emissions associated with the application of fertiliser.

25) International Energy Agency (IEA), **Global Methane Tracker 2023**, 2023.

26) International Energy Agency (IEA), **Net Zero Roadmap: A Global Pathway to Keep the 1.5°C Goal in Reach**, 2023.

27) At COP28, the final **Global Stocktake Text** (agreed by 198 Governments) called to accelerate efforts towards the phase-down of unabated coal power and transitioning away from fossil fuels in energy systems.

28) See Figure 2.2.0: International Energy Agency (IEA), **Net Zero Roadmap: A Global Pathway to Keep the 1.5°C Goal in Reach**, 2023.

Sub-Elements of the Disclosure Framework addressed in this Guidance

The Disclosure Framework sets out 19 Sub-Elements supported by a series of Disclosure Recommendations. While entities are expected to disclose against all Sub-Elements, only 13 were selected for sector-specific interpretation in this Guidance. Sub-Elements were selected considering the scope for additional sector specificity to build on the Disclosure Framework, and the breadth and depth of existing sector-specific guidance.

For Sub-Elements where additional sector-specific guidance is provided, this may only apply to some Disclosure Recommendations of the Disclosure Framework. Suggestions for disclosures and additional considerations are not intended to be comprehensive. An entity should disclose other information under these Sub-Elements where deemed appropriate.

The Disclosure Recommendations in the Disclosure Framework for the remaining six Sub-Elements were deemed not to require further sector-specific detail or interpretation. No additional sector-specific guidance has been provided for these Sub-Elements.

The Sub-Elements selected for interpretation in this Guidance are set out in Figure 4 below.

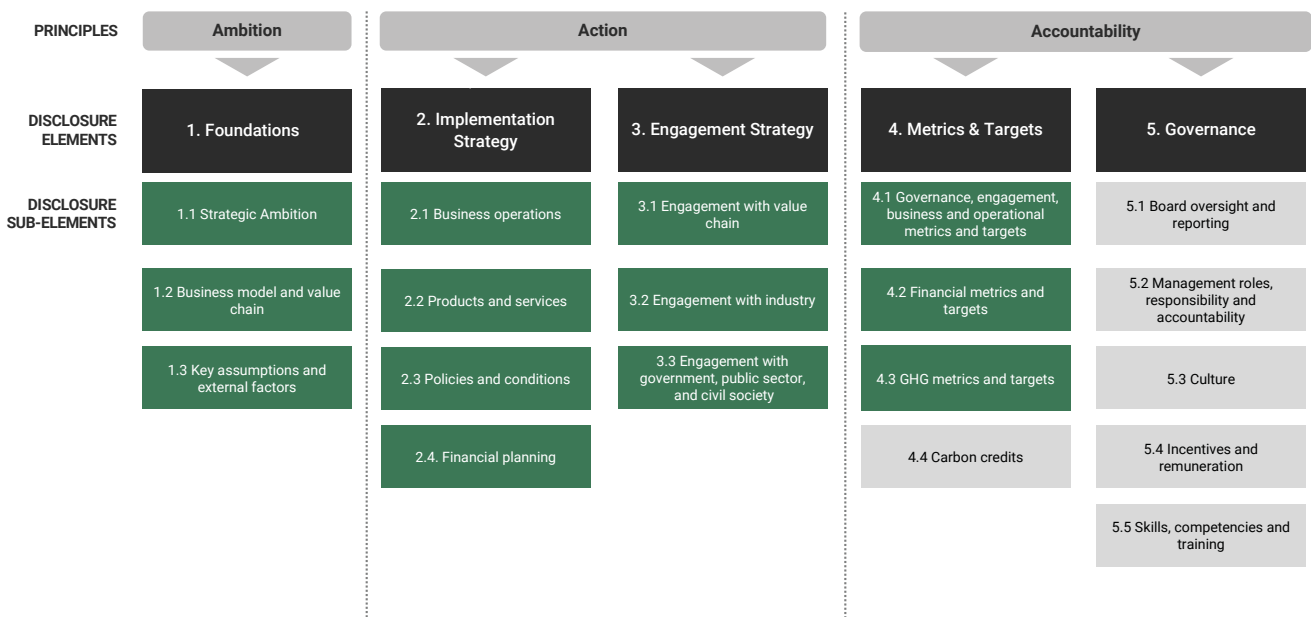


Figure 4: Sub-Elements selected for interpretation in this Guidance



A strategic and rounded approach to Metals and Mining transition plans

The TPT Disclosure Framework recommends that entities take a strategic and rounded approach to transition planning, considering three inter-related channels:

- 1. Decarbonising the entity:** Given the sector's substantial contribution to global GHG emissions, the Metals & Mining Guidance highlights actions that may be taken in an entity's business operations to reduce its Scope 1 and 2 emissions. These include reducing fossil fuel use, increasing the use of low GHG emissions energy and reducing emissions from land use change. Scope 3 emissions typically account for 75% or more of Metals & Mining entities' emissions profiles,^{29,30} so this Guidance emphasises engagement with upstream suppliers, transportation contractors, and downstream customers to support reductions of these emissions.
- 2. Responding to the entity's climate-related risks and opportunities:** The Metals & Mining sector faces substantial transition and physical climate-related risks and opportunities. Transition risks may include carbon pricing, changing investor expectations, and falling demand for coal, while opportunities may arise from a growing demand for materials needed for low-carbon technologies. There are also growing physical risks to the sector including increased water stress and extreme weather events, leading to supply chain disruption and health and safety concerns at operations. Adaptation actions taken to address these transition and physical risks should be a key component of transition plans.
- 3. Contributing to an economy-wide transition:** The Metals & Mining sector can support acceleration of the adaptation and decarbonisation of the whole economy by providing the materials required for a low-GHG emissions, climate-resilient economy. In addition, a Metals & Mining entity can adopt circular business models, in turn reducing demand for the extraction of materials across the economy and decreasing associated emissions. This may include actions to extract materials from mining waste, increasing the use of scrap in metals processing, and adopting product design and collection processes that enable the indefinite reuse of metals. The Metals & Mining sector can also help deliver GHG removals, for example by developing nature-based solutions via its landholdings and the carbonation of waste rock.

Considering all three inter-related channels in designing their transition plan can help Metals & Mining entities to protect and enhance long-term value, and to avoid the unintended consequences of an approach which exclusively focuses on achieving GHG emissions or adaptation targets within an entity's own operations and portfolio.

Taking a strategic and rounded approach helps Metals & Mining entities consider a wide range of decarbonisation levers available to them and, where possible, avoid a strategy of 'paper decarbonisation', which is characterised by actions that are taken to green an entity's balance sheet in a way that may not necessarily contribute to the actual decarbonisation of the economy.

29) CDP, **Technical note: Relevance of Scope 3 Categories by Sector**, 2022.

30) International Council on Mining and Metals (ICMM), **Metals and mining: scope 3 emissions factsheet**, 2023.

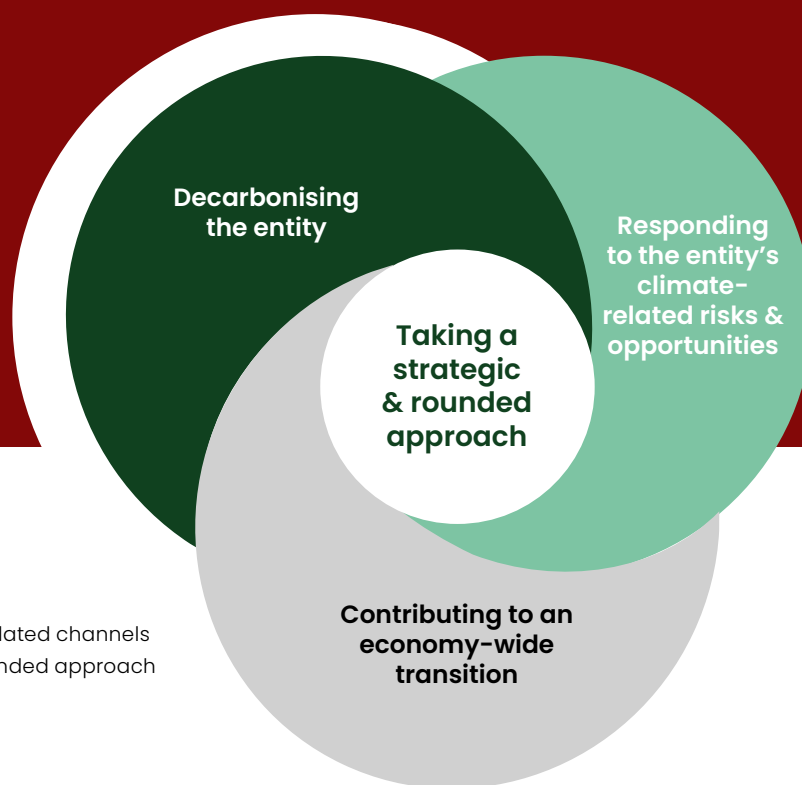


Figure 5: Three inter-related channels for a strategic and rounded approach

Impacts and dependencies of the transition plan: stakeholders, society, the economy and the natural environment

The Disclosure Framework sets out how disclosures relating to climate-resilience, nature and society are part of a transition plans. Sub-Element **1.1 Strategic Ambition** of the TPT Disclosure Framework states:

An entity shall disclose the **Strategic Ambition** of its transition plan. This shall comprise the entity's objectives and priorities for responding and contributing to the transition towards a low-GHG emissions, climate resilient economy, and set out whether and how the entity is pursuing these objectives and priorities in a manner that captures opportunities, avoids adverse impacts for stakeholders and society, and safeguards the natural environment.

The TPT Disclosure Framework recommends that an entity shall disclose whether and how it has identified, assessed and taken into account the impacts and dependencies of the transition plan on its stakeholders (e.g. its workforce, value chain counterparts, customers), society (e.g. local communities), the economy, and the natural environment, throughout its value chain, that may give rise to sustainability-related risks and opportunities (**see DF 1.1.b**).

This section outlines how these impacts and dependencies may occur in the Metals & Mining sector. This can inform specific disclosures under **1.1 Strategic Ambition**.

Impacts and dependencies: the natural environment

The transition plan of an entity in the Metals & Mining sector may impact and depend on the natural environment and many of the ecosystem services it provides. For example, as part of their transition plan, entities may scale up their activities to cater to an increasing demand of raw materials required to implement decarbonisation efforts and meet the Sustainable Development Goals.^{31,32} The expansion of exploration, development, mining, and processing operations, along with required infrastructure, has the potential to significantly impact on the natural environment, such as habitat degradation or loss. Similarly, entities may have a dependency on ecosystem services to provide resources such as water.

The impacts and dependencies of an entity's transition plan on the natural environment may give rise to sustainability-related risks and opportunities. For example, local habitat loss and degradation may give rise to opposition, creating political and reputational risks. Similarly, the destruction of ecosystems and soil erosion due to infrastructure development may increase the risk of hazards from landslides and storms. An entity may find that it can address these risks and leverage opportunities by taking steps to mitigate their impacts or actively work to reverse the loss of nature. For example, investing in local mitigation and nature restoration projects may increase community consent for the project, reducing political and reputational risks.

The TPT therefore recommends that entities disclose whether and how they identify, assess, and take into account the impacts and dependencies of their transition plan, and pursue their objectives and priorities in a manner that safeguards the environment. See Figure 6 for an illustrative example of impacts and dependencies of a Metals & Mining entity's transition plan on the natural environment.

In doing so, entities in the Metals & Mining sector may find it helpful to refer to:

- The Exploring Natural Capital Opportunities, Risks and Exposure's *ENCORE tool*;³³
- Science-based Targets Network's (SBTN), *Target-setting Tools and Guidance* (see Materiality Screening Tool under Step 1: Assess);³⁴
- Taskforce on Nature-related Financial Disclosures' (TNFD), *Guidance on the identification and assessment of nature-related issues: The LEAP approach*³⁵ and *Draft sector guidance: Metals and mining*.³⁶

Photo Sam Moghadam Khamseh, Unsplash.com

31) International Energy Agency (IEA), *World Energy Outlook 2022*, 2022.

32) United Nations Development Programme (UNDP), *Mapping Mining to the SDGs: An Atlas*, 2016.

33) Exploring Natural Capital Opportunities, Risks and Exposure (ENCORE), *ENCORE Tool*, as of 2024.

34) Science-based Targets Network (SBTN), *Target-setting Tools and Guidance*, 2023.

35) Taskforce on Nature-related Financial Disclosures (TNFD), *Guidance on the identification and assessment of nature-related issues: The LEAP approach*, 2023.

36) Taskforce on Nature-related Financial Disclosures (TNFD), *Draft sector guidance: Metals and mining*, 2023.

Impacts and dependencies: stakeholders, society, and the economy

For entities within the Metals & Mining sector, the implementation of a transition plan may impact and depend on its stakeholders (e.g. workers, value chain counterparts and customers), society (e.g. local communities, NGOs, interest groups, and the public), and the economy. This is particularly relevant given that the sector, along with the required infrastructure, is expected to expand to meet the rising demand for raw materials which the transition will create.

The impacts and dependencies of a Metals & Mining entity's transition plan on stakeholders, society, and the economy may give rise to sustainability-related risks and opportunities. For example, where a transition plan includes closing operations, this could result in job losses and economically stranded communities. Opening new operations could result in physical and economic displacement of communities, and loss of prior livelihoods. In turn, this could create tensions with local communities (including indigenous peoples), which may slow or prevent the development of new operations. In addition, where the entity is able to out-bid other actors for water resources, the development and operation of facilities may reduce the water availability for local industries and communities. Equally, opportunities may arise through the transition plan, with skilled worker shortages being met by working with local communities to deliver jobs, education and training.

An entity may find that taking a just transition approach to transition planning can help to mitigate these risks and capture opportunities. For example, ensuring Free and Prior Informed Consent (FPIC), conducting human rights due diligence, and ensuring meaningful dialogue and participation of impacted groups throughout the value chain can strengthen community consent. Benefits may also arise from taking steps to ensure the value of projects are shared with local communities. The TPT therefore recommends that Metals & Mining entities disclose whether and how they identify, assess and take into account the impacts and dependencies of their transition plan, and pursue their objectives and priorities in a manner that captures opportunities and avoids adverse impacts for stakeholders and society. See Figure 6 for an illustrative example of impacts and dependencies of a Metals & Mining entity's transition plan on its stakeholders, society, and the economy.

The In doing so, entities in the Metals & Mining sector may find it helpful to refer to:

- The Council for Inclusive Capitalism's *Just Transition Framework for Company Action*;³⁷
- Responsible Mining Foundation's *Beyond Emissions Reductions: climate change and mining*.³⁸

³⁷ The Council for Inclusive Capitalism, *Just Transition Framework for Company Action*, 2023.

³⁸ Responsible Mining Foundation, *Beyond emissions reductions: climate change and mining*, 2021.

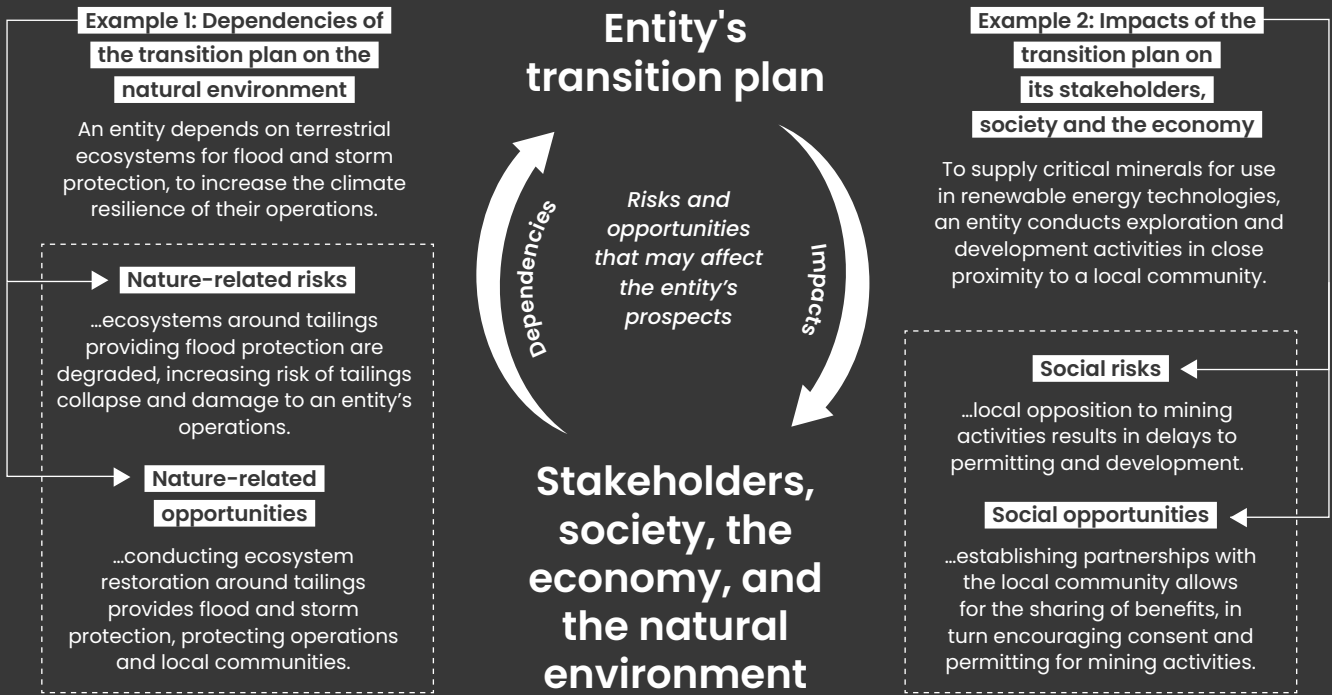


Figure 6: Illustrative example of impacts and dependencies of a Metals & Mining entity's transition plan on its stakeholders, society, the economy, and the natural environment, that may give rise to sustainability-related risks and opportunities.



Photo Rachel Claire, Pexels.com

2. INTERPRETING THE TPT DISCLOSURE FRAMEWORK FOR THE METALS & MINING SECTOR

Preparers should first read the Disclosure Framework which provides Disclosure Recommendations for each Sub-Element.

The Metals & Mining Guidance uses the ISSB's definition of a climate-related transition plan and applies the same approach to materiality and the wider set of concepts, definitions, and corporate reporting norms that are set out in the ISSB's General Requirements standard (IFRS S1).³⁹

Sector-specific guidance is not provided for all Sub-Elements of the Disclosure Framework. Where additional sector-specific guidance is not provided, the following statement is included **"No additional sector-specific guidance is provided for this Sub-Element"**.

For Sub-Elements for which additional sector-specific guidance is provided, additional guidance may only be provided for some of the Sub-Element's Disclosure Recommendations. Cross-references to Disclosure Recommendations included in the Disclosure Framework are provided in the format **"(see DF 1.1.a)"**.

The additional sector-specific guidance is not intended to be comprehensive. An entity should disclose other information and consider other resources where deemed appropriate.

1. Foundations

Sub-Element

1.1 Strategic Ambition

An entity shall disclose the Strategic Ambition of its transition plan. This shall comprise the entity's objectives and priorities for responding and contributing to the transition towards a low-GHG emissions, climate-resilient economy, and set out whether and how the entity is pursuing these objectives and priorities in a manner that captures opportunities, avoids adverse impacts for stakeholders and society, and safeguards the natural environment.

When interpreting the Disclosure Framework for the Metals & Mining sector, an entity should consider disclosing:

- its objectives and priorities for reducing its Scope 1 and 2 GHG emissions in its operations **(see DF 1.1.a.i)**, including objectives and priorities disaggregated by:
 - each value chain stage in which it operates (e.g. exploration, development, extraction, comminution and/or processing);
 - the countries and/or regions in which it has significant activities; and
 - sites that it has significant business activities;
- its objectives and priorities for reducing its Scope 3 GHG emissions, including in relation to **(see DF 1.1.a.i)**:
 - upstream emissions associated with the purchase of goods and services;
 - upstream or downstream emissions associated with transportation; and
 - downstream emissions associated with the processing of sold products;
- its objectives and priorities for enhancing its resilience to the changing climate and responding to the risks and opportunities that arise from the transition to a low-GHG emissions, climate-resilient economy, including objectives and priorities in relation to **(see DF 1.1.a.ii)**:
 - land use change and land management (e.g. deforestation, construction, and rehabilitation);
 - tailings and waste (e.g. toxic waste, hazardous waste, and tyres); and
 - water usage and water management (e.g. water-stressed areas and pollution);
- its objectives and priorities to use the levers and capabilities available to provide materials to embed and accelerate a transition to a low-GHG emissions climate-resilient economy **(see DF 1.1.a.iii)**;

³⁹ International Financial Reporting Standards (IFRS), **IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information**, 2023.

- if relevant, its objectives and priorities in relation to its coal operations (**see DF 1.1.a.i-iii**) including:
 - o its coal exploration and extraction activities and any planned activities, including new coal mine openings, acquisitions, expansions and extensions;
 - o its coal mine methane emissions;
 - o the use of sold product GHG emissions associated with thermal coal; and
 - o the processing of sold product GHG emissions associated with metallurgical coal.

When disclosing, an entity may additionally consider:

When disclosing its objectives and priorities disaggregated by each stage of the value chain in which it operates, an entity may refer to the **Scope of the TPT Metals & Mining Guidance** section within this guidance (see page 13).

When defining objectives and priorities to reduce its Scopes 1, 2, and 3 GHG emissions associated with transportation, an entity may refer to:

- International Council on Mining and Metals' (ICMM) Innovation for Cleaner, Safer Vehicles (ICSV) initiative which aims to minimise the operational impact of diesel exhaust in underground mining operations by 2025 and introduce GHG emissions-free surface mining vehicles by 2040;⁴⁰ and
- the First Movers Coalition which sets procurement commitments for zero emission fuels or vehicles for aviation, shipping, and trucking.⁴¹

When disclosing its objectives and priorities to use the levers and capabilities available to provide materials to embed and accelerate a transition to a low-GHG emissions climate-resilient economy, an entity may consider both how it will increase the supply of these materials and reduce their GHG emissions impact. An entity may refer to the IEA's overview of the average GHG emissions intensity for mining and processing of eight materials needed for the transition, as well as opportunities to reduce these emissions.⁴²

When disclosing the extent to which it has taken into account and aligned with any sectoral pathways, roadmaps or other climate scenarios, an entity may consider the International Finance Corporation's (IFC) *Net Zero Roadmap for Copper and Nickel Value Chains*.⁴³

When disclosing its objectives and priorities to use the levers and capabilities available to embed and accelerate a transition to a low-GHG emissions, climate-resilient economy, an entity may consider whether its landholdings may support nature-based solutions and low-carbon energy generation.

When disclosing the extent to which it has taken into account and aligned with any external scenarios in relation to coal, an entity may consider the IEA NZE scenario which includes (from a baseline year of 2022):

- a rapid decline in coal mine methane by more than 70% to 2030, driven in large part by a significant fall in coal demand;⁴⁴
- a decline in thermal coal demand of 50% by 2030, and 92% by 2050;⁴⁵
- a decline in metallurgical coal demand of 25% by 2030, and 90% by 2050;⁴⁶ and
- no new coal mines or coal mine lifetime extensions, due to a decline in coal demand.⁴⁷

When disclosing whether and how it has identified, assessed and taken into account the impacts and dependencies of the transition plan on its stakeholders (e.g. its workforce, value chain counterparts, customers), society (e.g. local communities), the economy, and the natural environment, throughout its value chain, that may give rise to sustainability-related risks and opportunities, an entity may find it helpful to refer to the **Impacts and dependencies of the transition plan on stakeholders, society, the economy and the natural environment** section within this Guidance (see page 18).

40) International Council on Mining and Metals (ICMM), **Cleaner and Safer Vehicles**, 2023.

41) First Movers Coalition, **Commitments**, as of 2024.

42) International Energy Agency (IEA), **The Role of Critical Minerals in Clean Energy Transitions**, 2021.

43) International Finance Corporation (IFC), **Net Zero Roadmap for Copper and Nickel Value Chains - CommDev**, 2023.

44) International Energy Agency (IEA), **Driving down Coal Mine Methane Emissions: A Regulatory Roadmap and Toolkit**, 2023.

45) See Table 3.7: International Energy Agency (IEA), **World Energy Outlook**, 2023.

46) See Table 3.7: International Energy Agency (IEA), **World Energy Outlook**, 2023.

47) International Energy Agency (IEA), **Net Zero Roadmap: A Global Pathway to Keep the 1.5°C Goal in Reach**, 2023.

1.2 Business model and value chain

An entity shall disclose a description of the current and anticipated implications of the entity's **Strategic Ambition** on its business model and value chain.

When interpreting the Disclosure Framework for the Metals & Mining sector, an entity should consider disclosing:

- whether and how non-operational assets, joint ventures and other minority interests are addressed within its **Strategic Ambition**, and the approach taken to include these within its GHG emissions inventory (**see DF 1.2.a**);
- information about its approach towards assessing the alignment of non-operated assets, joint ventures and minority interests with its **Strategic Ambition** (**see DF 1.2.a**); and
- if relevant, any anticipated strategic changes to its physical trading business (**see DF 1.2.a**).

1.3 Key assumptions and external factors

An entity shall disclose key assumptions that it has made and external factors on which it depends in order to achieve the **Strategic Ambition** of its transition plan.

When interpreting the Disclosure Framework for the Metals & Mining sector, an entity should consider disclosing:

- the nature of the key assumptions that it uses and external factors on which it depends, and their implications for the achievement of the **Strategic Ambition**, on a regional or global level, which may include (**see DF 1.3.a**):
 - o materials demand;
 - o availability and pricing of natural resources (excluding minerals) upon which materials production is reliant (e.g. water, land, tailings, and waste management);
 - o changes to operations (e.g. mine opening or closure);
 - o GHG emissions pricing;
 - o electricity grid mix and/or carbon intensity;
 - o emissions intensity of other energy inputs;
 - o the expected role of GHG neutralising measures, including assumptions relating to permanence/leakage;
 - o tax (including carbon border taxes), allowances and reliefs; and
 - o reliance on technological development and related infrastructure readiness, specifically considering the role of carbon capture, utilisation, and storage, methane capture technologies, as well as hydrogen and its derivatives (e.g. ammonia).

When disclosing, an entity may additionally consider:

When considering the decarbonisation trajectories of the global economy, relevant geographies and/or the mining sector, an entity may consider internationally recognised scenarios including the IEA's *World Energy Outlook*.⁴⁸ In addition, an entity may refer to regional or national government sectoral pathways or roadmaps (e.g. the UK's commitment to decarbonise its electricity system by 2035).⁴⁹

When disclosing the timeframes over which any key assumptions and external factors are expected to occur, an entity may consider whether its decarbonisation trajectory may be non-linear. For example, an entity's decarbonisation trajectory may be impacted if it were to bring new operations online, or responsibly close an operation. Similarly, actions taken to reduce emissions (e.g. fleet replacements) may occur in a non-linear fashion.

When disclosing the nature of any key assumptions it uses or external factors on which it depends related to its reliance on mature and less mature technologies, an entity may consider the technology readiness levels (TRL) used by IEA. An entity may consider delineating between its use of Prototype (TRL 4-6), Demonstration (TRL 7-8), Early Adoption (TRL 9-10), and Mature (TRL 11) technologies. Broadly, mature technologies are those that are available and economically viable today, while less mature technologies are those which may not be available and/or are economically unviable.⁵⁰

48) International Energy Agency (IEA), **World Energy Outlook**, annual publications.

49) UK Government, **UK's Nationally Determined Contribution**, 2022.

50) International Energy Agency (IEA), **ETP Clean Energy Technology Guide**, 2023.

2 Implementation Strategy

Sub-Element

2.1 Business operations

An entity shall disclose information about the short-, medium-, and long-term actions it is taking or plans to take in its business operations in order to achieve the **Strategic Ambition** of its transition plan.

When interpreting the Disclosure Framework for the Metals & Mining sector, an entity should consider disclosing:

- information about any short-, medium-, and long-term actions it is taking or plans to take in its business operations in relation to its **exploration and development** activities. This may include how climate-related risks and opportunities are considered within its:
 - o baseline studies (**see DF 2.1.b.iii**);
 - o environmental and socio-economic impact assessments (**see DF 2.1.b.iii**);
 - o pre-feasibility studies (**see DF 2.1.b.iii**); and
 - o feasibility studies (**see DF 2.1.b.iii**);
- information about any short-, medium-, and long-term actions it is taking or plans to take in its business operations in relation to its **extraction activities**, which may include:
 - o improving the efficiency of extraction methods and equipment (**see DF 2.1.a.i**);
 - o procuring low emission and/or electric vehicles and machinery (**see DF 2.1.a.iii**); and
 - o implementing progressive rehabilitation (versus rehabilitation efforts being exclusively made during closure) to realise operational synergies and related optimised closure outcomes (**see DF 2.1.b, 2.b.iii**);
- information about any short-, medium-, and long-term actions it is taking or plans to take in its business operations in relation to its **comminution and processing activities**, which may include:
 - o improving the efficiency of comminution methods and equipment (**see DF 2.1.a.i**);
 - o improving design or material science in downstream product manufacture (**see DF 2.1.a.i**);
 - o improving the efficiency of processing, especially for materials which require GHG emission-intensive processing (**see DF 2.1.a.i**); and
 - o increasing proportion of scrap used in processing and refining (**see DF 2.1.a.i**);
- information about any short-, medium-, and long-term actions it is taking or plans to take in its business operations in relation to its **coal-related activities** (where applicable), which may include:
 - o the abatement of coal mine methane (e.g. pre-mining de-gasification, responsible drainage, ventilation with oxidisation or capture), subdivided by type of mine (**see DF 2.1.a.i**);
 - o the responsible retirement or phase-out of coal mining operations (**see DF 2.1.b.ii**); and
 - o abatement of coal mine methane emissions during closure (e.g. through flooding or sealing) (**see DF 2.1.b.ii**);
- information about any short-, medium-, and long-term actions it is taking or plans to take in its business operations in relation to its **energy consumption and production activities**, which may include:
 - o procuring zero GHG emissions electricity, heat, or cooling (e.g. through power purchase agreements) (**see DF 2.1.b.iii**);
 - o developing onsite generation of zero-carbon electricity using land holdings (**see DF 2.1.b.ii**); and

- o developing low-carbon fuel production (e.g. green hydrogen) (see DF 2.1.b.iii);
- information about any short-, medium-, and long-term actions it is taking or plans to take in its business operations in relation to **carbon removal activities**, which may include:
 - o equipping processing facilities with carbon, capture, utilisation, and storage (CCUS) (see DF 2.a.iii);
 - o use of non-operational land holdings for ecosystem restoration and nature-based solutions; (see DF 2.a.iii);
 - o carbonation of waste rock and storage in tailings or abandoned mines; (see DF 2.a.iii);
- information about any short-, medium-, and long-term actions it is taking or plans to take in its business operations in its **corporate activities**, which may include:
 - o identifying assets, processes, and activities that are vulnerable to a changing climate (see DF 2.1.b.iii);
 - o climate-proofing new and existing sites (see DF 2.b.iii);
 - o making workforce adjustments, including changes in the relative proportion of highly skilled jobs compared to manual jobs (see DF 2.1.a.ii);
 - o retaining, retraining, re-deploying and/or compensating workers affected by changes to business operations (see DF 2.1.a.ii); and
 - o procurement of essential products (e.g. chemical reagents or explosives) with lower GHG emissions (see DF 2.1.a.iii).

When disclosing, an entity may additionally consider:

Entities with ongoing development plans relating to sites and associated infrastructure may consider disclosing relevant information relating to anticipated land use changes, energy usage, and materials with potential for extraction, along with anticipated time frames. In particular, entities may consider specific disclosures for anticipated land use changes should be specifically looked at in areas of high biodiversity importance, such as Key Biodiversity Areas (KBAs).⁵¹

Entities anticipating the responsible closure, and/or responsible divestment of coal or other GHG-intensive assets, may consider disclosing any public commitments and/or management and closure plans. An entity may refer to GFANZ's *The Managed Phaseout of High-emitting Assets* which outlines features that companies may be expected to provide in respect of managed phaseout, including phase-out timing and details on ensuring an orderly and just transition.⁵²

Entities taking action in relation to the abatement of coal mine methane may consider guidance including:

- IEA's *Global Methane Tracker*, which includes a marginal abatement cost curve of measures to abate coal mine methane;⁵³ and
- UN Economic Commission for Europe's *Best Practice Guidance for Effective Methane Drainage and Use in Coal Mines*,⁵⁴ and *Best Practice Guidance for Effective Methane Recovery and Use from Abandoned Coal Mines*.⁵⁵

When considering responsible closure planning, an entity may consider the use of progressive rehabilitation, where rehabilitation takes place once land is no longer required for operational purposes, instead of rehabilitation at closure.⁵⁶ This may reduce mine closure costs, restore ecological functions, support carbon sequestration, and provide opportunities for communities to use rehabilitated land.

51) See [KBA website](#) for further information.

52) Figure 11: Glasgow Financial Alliance for Net Zero (GFANZ), *The Managed Phaseout of High-emitting Assets*, 2022.

53) International Energy Agency (IEA), *Global Methane Tracker*, 2023.

54) UN Economic Commission for Europe, *Best Practice Guidance for Effective Methane Drainage and Use in Coal Mines*, 2019.

55) UN Economic Commission for Europe, *Best Practice Guidance for Effective Methane Recovery and Use from Abandoned Coal Mines*, 2019.

56) Queensland Government, *Guideline: Progressive rehabilitation and closure plans*, 2023.

2.2 Products and services

An entity shall disclose information about short-, medium-, and long-term actions it is taking or plans to take to change its portfolio of products and services in order to achieve the **Strategic Ambition** of its transition plan.

When interpreting the Disclosure Framework for the Metals & Mining sector, an entity should consider disclosing:

- for each of the materials that the entity explores, extracts and/or processes (**see DF 2.2.b**):
 - o whether each material is aligned with a low-GHG emissions, climate-resilient future; and
 - o any underlying taxonomy, tools, methodologies, or definitions used to classify these materials;
- information about any current or planned actions to change its portfolio of materials, including timelines, to align with a low-GHG emissions, climate-resilient future (**see DF 2.2.a**);
- information about any current and anticipated actions, including timelines, to change its portfolio of products and services that support the circular use of materials (including recovery, reuse, and recycling) (**see DF 2.2.a**); and
- if an entity has physical trading activities, whether, and if so how, it provides customers with information on the GHG emissions associated with the commodities it supplies (**see DF 2.2.a**).

When disclosing, an entity may additionally consider:

When disclosing information about actions to change its portfolio of products and services to support the circular use of materials (including recovery, reuse and recycling), an entity may consider:

- extracting and refining additional materials (e.g. by-products and co-products, not previously obtained from operations);
- repurposing mining waste and tailings as products, see examples in Box 3 of the ICMM's *Mining and Metals and the Circular economy*;⁵⁷
- expanding or developing recycling businesses, including for materials with low recycling rates such as lithium or nickel; and
- introducing different metals ownership models (e.g. metal leasing rather than ownership).

When disclosing information about actions to change its portfolio of products and services, an entity may reference new products and services outside traditional metals and mining activities including:

- developing nature-based products (e.g. sustainable forestry) as an additional business line using non-operational land holdings;
- developing low- or zero-carbon electricity or fuels for sale; and
- developing carbon capture, utilisation, and storage capacity and services.

⁵⁷ International Council on Mining and Metals (ICMM), *Mining and metals and the circular economy*, 2015.

In disclosing any underlying taxonomy, tools, methodologies, and/or definitions used to classify products and services, an entity may consider disclosing its use of:

- national or international definitions (e.g. the UK Critical Mineral list⁵⁸ or the IEA's list);⁵⁹
- market-based methodologies (e.g. the CAI00+ *Expectations for Diversified Mining & Mining*);⁶⁰
- proprietary classifications or taxonomies, with details provided of underlying methodologies.

An entity with physical trading activities may consider providing GHG data on physical traded materials to customers as an action to enable change its portfolio of products and services. GHG data enables customers to identify opportunities to reduce GHG impact, modify procurement practices, and engage with key suppliers. Physical trading activities are understood as buying and selling materials, delivering them physically from producers to consumers or to processors, and/or storing, blending, or refining materials to meet customer specifications and maximise profit.

When disclosing whether each material is aligned with a low-GHG emissions, climate-resilient economy, an entity may consider describing whether each material that it explores, extracts and/or processes is a primary product, co-product, or by-product. Many materials needed for the transition are co-products or by-products of mining for other commodities, so their production is closely tied to other commodities. As demand for materials changes, there is an opportunity to profit from co-products and by-products, and to source materials from waste and tailings. There are also specific risks that an entity may consider when increasing co-products and by-products in its product portfolio:

- co-products refer to two or more materials that are produced jointly and have similar economic values, hence both will affect mining decisions. For example, lead and zinc are produced as co-products, and so a ban on lead would affect the ability of lead-zinc mines to operate at a profit; and
- by-products generally have a value that is too low to have an impact on mining decisions. For example, tellurium, which is used in photovoltaic cells, is a by-product of copper extraction and refining. The supply of, and demand for, copper therefore has a direct influence on the amount of tellurium made available.⁶¹

2.3 Policies and conditions

An entity shall disclose information about any policies and conditions that it uses or plans to use in order to achieve the **Strategic Ambition** of its transition plan.

When interpreting the Disclosure Framework for the Metals & Mining sector, an entity should consider disclosing:

- information about any policies and conditions that it uses or plans to use in relation to:
 - o the managed phase-out or adaptation of GHG-intensive facilities, products, processes, or activities; (see DF 2.3.a.ii);
 - o deforestation and land use; (see DF 2.3.a.vii);
 - o biodiversity, including reference to the mitigation hierarchy (see DF 2.3.a.ix);
 - o consultation with local and other stakeholders, including, where relevant, application of Free and Prior Informed Consent (FPIC) (see 2.3.a.x);

58) Department for Business Energy and Industrial Strategy, **UK Critical Minerals Strategy**, 2023.

59) International Energy Agency (IEA), **Critical Minerals Market Review**, 2023.

60) Climate Action 100+ (CAI00+), **Investor Expectations for Diversified Mining**, 2023.

61) Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development, **Searching for Critical Minerals? How metals are produced and associated together**, 2023.

- o the managed phase-out of GHG-intensive materials (e.g. thermal or metallurgical coal) (see DF 2.3.a.ii); and
- o transfers of GHG-intensive assets such as thermal coal mines and any associated safeguards (see DF 2.3.a.ii);
- which of its policies and conditions are part of mine-level or commodity certification schemes (see DF 2.3.a); and
- whether policies and conditions apply across all operations and the rationale for any exclusions, including for non-operated assets, joint ventures, and other minority interests (see DF 2.3.a).

When disclosing, an entity may additionally consider:

When disclosing which of its policies are part of mine-level or commodity certification schemes, an entity may provide detail on the progress towards certification, including expected timelines, and how any certification schemes are aligned to its Strategic Ambition. An entity may consider:

- the Initiative for Responsible Mining Assurance's *The Standard for Responsible Mining*;⁶²
- the Copper Mark's *The Copper Mark Criteria for Responsible Production and The Joint Due Diligence Standard for Copper, Lead, Molybdenum, Nickel and Zinc*;⁶³
- Towards Sustainable Mining's *Protocol and Frameworks*;⁶⁴ and
- ICMM's *Mining Principles: Performance Expectations*⁶⁵

Sub-Element

2.4 Financial planning

An entity shall, to the extent the financial effects of its transition plan are separately identifiable, disclose information about the effects of its transition plan⁶⁶ on its financial position, financial performance and cash flows⁶⁷ over the short-, medium-, and long-term, including information about how it is resourcing or plans to resource its activities in order to achieve the **Strategic Ambition** of its transition plan.⁶⁸

When interpreting the Disclosure Framework for the Metals & Mining sector, an entity should consider disclosing:

- its current and committed investment plans required to achieve its **Strategic Ambition**, including in relation to (see DF 2.4.a):
 - o materials defined as aligned with a low-GHG emissions, climate-resilient future;
 - o metallurgical coal; and
 - o thermal coal.

62) Initiative for Responsible Mining Assurance, **The Standard for Responsible Mining**, 2018.

63) The Copper Mark **Standards**, as of 2024.

64) Towards Sustainable Mining, **Protocols and Frameworks**, 2024.

65) ICMM, **Mining Principles: Performance Expectations**, 2022.

66) Please note that 2.4.c is not intended to cover information about the financial effects of wider climate-related risks and opportunities. Instead the focus lies on the direct and indirect effects from implementing the transition plan itself.

67) For entities in the financial sector, this should cover the financial performance of the entity itself and not its investment or lending portfolio.

68) This Sub-Element should be regarded as distinct from the Disclosure Recommendations under Sub-Element **4.2 Financial metrics and targets**. Under **2.4 Financial planning**, the focus should lie on demonstrating that the entity has integrated the transition plan into its financial planning and disclosing expected financial effects. Under Sub-Element **4.2 Financial metrics and targets**, on the other hand, the entity should disclose the financial metrics and targets that it is using to assess progress and delivery of the plan over time.

- information about how climate related (transition and physical) risks inform how the entity is resourcing, and plans to resource, exploration or development stage projects, considering pre-feasibility and feasibility studies (see DF 2.4.a);
- information about how the entity is resourcing, or plans to resource, any support provided to employees whose current skillsets, responsibilities and projects are not aligned with the climate commitments as outlined in its **Strategic Ambition** (e.g. investment for any necessary employee retraining, relocation and reassignment) (see DF 2.4.a); and
- for all current and future operations, how transition planning and plan implementation has been accounted for in capital and operating budgets. This may include how and where responsible closure planning has included aspects of transition planning and adaptation (e.g. future-proofing tailings storage facilities against physical risks post-mine closure) (see DF 2.4.b), and what resources have been assigned to address these (see DF 2.4.a).

When disclosing, an entity may additionally consider:

In determining the effects of its transition plan on its financial position, financial performance and cashflows, an entity may consider the conclusions of any scenario analysis that it has conducted. In particular, scenario analysis may be used to derive expectations or assumptions about financial effects, including revenue streams, asset values, value-at-risk measures, cost estimates of adaptation and mitigation actions, changes to cost of capital, as well as their likely timing. For example, an entity may consider how gold mining operations in different geographies are differently affected by carbon prices. GHG intensive gold mining operations in South Africa are likely to face higher operating costs than other geographies if carbon prices are implemented,⁶⁹ so an entity's transition plan may focus mitigation measures (e.g. energy efficient equipment or use of renewable energy) on any assets in South Africa.

69) S&P Global, *Climate Related Considerations in the Metals And Mining Sector*, 2020.

3 Engagement Strategy

Sub-Element

3.1 Engagement with value chain

An entity shall disclose information about any engagement activities with other entities in its value chain that it is undertaking or plans to undertake in order to achieve the **Strategic Ambition** of its transition plan.

When interpreting the Disclosure Framework for the Metals & Mining sector, an entity should consider disclosing:

- information about engagement activities that it is undertaking, or plans to undertake, in order to achieve the **Strategic Ambition** of its transition plan, which may include with its (**see DF 3.1.b**):
 - o suppliers (e.g. of consumables, reagents, equipment);
 - o transportation equipment providers and/or contracted transport providers;
 - o electricity providers and grid operator;
 - o joint venture partners; and
 - o customers or clients (e.g. downstream processing or manufacturers of finished products);
- information about its the traceability of its products (which products are sold with traceability through the value chain and how far value chain traceability extends), and how this supports engagement with suppliers and customers to achieve the **Strategic Ambition** of its transition plan (**see DF 3.1.b**); and
- information about any escalation processes or criteria in place (e.g. tender processes, certification requirements, and exclusion criteria) to ensure responsible sourcing and manage instances where engagement activities do not lead to the desired changes (**see DF 3.1.c**).

When disclosing, an entity may additionally consider:

In describing its current and planned engagement activities with its value chain, an entity may consider describing any engagement in respect of:

- joint research and development;
- purchasing requirements or supplier code of conduct;
- data collection;
- grid decarbonisation;
- development of shared standards;
- shared targets;
- offtake agreements; and
- due diligence to verify claims made in consumer communications (e.g. battery passports or mine level certification schemes).

3.2 Engagement with industry

An entity shall disclose information about any engagement and collaborative activities with industry counterparts (and other relevant initiatives or entities) that it is undertaking or plans to undertake in order to achieve the **Strategic Ambition** of its transition plan.

When interpreting the Disclosure Framework for the Metals & Mining sector, an entity should consider disclosing:

- information about engagement or collaborative activities with industry counterparts (and other relevant initiatives or entities) to scale solutions to mitigate hard-to-decarbonise processes or other novel technologies that contribute to an economy-wide transition (**see DF 3.2.c**).

When disclosing, an entity may additionally consider:

When disclosing information about engagement and collaborative activities, an entity may consider describing engagement in respect of:

- partnerships with original equipment manufacturers (OEMs) and/or industry centres of excellence to develop novel technologies or techniques;
- coal mine methane abatement;
- scaling-up carbon dioxide removal (e.g. through the carbonation of waste rock); and
- developing circular economy techniques and materials.

When disclosing information about engagement with industry counterparts, an entity may reference whether it is collaborating with smaller entities, either directly or through industry associations. A substantial amount of research and development within the sector is undertaken by large, diversified entities, while, smaller “junior” entities account for a large proportion of the sector but often have fewer resources to advance research and development.

3.3 Engagement with government, public sector, communities and civil society

An entity shall disclose information about any direct and indirect engagement activities with the government, regulators, public sector organisations, communities, and civil society that it is undertaking or plans to undertake in order to achieve the **Strategic Ambition** of its transition plan

When interpreting the Disclosure Framework for the Metals & Mining sector, an entity should consider disclosing:

- information about any direct and indirect engagement activities with government, regulators, and public sector organisations that it is undertaking, or plans to undertake, may include in relation to (**see DF 3.3.b**):
 - electricity grid mix and/or carbon intensity;
 - planning and permitting processes (e.g. reducing permitting time for new mines or processing facilities for materials aligned with a low-GHG emissions, climate-resilient future);
 - social protection for communities and workers affected by the transition and the changing climate;
 - circular economy (e.g. recycling policies);
 - adaptation and climate resilience; and
 - coal mining (e.g. related to phase-out and coal mine methane);
- information about any direct and indirect engagement activities with communities and civil society that it is undertaking, or plans to undertake, to achieve its **Strategic Ambition** and uphold high social and environmental standards. This may include engagement activities in relation to (**see DF 3.3.b**):
 - artisanal and small-scale mining (ASM) communities and cooperatives; and
 - indigenous peoples and local communities, considering Free and Prior Informed Consent (FPIC).

When disclosing, an entity may additionally consider:

Effective engagement with the full range of stakeholders and rightsholders is an integral part of responsible mining. An entity may consider industry best practice standards and guidance for stakeholder engagement and consultation, including the UN Declaration on the Rights of Indigenous People,⁷⁰ IFC Performance Standard 1.8,⁷¹ and Equator Principles EP4 Principle 5.⁷² Engagement with indigenous peoples and local communities is likely to be particularly important at the exploration and development stages, as well as during closure activities.

Abandoned coal mine methane is poorly measured but one estimate suggests it could account for almost one fifth of methane emissions from worldwide coal production.⁷³ Collaboration and knowledge sharing between entities, policymakers and regulators may advance solutions, for example the US Environmental Protection Agency's *Coalbed Methane Outreach Program*.⁷⁴

An entity may consider *The Global Standard on Responsible Climate Lobbying* which provides a framework to ensure companies' lobbying and political engagement activities are in line with the goal of restricting global temperature rise to 1.5°C above pre-industrial levels.⁷⁵

70) United Nations, **Declaration on the Rights of Indigenous People**, 2008.

71) International Finance Corporation (IFC), **Performance Standards on Environmental and Social Sustainability**, 2012.

72) Equator Principles, **EP4**, 2020.

73) International Energy Agency (IEA), **Global Methane Tracker**, 2023.

74) Environmental Protection Agency (EPA), **Coalbed Methane Outreach Program**, as of 2024.

75) Climate Lobbying, **Global Standard on Responsible Climate Lobbying**, 2022.

4 Metrics & Targets

Sub-Element

4.1 Governance, business and operational metrics and targets

An entity shall disclose information about the governance, engagement, business and operational metrics and targets that it uses in order to drive and monitor progress towards the **Strategic Ambition** of its transition plan, and report against these metrics and targets on at least an annual basis.

When interpreting the Disclosure Framework for the Metals & Mining sector, an entity should consider disclosing:

- information about any **engagement** metrics and targets that it uses in order to drive and monitor progress towards the **Strategic Ambition** of its transition plan (**see DF 4.1.b**):
 - the percentage of its value chain covered by engagement activities (by Scope 3 emissions or cost/revenue), and/or percentage of the value chain which has been engaged in relation to transition planning; and
 - the proportion of materials with downstream processing emissions (e.g. iron or, bauxite), sold to customers with externally verified GHG emissions targets (by volume or revenue);
- information about any **business and operational** metrics and targets that it uses in order to drive and monitor progress towards the **Strategic Ambition** of its transition plan, related to its portfolio of products and services (all materials) (**see DF 4.1.b**):
 - reserves, production, and revenue for each of its materials for the reporting year⁷⁶
 - the proportion of products (by volume or revenue) considered to contribute to a low-GHG emissions, climate-resilient economy;
- information about any **business and operational** metrics and targets that it uses in order to drive and monitor progress towards the **Strategic Ambition** of its transition plan, related to its coal activities (**see DF 4.1.b**):
 - current and expected coal production (volume), disaggregated by thermal and metallurgical;
 - volume of coal used in processing, disaggregated by thermal and metallurgical;
 - where an entity has physical trading activities, volume of coal traded, disaggregated by thermal and metallurgical; and
 - the proportion of coal sold (by volume or revenue) going to facilities with publicly disclosed carbon capture, utilisation, and storage plans;

⁷⁶) Disclosures should not include sensitive information that has the potential to influence market prices.

- information about any **business and operational** metrics and targets that it uses in order to drive and monitor progress towards the **Strategic Ambition** of its transition plan, related to its business operations (**see DF 4.1.b**):
 - o the percentage of energy used that is zero-carbon;
 - o amount of self-generation of renewables and the proportion used for own energy use, shared with communities, or exported;
 - o the percentage of vehicles and machinery that are low emissions and/or electric;
 - o water use intensity and/or efficiency;
 - o the area of managed land that is exposed to physical climate risks, including as a proportion of all land managed;
 - o the number of operational sites (owned, leased, and managed) in, or adjacent to, protected areas and areas of high biodiversity value , including as a proportion of all operational sites;
 - o the area of land managed for carbon and biodiversity co-benefits including as a proportion of all managed land, and the associated impact of these activities; and
 - o the area of habitat protected or restored as a proportion of the total amount of land (owned, leased, and managed) used for production activities or extractive use.

4.2 Financial metrics and targets

An entity shall disclose information about any financial metrics and targets, relevant to its business, sector and strategy, that it uses in order to drive and monitor progress towards the **Strategic Ambition** of its transition plan, and report against these metrics and targets on at least an annual basis.

When interpreting the Disclosure Framework for the Metals & Mining sector, an entity should consider disclosing:

- information about any capital expenditure and/or operating expenditure metrics and targets it uses for each material that is aligned to a low-GHG emissions, climate-resilient economy (**see DF 4.2.a**), and any underlying taxonomy, tools, methodologies, or definitions used (as defined in **2.2 Products and services**) (**see DF 4.2.c.x**);
- information about any metrics it uses to monitor the revenue generated from each material that is aligned to a low-GHG emissions, climate-resilient economy (**see DF 4.2.a**), and any underlying taxonomy, tools, methodologies, or definitions used (as defined in **2.2 Products and services**) (**see DF 4.2.c.x**);
- information about any capital expenditure and/or operating expenditure metrics and targets it uses for any coal operations, including in relation to (**see DF 4.2.a, 4.2.c**):
 - coal methane abatement;
 - thermal coal production;
 - new thermal coal mine capacity;
 - metallurgical coal production; and
 - new metallurgical coal mine capacity.

When disclosing, an entity may additionally consider:

An entity may consider referring to the Climate Action 100+'s *Net Zero Standard for Diversified Mining* which includes disclosures on financial metrics and targets.⁷⁷ This provides further detail on metrics and targets that may be used to measure capital allocation alignment with a low-GHG emissions, climate-resilient economy.

⁷⁷ Climate Action 100+ (CA100+), *Investor Expectations for Diversified Mining*, 2023.

4.3 GHG metrics and targets

An entity shall disclose information about the GHG emissions and removals metrics and targets that it uses in order to drive and monitor progress towards the **Strategic Ambition** of its transition plan, and report against these metrics and targets on at least an annual basis.

When interpreting the Disclosure Framework for the Metals & Mining sector, an entity should consider disclosing:

- information about any metrics and targets it uses for reducing absolute gross GHG emissions for Scopes 1 and 2 (**see DF 4.3.a**) and gross GHG emissions intensity for Scopes 1 and 2 (**see DF 4.3.e**) that it has set, disaggregated by each:
 - value chain stage;
 - country it has business activity in; and
 - material;
- information about any metrics and targets it uses for reducing absolute gross GHG emissions for Scope 3 (**see DF 4.3.b, 4.3.k**) and gross GHG emissions intensity for Scope 3 (**see DF 4.3.f, 4.3.k**), for each of the following GHG Protocol categories:
 - Scope 3 Category 1 (purchased goods and services);
 - Scope 3 Category 2 (capital goods);
 - Scope 3 Category 3 (fuel and energy-related activities);
 - Scope 3 Category 4 (upstream transport and distribution);
 - Scope 3 Category 9 (downstream transportation and distribution);
 - Scope 3 Category 10 (processing of sold product emissions);
 - Scope 3 Category 11 (use of sold products); and
 - Scope 3 Category 15 (investments) to capture non-operated joint ventures, subsidiaries, or affiliate entities (where an operational approach has been taken);
- information about any metrics and targets it uses for reducing absolute gross GHG emissions (**see DF 4.3.a, 4.3.b, 4.3.k**) and gross GHG emissions intensity (**see DF 4.3.e, 4.3.f, 4.3.k**) from coal, including in relation to:
 - the methodology used to measure coal mine methane;
 - methane emissions, including a disaggregation of metrics at mine-level;
 - Scope 3 Category 11 (use of sold products) from metallurgical coal; and
 - Scope 3 Category 11 (use of sold products) from thermal coal.

When disclosing, an entity may additionally consider:

When defining any Scope 1 and 2 targets at the material level, an entity may consider using lifecycle analysis, hotspot analysis, or similar tools to identify which materials, stages, and processes are the most emission intensive.

When disclosing information about the categories of Scope 3 included within its metrics and targets, an entity may consider the ICMM's *Scope 3 Emissions Accounting and Reporting Guidance* which provides a Scope 3 Category Diagnosis pathway, as well as a heatmap of Scope 3 emissions categories by type of mining company.⁷⁸ In addition, an entity may consider the ICMM's *Scope 3 Emissions Target Setting Guidance*, which provides a Scope 3 Target-Setting Framework including an improvement process for companies to grow their capabilities in setting Scope 3 targets.⁷⁹

When disclosing the measurement approach, inputs and assumptions used to measure its Scope 3 GHG emissions, an entity may refer to ICMM's *Scope 3 Emissions Accounting and Reporting Guidance*, which provides guidance for the boundaries, materiality, activity data types, emissions factors, calculation, and suggested reporting per Scope 3 category.⁸⁰ Where an entity produces iron ore and steel, it may consider using calculation models that avoid double counting between Scope 3 Category 10 (processing of sold products) and Scope 3 Category 11 (use of sold products).⁸¹

Emission sources associated with land management, land changes, and natural ecosystem changes are particularly relevant during the development of operations and/or responsible mine closure. When accounting for GHG emissions and removals, an entity may consider the GHG Protocol's *Land Sector and Removals Guidance*.⁸²

Mine-level measurement with top-down verification is appropriate given coal mine methane varies significantly due to geological and environmental factors. When disclosing mine-level methane emissions, an entity may consider:

- IIGCC's *Addressing methane emissions from fossil fuel operations*;⁸³ and
- UNEP's *International Methane Emissions Observatory 2023 Report*,⁸⁴ and the upcoming standard on measurement, reporting, and verification of methane emissions, with a focus on metallurgical coal;

When disclosing an intensity metric or target, producing entities may elect to calculate emissions intensity using the amount of commodity mined or processed. For example, the TPI's *Carbon Performance Assessment* methodology uses copper equivalency to compare commodities, however it is noted that this approach is not appropriate for all entities, including those in exploration and development.⁸⁵

4.4 Carbon credits

An entity shall disclose information about how it uses or plans to use carbon credits to achieve the **Strategic Ambition** of its transition plan, and report on the use of carbon credits on at least an annual basis.

No additional sector-specific guidance is provided for this Sub-Element.

78) Figure 7 & Table 8: International Council on Mining and Metals (ICMM), *Scope 3 Emissions Accounting and Reporting Guidance*, 2023.

79) International Council on Mining and Metals (ICMM), *Scope 3 Emissions Target Setting Guidance*, 2023.

80) International Council on Mining and Metals (ICMM), *Scope 3 Emissions Accounting and Reporting Guidance*, 2023.

81) International Council on Mining and Metals (ICMM), *Scope 3 Emissions Accounting and Reporting Guidance*, 2023.

82) Greenhouse Gas Protocol, *Land Sector and Removals Guidance (Draft for Pilot Testing and Review)*, 2022.

83) Institutional Investors Group on Climate Change (IIGCC), *Addressing methane emissions from fossil fuel operations*, 2024.

84) United Nations Environment Programme, *An Eye on Methane – The road to radical transparency: International Methane Emissions Observatory*, 2023.

85) Transition Pathway Initiative (TPI), *Carbon Performance Assessment of diversified miners: note on methodology*, 2022.

5 Governance

Sub-Element

5.1 Board oversight and reporting

An entity shall disclose information about the governance body(s) (which can include a board, committee, or equivalent body charged with governance) or individual(s) responsible for oversight of the transition plan

No additional sector-specific guidance is provided for this Sub-Element.

Sub-Element

5.2 Roles, responsibility and accountability

An entity shall disclose information about management's role in the governance processes, controls, and procedures used to monitor, manage, and oversee the transition plan, as well as how it is embedded within the entity's wider control, review, and accountability mechanisms.

No additional sector-specific guidance is provided for this Sub-Element.

Sub-Element

5.3 Culture

An entity shall disclose information about how it aligns or plans to align its culture with the **Strategic Ambition** of its transition plan.

No additional sector-specific guidance is provided for this Sub-Element.

Sub-Element

5.4 Incentives and remuneration

An entity shall disclose information about how it aligns or plans to align its incentive and remuneration structures with the **Strategic Ambition** of its transition plan.

No additional sector-specific guidance is provided for this Sub-Element.

Sub-Element

5.5 Skills, competencies and training

An entity shall disclose information about actions it is taking or plans to take to assess, maintain, and build the appropriate skills, competencies, and knowledge across the organisation in order to achieve the **Strategic Ambition** of its transition plan.

No additional sector-specific guidance is provided for this Sub-Element.

Glossary

Term	Definition
carbon capture, utilisation and storage (CCUS)	Carbon capture, utilisation and storage involves the capture of CO ₂ , generally from large point sources such as power generation or industrial facilities that use either fossil fuels or biomass as fuel. If not being used on-site, the captured CO ₂ is compressed and transported by pipeline, ship, rail or truck to be used in a range of applications, or injected into deep geological formations such as depleted oil and gas reservoirs or saline aquifers. ⁸⁶
carbon dioxide removal	Anthropogenic activities that remove CO ₂ from the atmosphere and store it durably in geological, terrestrial, or ocean reservoirs, or in products. One method of carbon dioxide removal relevant to the Metals & Mining sector is the carbonation of rocks, which may then be stored as waste in tailings, within underground mines or used as a product (e.g. basalt may be used by farmers as part soil deacidification practices). ⁸⁷
climate resilience	<p>At the entity-level: the capacity of an entity to adjust to climate-related changes, developments, or uncertainties. Climate resilience involves the capacity to manage climate-related risks and benefit from climate-related opportunities, including the ability to respond and adapt to climate-related transition risks and climate-related physical risks. An entity's climate resilience includes both its strategic resilience and its operational resilience to climate-related changes, developments, and uncertainties.⁸⁸</p> <p>At the systems-level: the capacity of interconnected social, economic, and ecological systems to cope with a hazardous event, trend, or disturbance, responding or reorganising in ways that maintain their essential function, identity, and structure. Resilience is a positive attribute when it maintains capacity for adaptation, learning, and/or transformation.⁸⁹</p>
comminution	The phase of ore processing that reduces the physical size of the ore by crushing, grinding and milling. Comminution is typically done on a mine site and uses electricity as its energy source. It accounts for 25% of final energy consumption of an average mine site and significant reductions in emissions may be achieved through efficiency and optimisation measures to comminution equipment. ⁹⁰
entity	An organisation that voluntarily chooses, or is required by law, to prepare a general purpose financial report.

86) International Energy Agency (IEA), **Carbon Capture, Utilisation and Storage**, 2023.

87) Punia, **Carbon dioxide sequestration by mines: implications for climate change**, 2021.

88) International Financial Reporting Standards (IFRS), **IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information**, 2023.

89) Intergovernmental Panel on Climate Change (IPCC), **Sixth Assessment Report, Impacts, Adaptation Vulnerability. Annex II**, 2023.

90) Engeco, **Mining Energy Consumption**, 2021.

general purpose financial reports	<p>Reports that provide financial information about a reporting entity that is useful to primary users in making decisions relating to providing resources to the entity. Those decisions involve decisions about:</p> <ul style="list-style-type: none"> (a) buying, selling, or holding equity and debt instruments; (b) providing or selling loans and other forms of credit; or (c) exercising rights to vote on, or otherwise influence, the entity's management's actions that affect the use of the entity's economic resources. <p>General purpose financial reports include—but are not restricted to—an entity's general purpose financial statements and sustainability-related financial disclosures.⁹¹</p>
greenhouse gases (GHGs)	<p>The six gases listed in the Kyoto Protocol: carbon dioxide (CO₂); methane (CH₄); nitrous oxide (N₂O); hydrofluorocarbons (HFCs); perfluorocarbons (PFCs); and sulphur hexafluoride (SF₆).⁹²</p>
just transition	<p>The just transition involves anticipating, assessing, and addressing the social risks and opportunities of the transition to a low-GHG emissions and climate-resilient development, as well as ensuring meaningful dialogue and participation for impacted groups (including workers, communities, supply chains, and consumers) in transition planning.</p>
less mature technologies	<p>Technologies that may not be available and/or are economically unviable. In this guidance, it is suggested that entities consider use the IEA's technology readiness levels (TRL) to define the maturity of technologies.⁹³</p>
material information	<p>In the context of sustainability-related financial disclosures, information is material if omitting, misstating, or obscuring that information could reasonably be expected to influence decisions that primary users of general purpose financial reports make on the basis of those reports, which include financial statements and sustainability-related financial disclosures and which provide information about a specific reporting entity.⁹⁴</p>
mature technologies	<p>Technologies that are available and economically viable today. In this guidance, it is suggested that entities consider use the IEA's technology readiness levels (TRL) to define the maturity of technologies.⁹⁵</p>
metallurgical coal	<p>A primary ingredient in steelmaking that includes coking coal, semi-soft coal, and pulverised coal injection coal. Metallurgical coal is mainly used for making coke, a coal-based fuel produced by heating coking coal in the absence of oxygen, which is used in steelmaking. Coke may also be used to produce carbides, ferroalloys, and other compounds.⁹⁶</p>

91) International Financial Reporting Standards (IFRS), **IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information**, 2023.

92) Greenhouse Gas Protocol, **A Corporate Accounting and Reporting Standard**, 2015.

93) International Energy Agency (IEA), **ETP Clean Energy Technology Guide**, 2023.

94) International Financial Reporting Standards (IFRS), **IFRS S1 General Requirements for Disclosure of Sustainability-related Financial Information**, 2023.

95) International Energy Agency (IEA), **ETP Clean Energy Technology Guide**, 2023.

96) International Energy Agency (IEA), **Coal 2022: Analysis and forecast to 2025**, 2022.

natural environment	(a) Plants, wild animals and other living organisms; (b) their habitats; and (c) land (except buildings or other structures), air, and water; and the natural systems, cycles, and processes through which they interact.
reserves	The economically minable part of a measured and/or indicated mineral resource. ⁹⁷
tailings	A common by-product of the metals and minerals recovery process. It usually takes the form of a liquid slurry made of fine metal or mineral particles and water – created when mined ore is crushed and finely ground in a milling process. If not managed properly, tailings can have acute and chronic impacts. Acute impacts occur where tailings storage facilities fail and flowable tailing materials can inundate the surrounding environment and even lead to loss of life. Chronic impacts may occur, with pollution from effluent and dust emissions being potentially toxic to humans, animals or plants. ^{98,99}
thermal coal	Coal that is burned to generate steam for the production of electricity and is used in coal-fired electricity generation. Outside electricity, thermal coal is used in other applications including cement production and industrial or residential heating purposes. ¹⁰⁰
value chain	The full range of activities, resources and relationships related to a reporting entity's business model and the external environment in which it operates. A value chain encompasses the activities, resources, and relationships an entity uses and relies on to create its products or services from conception to delivery, consumption, and end-of-life. Relevant activities, resources and relationships include those in the entity's operations, such as human resource; those along its supply, marketing, and distribution channels, such as materials and service sourcing and product and service sale and delivery; and the financing, geographical, geopolitical, and regulatory environments in which the entity operates. ¹⁰¹

97) Canadian Institute of Mining, Metallurgy and Petroleum, **CIM Definition Standards for Mineral Resources & Mineral Reserves**, 2014.

98) International Council on Mining and Metals (ICMM), **About Tailings**, 2024.

99) Global Tailings Review, **About Tailings**, as of 2023.

100) International Energy Agency (IEA), **Coal 2022: Analysis and forecast to 2025**, 2022.

101) International Financial Reporting Standards (IFRS), **IFRS S2 Climate-related Disclosures**, 2023.



CONTACT US

secretariat@transitiontaskforce.net

transitiontaskforce.net