



Towards Sustainable Mining



Climate Change Protocol



CLIMATE CHANGE PROTOCOL

A Tool for Assessing Climate Change Performance

Purpose

The purpose of this protocol is to facilitate continual performance improvements in the mining sector related to the management of climate-related risks and opportunities, including associated mitigation and adaptation strategies, target-setting and reporting.

Implementation of this protocol is intended to support companies, at both the corporate and facility levels, in advancing the goals of the Paris Agreement.¹ The Paris Agreement aims to strengthen the global response to the threat of climate change by keeping a global temperature rise this century at well below 2°C above pre-industrial levels and by pursuing efforts to limit the temperature increase even further, to 1.5°C.

This protocol aligns with the Recommendations of the Task Force on Climate-related Financial Disclosures, which aims to improve the ability to appropriately assess and price climate-related risk and opportunities.²

Minerals Council of Australia (MCA) members have the ambition to achieve net-zero emissions by 2050 in support of the Paris Agreement.

The protocol aligns with the MCA's Climate Action Plan, specifically concerning the following:

- Activity 4.1 – Economics of net-zero emissions
- Activity 5.1 – Climate disclosure forum
- Activity 5.2 – Align disclosure practices
- Activity 6.1 – Assist climate planning
- Activity 10.1 – International climate agenda

The protocol supports the achievement of the UN Sustainable Development Goals 7 – Clean energy, 9 – Industry innovation and infrastructure, 12 – Responsible Production and Consumption and 13 – Climate Change.

Target-setting encompasses companies setting goals, ambitions, pledges and commitments

Performance Indicators

To assess performance and measure progress towards achieving continual performance improvement in the management of climate-related risks and opportunities, the Climate Change Protocol specifies criteria associated with:

- Corporate climate change management
- Facility climate change management

As with any performance assessment tool, professional judgment is required in assessing alignment with each indicator and associated criteria. Application of this protocol will therefore require a level of expertise in auditing, systems assessment, energy and greenhouse gas (GHG) emissions management, physical climate impact management and climate change adaptation, as well as relevant regulatory regimes and requirements.

¹ United Nations. 2015. [Paris Agreement](#).

² Task Force on Climate-related Financial Disclosures. 2017. [Recommendations of the Task Force on Climate-related Financial Disclosures](#).

This protocol is a tool to assess the level of implementation of climate change management practices in support of the TSM initiative. While it is not, of itself, a guarantee of the effectiveness of climate change management activities, it is intended to create the awareness, practice and corporate culture needed to achieve success in this area and support continual improvement in the overall quality of voluntary reporting outcomes.

Scoring against each indicator is generally cumulative, except where criteria is superseded at the higher level.

INDICATOR 1: CORPORATE CLIMATE CHANGE MANAGEMENT

Purpose

To confirm that commitments, governance and processes are in place at the board and management levels to support the consideration of climate change implications in business strategy. This indicator is to be completed at the corporate level.

Assessment Criteria

Level	Criteria
C	The company does not meet all Level B criteria.
B	<ul style="list-style-type: none"> A corporate action plan has been developed to meet all requirements for a Level A. Data on Scope 1 and 2 GHG emissions is maintained.
A	<ul style="list-style-type: none"> There is a demonstrated corporate climate change strategy that is supported by defined actions, including the integration of the strategy into business planning for existing activities and in considerations for new projects. Board and management structures, accountabilities, responsibilities and reporting processes related to the governance of climate-related risks and opportunities are in place. Material climate-related risks and opportunities and their impact on the company's businesses, strategy and financial planning are identified, assessed and managed. Materials that demonstrate the above criteria are publicly reported on an annual basis.
AA	<ul style="list-style-type: none"> There is a demonstrated corporate commitment to climate action that is consistent with the ambition to limit global warming to well below 2°C (above pre-industrial levels), with short- and long-term targets and actions planned to achieve these commitments. Performance is measured against stated targets in Level AA Criterion #1. Processes for identifying, assessing and managing material climate-related risks and opportunities are integrated into the company's risk management approach. The resilience of the business strategy has been considered, taking into consideration different climate-related scenarios, including high- and low-warming scenarios. The impacts of material climate-related risks and opportunities identified on additional aspects of business and strategy are identified, assessed and managed. There is a demonstrated understanding of how the company's strategic investments contribute to societal climate change resiliency and the low carbon economy. Procurement and supply chain management practices demonstrate alignment with the corporate climate change strategy.

Level	Criteria
AA	<ul style="list-style-type: none"> • The corporate climate change strategy includes at least two of the following elements: <ul style="list-style-type: none"> – Planned or actual investments in climate action (e.g., research and development, energy performance improvements, clean energy projects) that will lead to measurable improvements in climate change mitigation or adaptation – Key performance indicators related to the implementation of the climate change strategy assigned to relevant corporate employees, with internal company tracking on at least a quarterly basis – A range of potential carbon price scenarios used when developing strategies or evaluating and making decisions on projects – Opportunities for offsets (where used) that benefit communities of interest evaluated and, where feasible, prioritised. • Materials that demonstrate the above criteria are publicly reported on an annual basis.
AAA	<ul style="list-style-type: none"> • The corporate climate change strategy includes all of the elements outlined in Level AA Criterion #8. • There are demonstrated corporate commitments: <ul style="list-style-type: none"> – Corresponding with societal ambitions to achieve net-zero emissions by 2050, with short- and long-term targets and actions planned to achieve these commitments – That future major capital allocation decisions will consider alignment with societal ambitions to achieve net-zero emissions by 2050 – To contribute to Scope 3 GHG emissions reductions. • Active partnership is pursued with customers to manage the GHG emissions embodied in commodities purchased. • Short- and long-term actions to achieve stated targets in Level AA Criterion #1 and Level AAA Criterion #2(a) have been, or are on track to be, met on the timescale identified, or corrective actions have been identified and are being implemented. • In jurisdictions without a carbon pricing regime, the company applies an internal carbon price in standard financial analyses. • Materials demonstrating the above criteria are publicly reported on an annual basis.

INDICATOR 2: FACILITY CLIMATE CHANGE MANAGEMENT

Purpose

To confirm that systems are in place at the facility level to manage energy, GHG emissions, physical climate impacts and adaptation.

Assessment Criteria

Level	Criteria
C	The facility does not meet all Level B criteria.
B	<ul style="list-style-type: none"> • A basic energy use and GHG emissions management system has been established that includes: <ul style="list-style-type: none"> – A demonstrated senior management commitment to manage energy use and GHG emissions, with assigned responsibility to a function and/or individual at the facility level – Identification and disaggregation of significant sources of energy consumption and GHG emissions – Identification and estimation of significant sources of non-energy GHG emissions. • The facility has conducted some analyses related to physical climate impacts and adaptation. • The facility has developed an action plan to meet all requirements for Level A.
A	<ul style="list-style-type: none"> • An energy and GHG emissions management system is established that includes: <ul style="list-style-type: none"> – A data collection and monitoring process that is appropriate for the energy use and GHG emission sources on site – Clear definition of roles and responsibilities for managing energy and GHG emissions performance – Operator awareness and understanding of parameters influencing energy performance and operator actions to optimise system energy performance for significant energy uses or GHG emission sources – Consideration of energy and GHG emissions in business planning, including design criteria, where appropriate – An annual management review. • A process for the management of physical climate impacts and adaptation is established that includes: <ul style="list-style-type: none"> – Assessment and identification of potential physical climate impacts, with a review of this analysis scheduled at predetermined intervals – Consideration of the risks resulting from potential physical climate impacts in relevant facility-level decision-making – Identification, prioritisation and implementation through business planning of adaptation measures that respond to the identified physical climate impacts. • A process is in place to promote awareness of climate change mitigation and adaptation, including relevant corporate commitments and facility-level targets, to employees and contractors. • The facility gauges the level of importance of climate change mitigation and adaptation in relation to relevant or affected COI and engages as appropriate.

Level	Criteria
AA	<ul style="list-style-type: none"> • The facility collaborates with COI that are interested in climate change, as appropriate. • The energy and GHG emissions management system has undergone an internal or external audit.
AAA	<ul style="list-style-type: none"> • The facility applies three or more of the following leading practices: <ul style="list-style-type: none"> - Key performance indicators related to the reduction of energy use or GHG emissions are assigned to relevant functions and/or employees - Offsets (where used) are integrated into the management system - The energy and GHG emissions management system is applied to the full lifecycle of facility activities, including in relation to suppliers, customers and other third parties - Active partnership is pursued with other organisations or COI to address physical climate impacts and adaptation management, with roles and responsibilities assigned to support this commitment - Community, cultural or traditional knowledge is considered in climate impact assessments and in the design of adaptation measures.

APPENDIX 1: FREQUENTLY ASKED QUESTIONS

1. What are Scope 1, Scope 2 and Scope 3 GHG emissions?

Scope 1 emissions are the total global direct emissions from sources owned or controlled by the reporting company or facility, including stationary combustion, mobile combustion, process emissions and fugitive emissions.

Scope 2 emissions are indirect GHG emissions that the company or facility has caused through its consumption of energy in the form of electricity, heat, cooling or steam.

Scope 3 emissions are indirect emissions that arise through a company's or a facility's activities from sources that are owned or controlled by others. For example, Scope 3 emissions are associated with the transportation of an end product, corporate travel, or the emissions produced in the manufacturing of an input to the main production process.

Scope 1, 2 and 3 definitions should be considered equivalent to the definitions provided by the [National Greenhouse and Energy Reporting Scheme](#).

2. What are 'material climate-related risks and opportunities'?

Company reporting should include a description of how they assessed the materiality of their emissions. Further guidance on determining materiality can be found at the links below.

Climate Disclosure Standards Board. 2018. [Materiality and Climate-related Financial Disclosures](#).

Taskforce on Climate-related Disclosures. 2018. [TCFD Materiality and Climate-related Financial Disclosures, Position Paper](#).

The [Clean Energy Regulator](#) also provides guidance on materiality in the reporting of GHG emissions. See Section 5.3.5: Setting materiality.

3. What types of commitments can be made at the corporate level with regard to climate change?

There are many types of commitments that can be made at the corporate level with regard to climate change. These include, but are not limited to:

- Commitments that are framed as goals, pledges, ambitions, aspirations or targets
- Intensity targets that allow for total emissions to increase with organic growth or acquisitions made by the company. They can be useful for evaluating the efficiency of a company's operations and processes
- Absolute emission targets that impose on the company a level of reduction that does not depend on performance
- Carbon neutrality targets that commit the company to achieving net-zero emissions by implementing internal strategies (e.g., improving operational efficiencies, purchasing renewable energy) or external measures (e.g., investing in carbon offset projects, investing in research and development of carbon-reduction technologies).

4. What is a carbon offset?

A carbon offset is a unit of carbon dioxide equivalent (CO₂e) that is reduced, avoided or sequestered to compensate for emissions occurring elsewhere (e.g., at a mine or smelter). Offsets work in a financial system where, instead of reducing its own carbon use, a company can comply with emissions caps by purchasing an offset from an independent organisation that completed and certified an emissions reduction, avoidance or sequestration project. For the purpose of TSM, an offset must be independently verified by an accredited body, fungible and able to pass a credible additionality test.

In Australia, carbon offsets should be eligible offsets as per [Climate Active](#) (voluntary) and the [Carbon Credits \(Carbon Farming Initiative\) Act 2011](#), Part 3 — Eligible offsets projects.

5. What are net-zero emissions?

On a global scale, meeting the ambition to limit global warming to well below 2°C (above pre-industrial levels) by 2050 requires the global community to strike a balance between anthropogenic emission sources and removals via sinks. Net-zero emissions (also referred to as carbon neutrality) means that GHG emissions released into the atmosphere are balanced by an equivalent reduction elsewhere.

For more information, see:

WEF. 2020. [What's the difference between carbon negative and carbon neutral?](#)

IETA. 2020. [IETA Council Guidance on Net Zero Climate Ambition](#).

UNFCCC. 2021. [A beginner's guide to climate neutrality](#).

6. Can corporate disclosures meet the criteria for facility-level reporting?

Corporate disclosures can address both corporate and facility-level reporting requirements, as long as corporate reporting includes all facility-level reporting requirements outlined in the protocol.

7. What types of commitments can be made to contribute to Scope 3 emissions reductions?

Commitments to contribute to Scope 3 GHG emissions reductions can be expressed in absolute or intensity terms. Examples of commitments or initiatives could include:

- Development of products and processes that reduce other parties' Scope 1 GHG emissions
- Commitment to promoting the adoption of emissions reduction targets among a company's suppliers or customers
- Elimination or reduction of GHG-intensive inputs
- Adoption of a best practice in the sector
- Increased use of reusable materials.

For more information, see:

Science Based Targets, Gold Standard, Navigant. 2018. [Value Change in the Value Chain: Best Practices in Scope 3 Greenhouse Gas Management](#).

Science Based Targets. 2020. [Science-Based Target Setting Manual. Version 4.1](#).

8. What are some examples of 'additional aspects of business and strategy'?

Examples of 'additional aspects of business and strategy' in the context of Indicator 1, Level AA, of this protocol include: products and services, the supply and value chain, adaptation and mitigation actions, investment in research and development and financial planning, among other relevant areas.

9. In companies where procurement is not managed at the corporate level, can facility procurement and supply chain practices be used to demonstrate alignment with the corporate climate change strategy?

Yes. In cases where the corporate level does not manage most aspects of procurement and supply chain, facility-level practices can be used to demonstrate alignment with the corporate change strategy.

10. What is an internal carbon price?

An internal carbon price (also known as a shadow carbon price) is the application of a designated carbon price for integration into standard financial analyses. The carbon price is treated as a real cost, even though such a cost may not be incurred. In some cases, companies may actually collect fees from their own internal carbon price and allocate this revenue towards projects that contribute to meeting the company's GHG emissions reduction commitments.

For more information, see:

Center for Climate and Energy Solutions. 2017. [The Business of Pricing Carbon](#).

UN Global Compact. 2015. [Executive Guide to Carbon Pricing Leadership](#).

11. What types of guidance exist for corporate climate-related disclosures?

The Task Force on Climate-related Financial Disclosures (TCFD) and the Carbon Disclosure Project (CDP) provide detailed guidance on the implementation of their respective disclosure criteria.

'Are You Climate Ready?' (AYCR) is a systems approach embedded with useful tools that can provide companies with feedback to self-assess their environmental management systems against the recommendations of the TCFD. The AYCR's four core elements include

- A personal assessment to support employees in understanding the importance of climate readiness
- Support for leveraging the value of an environmental management system to address the TCFD thematic areas of governance, strategy, risk management, and metrics and targets
- Connection between the business and environmental objectives from their environmental management system to the UN Sustainable Development Goals and Project Drawdown and
- Feedback on patterns and trends to identify strengths and weaknesses with insight on opportunities.

More information can be found at the links below:

- TCFD. 2017. [Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures](#).
- CDP. 2020. [Guidance for Companies](#).
- [AreYouClimateReady.com](#)

Other useful references include:

- [Carbon Disclosure Standards Board](#)
- [TCFD Knowledge Hub](#)
- World Business Council on Sustainable Development – [The Reporting Exchange](#)
- Carbon Disclosure Project (CDP)
- [Sustainability Accounting Standards Board](#)
- [Integrated Reporting](#)
- Australian Prudential Regulation Authority (APRA)
- Australian Securities and Investments (ASIC)
- Clean Energy Regulator (NGER, Safeguard Mechanism, CERT)

12. What types of guidance exist to support the assessment of the climate-related resilience of a business strategy?

This criterion refers to the broader business or corporate strategy at play and how it considers the potential impacts of climate change on a company's ability to implement the planned strategy. The TCFD advises organisations to describe how resilient their strategies are to climate-related risks and opportunities, taking into consideration a transition to a lower-carbon economy consistent with a 2°C or lower warming scenario and, where relevant to the organisation, scenarios consistent with increased physical climate-related risks. This includes considerations around:

- Whether an organisation believes their strategies may be affected by climate-related risks and opportunities
- How these strategies might change to address such potential risks and opportunities
- The climate-related scenarios and associated time horizons considered.

The TCFD's materials, listed below, provide detailed guidance on conducting scenario analyses that can be used by companies to better understand the resiliency of their business or corporate strategies.

For more information, see below:

TCFD. 2017. [Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures](#).

TCFD. 2017. [Recommendations of the Task Force on Climate-related Financial Disclosures](#).

It should also be noted the Australian Government has in place a [National Climate Resilience and Adaptation Strategy](#).

13. How can a company conduct an effective scenario analysis?

The TCFD has developed a technical and guidance supplement, referenced below, that provides detailed guidance on the application of scenario analyses.

For more information, see below:

TCFD. 2017. [The Use of Scenario Analysis in Disclosure of Climate-related Risks and Opportunities](#).

TCFD. 2020. [Guidance on Scenario Analysis for Non-Financial Companies](#).

14. In cases of mergers or acquisitions, how should companies adapt their climate change strategies and commitments?

When purchasing an asset, a company will add the emissions from that asset to their overall emissions calculations. When selling an asset, a company should subtract those emissions from their overall emissions calculations. These changes in the company's overall emissions profile should then be reflected in the company's climate change strategy and commitment as appropriate.

15. How can a company demonstrate an understanding of how the commodities and products in which it invests or that it uses contribute to societal climate change resiliency and the low-carbon economy?

To meet this criterion, a company's reporting should describe how it contributes to societal climate change resiliency and the low-carbon economy through the commodities and products that it produces or uses. For example, a company could explain how its investments in certain battery metals support the transition to a low-carbon economy by meeting demand for electric vehicles.

16. How can corporate GHG reduction commitments align with the commitment to limit global warming to well below 2°C (above pre-industrial levels)?

The Paris Agreement, which entered into force in November 2016, aims to strengthen the global response to the threat of climate change by keeping a global temperature rise this century to well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5°C. The Intergovernmental Panel on Climate Change (IPCC) is a leading authority on emissions scenarios and may serve as a valuable resource for companies to use in assessing their emissions reduction targets. Other resources are outlined below. As this is an evolving field, members seeking additional guidance should reach out to the MCA for further support.

Note that the Paris Agreement does not specify the period in history that should be considered 'pre-industrial'. The IPCC *Special Report on Global Warming of 1.5°C* uses the reference period of 1850–1900 to represent pre-industrial temperatures.

For more information, see below:

United Nations Climate Change. 2020. [The Paris Agreement](#).

Science Based Targets. 2020. [What Is a Science Based Target?](#)

Science Based Targets. 2020. [SBTi Criteria and Recommendations](#).

IPCC. 2019. [Special Report on Global Warming of 1.5°C](#).

17. How can companies apply carbon price scenarios in their strategic development and decision-making processes?

For guidance on applying carbon price scenarios, see the following resources:

CDP. 2017. [Putting a Price on Carbon: Integrating Climate Risk into Business Planning](#).

Ecofys, The Generation Foundation, and CDP. 2017. [How-to Guide to Corporate Internal Carbon Pricing – Four Dimensions to Best Practice Approaches](#).

United Nations Global Compact. 2015. [Executive Guide to Carbon Pricing Leadership: A Caring for Climate Report](#).

Center for Climate and Energy Solutions. 2017. [The Business of Pricing Carbon](#).

18. What types of strategic investments could contribute to societal climate change resiliency and the low-carbon economy?

A company's understanding of how its strategic investments contribute to societal climate change resiliency and the low-carbon economy can be demonstrated through the following:

- Decisions around the commodities in which the company invests (e.g., metals used in clean energy technologies for emissions reduction)
- High-impact climate-related initiatives (e.g., investments in technological innovations that achieve significant emissions reductions).

19. What is an annual management review?

Annual management reviews are intended to ensure continual improvement by evaluating the status of actions from the previous management review and the effectiveness of the energy and GHG emissions management systems in place. The management review process should identify opportunities for improvement and describe associated action plans. It should identify and evaluate the potential significance of changes that have occurred since the previous management review that are relevant to energy and GHG emission, including

- Changes to legal requirements, standards and guidance, industry best practices and commitments to COI
- Changes in mine operating conditions (e.g., production rate) or site environmental conditions
- Changes outside the mine property that may influence the nature and significance of potential impacts resulting from the facility on the external environment or vice versa.

The management review should also provide a summary of significant issues related to the overall performance of the facility and its energy and GHG emissions management system, including compliance with legal requirements, conformance with standards, policies and commitments, and the status of corrective actions.

20. What are communities of interest (COI)?

According to the *TSM Indigenous and Community Relationships Protocol*, COI include all individuals and groups who have an interest in, or believe they may be affected by, decisions regarding the management of operations. Facility COI may include, but are not restricted to:

- Indigenous peoples
- Community members
- Under-represented groups
- Employees
- Contractors/suppliers
- Neighbours
- Local environmental organisations and other non-governmental organisations (NGOs)
- Local governments and institutions.

Other COI may include the following:

- Suppliers
- Customers
- Regional or national environmental organisations and other NGOs
- Governments and relevant agencies
- The financial community
- Shareholders.

While the TSM protocol is designed to measure performance at the facility level, companies should identify COI with an interest in their operations beyond the local level. For example, shareholders or downstream users of mined products (e.g. jewellery manufacturing) may have an interest in the environmental and social performance of a facility. Furthermore, a company may engage with suppliers to understand the practices that are employed throughout their supply chain (e.g., feedstock supplied to an operation). The way in which a facility engages with different COI will vary depending on the context.

21. How can facilities engage or collaborate with COI on climate change management?

Some examples of the ways a facility can involve COI in climate change management include:

- Engagement of COI in the development of a facility's physical climate impact assessment and in the identification and prioritisation of adaptation measures
- Effective communication of a facility's approach to managing physical climate impacts and adaptation
- Sharing of information and analysis on local physical climate impacts
- Support for local or regional COI to respond to potential climate impacts (e.g., infrastructure to address future water scarcity, natural disaster planning).

22. What is an 'internal or external audit'?

An audit is a formal, systematic and documented examination of conformance with explicit, agreed-upon, prescribed criteria. Audits evaluate and report on the degree of conformance with stipulated criteria based on the systematic collection and documentation of relevant evidence. Audits involve some degree of judgement but are not designed to determine the root cause of deficiencies or to evaluate management system effectiveness. Audits can be conducted by internal or external professionals.

- An **internal audit** is conducted by employees of the company with appropriate knowledge and competencies. These employees must be independent, impartial and objective with respect to the management of the facility being audited. For example, they could work at another facility or at the corporate level
- An **external audit** is conducted by auditors that are external to the company. These auditors maintain an objective viewpoint throughout the audit process to ensure that findings and conclusions are based only on the evidence.

Facilities can also meet audit criteria by demonstrating that an evaluation of effectiveness or an independent review has been conducted:

- An **evaluation of effectiveness** is an assessment of whether the management system is achieving its intended results, and it goes beyond determining whether a criterion has been met. It considers both the extent to which the company has completed its planned activities and the extent to which it has achieved performance objectives and indicators
- An **independent review** consists of commentary, advice and recommendations that are independent, objective and expert in nature. Such recommendations are meant to assist in identifying, understanding and managing risks. The intention or spirit of the term 'independent' is that the reviewer(s) should not be directly involved in the design or operation of the particular facility. Where a potential conflict of interest exists, it should be identified and declared. For example, it is acceptable to have an independent reviewer who is employed by the same company, provided the definition of 'independent' is met. This is further reinforced by maintaining a clear understanding that an independent reviewer may need to abstain from a discussion or withhold an opinion when a conflict of interest may apply. This flexibility allows the independent review process to maximise the use of appropriately qualified reviewers, understanding that there may be a limited pool of such qualified individuals available.

23. What are examples of non-energy GHG emissions?

Some examples of non-energy GHG emissions include mining-related fugitive methane (e.g., from gassy coal seams) and the acidification of carbonate ore. It is also possible that a facility has no significant sources of non-energy GHG emissions. Facility reporting should include a description of how the significance of their non-energy GHG emissions was assessed.

24. What is independent assurance?

Independent assurance can be demonstrated through an external audit or another form of third-party verification.

- An audit is a formal, systematic and documented examination of conformance with explicit, agreed, prescribed criteria. Audits evaluate and report on the degree of conformance with stipulated criteria based on the systematic collection and documentation of relevant evidence. Audits involve some degree of judgement but are not designed to determine the root cause of deficiencies or to evaluate management system effectiveness. Audits can be conducted by internal or external professionals. An external audit is conducted by auditors that are external to the company being audited. These auditors maintain an objective viewpoint throughout the audit process to ensure that findings and conclusions are based only on the evidence
- Third-party verification is an accredited and independent process to ensure that the information being assured is accurate and adheres to a specific set of criteria (e.g., *ISO 14064-3: Specification with guidance for the verification and validation of greenhouse gas statements*).

25. How long is an audit or independent assurance valid?

Independent assurance is valid for three years for the purposes of TSM.

26. Can regional assessments be used to identify potential physical climate impacts at the facility level?

Yes. Where there is regional information available or where a company operates multiple facilities in the same region, it is appropriate to conduct a single regional assessment of potential physical climate impacts and then consider these risks in decision-making and in the adaptation strategies to be employed at each facility.

27. How can a facility demonstrate efforts to engage with COI on climate change mitigation and adaptation?

At Level A, a facility is tasked with gauging the level of importance of climate change mitigation and adaptation for COI and then engaging as appropriate. If COI prove interested in engaging with climate change issues, then facilities can provide evidence of this engagement (e.g., meeting records). In other cases, the facility may find that climate change is not a priority issue for COI. However, the facility will still need to demonstrate that it has made efforts to gauge the level of importance of the issue with COI. Some examples include the following:

- Evidence that COI were informed about opportunities to engage on climate change during the course of other regular engagement activities (e.g., meeting agenda, meeting minutes)
- Evidence that the interests and attributes of COI have been recorded (as required in the *TSM Indigenous and Community Relationships Protocol*) and that climate change has not been identified as a key issue for any COI
- Evidence that the facility has conducted proactive outreach to COI that they think might have an interest in climate change (e.g., environmental groups, local authorities).

28. How can a facility consider the level of risk associated with a potential physical climate impact in the identification of adaptation measures?

The facility must conduct physical impacts climate modelling that includes, at a minimum, rainfall, extreme weather and temperature events at the facility and at other sites relevant to operations (e.g., ports, water sources, etc.). Risks and opportunities resulting from these physical impacts should be assessed, and, where possible, estimates should be assessed for both the costs of implementation and non-implementation of these mitigation measures.

29. What types of climate scenarios should be used in a facility's assessment of its physical climate vulnerabilities and risks?

The Mining Association of Canada's *Guide on Climate Change Adaptation for the Mining Sector* provides guidance on characterising future climate, selecting future climate projections, and assessing physical climate vulnerabilities and risks.

30. Can offsets be used to meet emissions reduction performance targets?

Yes. Emissions reduction performance targets can be met by a combination of on-site reductions and offsets, including performance credits. However, if offsets have been used to meet targets, the percentage and source of offsets used must be clearly documented, and their use should not exceed any regulatory caps that may be in place for a facility.

31. Do targets need to apply to the entire facility?

Targets do not need to apply to the entire facility. Some targets may apply to equipment, while others may address the energy consumption of certain departments, training or additional measuring and monitoring.

32. Can a facility with distinctly different production processes set separate energy and GHG emissions performance targets?

Yes. A facility can set different performance targets for each production process, particularly when a facility uses intensity-based targets. For example, a single indicator may not be sufficient in the case of an open pit facility that is comprised of the pit and a concentrator, or where smelters are processing an increasing amount of recycled material. It may be necessary to have multiple targets at a single facility where the dynamics of the production processes are so different that one common target is not adequately representative nor a consumption driver for each production process.

33. Where regulation mandates a specific performance target for a facility, can this target be used for the purposes of Indicator 3?

Yes, targets mandated by regulation can be used by sites as the performance target set in this indicator.

34. What type of information on physical climate impacts needs to be publicly reported?

At a minimum, the facility should publish a summary of its projections of future climate conditions, an assessment of potential physical climate impacts that could have direct or indirect impacts off site and any plans or actions taken to manage these identified risks. Particular attention should be paid to providing information of relevance to local COI. This could be included in sustainability, TCFD reporting or other relevant public reporting.

35. What are material Scope 3 GHG emissions, and how can they be calculated?

For the purpose of this protocol, facilities must define criteria to determine whether a particular source of Scope 3 GHG emissions is material to their management system. Where this definition is made at the corporate level, facilities can use corporate definitions and information to respond to this criterion. Guidance on calculating Scope 3 GHG emissions and determining materiality can be found in the following reference material:

Greenhouse Gas Protocol. 2013. [*Technical Guidance for Calculating Scope 3 Emissions*](#).

Chartered Professional Accountants Canada. 2019. [*Disclosing the Impact of Climate Change: A Process for Assessing Materiality*](#).

Task Force on Climate-related Financial Disclosures. 2017. [*Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures*](#).

36. What types of targets can be used to assess a company's performance on energy as it relates to Scope 1 and 2 GHG emissions?

Informed by any relevant corporate commitments, a facility should evaluate opportunities to set performance targets related to Scope 1 and 2 GHG emissions. A facility may choose to set one or more of the following types of performance targets:

- A *volume target* refers to an absolute amount of energy consumed or carbon dioxide equivalent (CO₂e) emitted by the facility. Such targets are independent of production. Typically, volume targets are defined relative to current or historical data (e.g. 5% reduction from 2015 baseline) but may also be set against business-as-usual projections.
- An *intensity target* refers to the ratio of consumption or emissions relative to production. This is often referred to as 'normalising' the data. Examples include emissions or energy use per tonne of copper cathode produced or per tonne of ore processed.
- An *activity-based target* is an established target where future energy consumption or GHG emissions will be reduced or avoided due to a specific activity. Such targets could include initiatives or projects that lead to energy not being consumed that would otherwise have been consumed if the project had not been implemented.
- A *control target* establishes a level or measure of the effectiveness of a control over an activity that is linked to either the consumption of energy or the release of GHGs. A control may include operational limits on production equipment or administrative requirements on various mining activities. Examples include:
 - Conformance with operational limits for unit operations that are key consumers of energy or emitters of GHG emissions (e.g. 100% conformance with operating within the upper and lower temperature limits in a dryer)
 - Compliance with an administrative control (e.g. 95% compliance with a no-idle policy)

As Scope 2 emissions are associated with third-party electricity generation, facilities are deemed to have addressed these emissions through management of their electricity use.

37. How can a facility that is not in full operation set an appropriate performance target?

It is not mandatory for facilities to implement TSM prior to entering full operation. Should facilities wish to implement TSM prior to reaching full operation, one approach is to set an activity-based target. For example, by 2025, the facility will have implemented energy and GHG performance improvement projects that provide 1,500 GWh/year of energy savings or 250 CO₂e/year of GHG reductions. In another example, the factory could show that 30% of vehicles or 50% of lighting fixtures have been swapped for more energy-efficient models.

38. What should be considered when setting a performance target?

When selecting targets, environmental, economic, and social issues should be taken into consideration. A facility may want to consider:

- Relevant corporate commitments
- Financial criteria and priorities
- Alternative energy sources
- Maintenance and infrastructure needs
- Operational requirements and constraints
- Quality and appropriateness of energy resources
- Environmental impacts

- Safety and health issues
- Available human and technical resources
- Energy management system, including areas of significant use and drivers
- Life of mine
- Previous energy performance
- Alignment with stated goals and objectives
- Energy and GHG emissions reductions.

Targets should be:

- Ambitious, to commit the organisation to continual improvement
- Realistic, so that they can be achieved within specific time limits
- Specific and measurable.

39. How can a facility demonstrate progress towards energy and GHG emissions performance targets?

There are a variety of ways in which a facility can demonstrate progress towards its performance targets. One option is through multi-year targets. A multi-year target is an energy or GHG emissions target that specifies certain performance over a defined number of years (e.g., a 20% reduction over a three-year period). The target may make sense for a facility that is implementing a multi-year capital plan or infrastructure upgrade that will result in emissions reductions or energy savings only when the final plan is complete. In such a case, it is difficult to determine if a facility is meeting expectations towards the target if progress is not linear. Instead, an action plan outlining the specific steps that will be implemented each year until the plan is complete should be used to assess progress.

Such actions may include, but are not limited to, new operating procedures to be implemented, new equipment to be purchased and installed, or new processes to be commissioned. Actions in the plan should be specific and measurable and should clearly contribute to achieving the reduction specified in the multi-year plan. For a facility to achieve a Level A under Indicator 3, it must be able to demonstrate that previously-declared annual milestones for the current year of a multi-year target have been achieved in the reporting year. Energy performance improvement plans must be made on a cycle of no more than three years.

Other examples of how a facility can demonstrate progress towards an energy and GHG emissions performance target include:

- Demonstration of the implementation, or process of implementation, of emissions reduction projects or plans to change energy sources
- Capital allocation towards emissions reduction projects
- Actions implemented as part of a broader plan to achieve the performance targets
- Measured and verified energy or GHG reductions resulting from a specific performance improvement initiative
- Percentage of previous year's energy or GHG performance target achieved
- Improvements in the energy and GHG management system
- A study commissioned to investigate potential improvement opportunities
- Active participation in energy efficiency collaborative processes (e.g., Coalition for Energy Efficient Comminution).

40. What methodology can be used to create a practical target for mines being developed and operated at greater depths?

In some instances, underground mines are developing new production zones at much greater depth. This leads to greater energy intensity because of the extra energy required for ventilation, pumping, cooling, hoisting, and sustaining the infrastructure. A zero-based energy budget can be used to determine the new intensity level as well as the performance indicator and target. The zero-based energy budget is established by estimating baseline consumptions for each mining activity (e.g., ventilation, pumping, lighting, hoisting) at depth for a convenient period of time and then determining the expected total monthly and annual consumptions relative to forecasted production levels.

Typically, operations monitor total monthly consumption versus the estimated consumption budget. However, the total estimated monthly consumption can be divided by the forecasted production to determine monthly intensity targets. Actual performance can then be tracked throughout the year versus these target intensities.

41. How is a facility defined for reporting purposes?

Flexibility is provided in determining what constitutes a facility for the purposes of meeting TSM reporting requirements. Where appropriate, companies may wish to take an aggregated approach to individual activities (e.g., due to close proximity or connected operations). The definition of a facility should be consistent across all TSM protocols.

For example: National Greenhouse and Energy Reporting Scheme (NGER) Definition

Similar flexibility is provided under NGER. A facility is an activity or series of activities that generate GHG emissions and produce or consume energy. The definition of a facility for the purposes of the NGER is quite broad. The NGER Scheme is intended to cover a number of varied and complex situations. It is designed to provide corporations with a degree of flexibility in applying the definition of a facility to their own specific circumstances.

A facility under the NGER Act might include not only a factory but also the transportation of goods outside the factory's boundaries that is still associated with the factory's activities. Other examples of facilities include electricity generators, mining, landfill and construction sites, retail outlets, air, rail, road and water transport, and electricity, gas or water supply.

For further information, see the [Guideline – Defining a 'facility' for the purposes of the National Greenhouse and Energy Reporting legislation](#).

42. What are the nationally accredited GHG emissions quantification and estimation methods in Australia?

The intent is that established and documented standards should be used to quantify or estimate GHG emissions rather than the use of a bespoke company method.

For example, the National Greenhouse and Energy Reporting guidance are listed below:

- Methods and measurement criteria guideline, 2021
- Estimating emissions and energy from coal mining, 2021
- Estimating emissions from industrial processes, 2021 (including aluminium and steel production)
- Estimating emissions and energy from fuel combustion, 2021.

These and other fact sheets can be found at the [Clean Energy Regulator](#).

International standards may also be used, including:

- Greenhouse Gas Protocol
- IPCC Guidelines for National Greenhouse Gas Inventories
- Compendium of Greenhouse Gas Emissions Estimation Methodologies for the Oil and Gas Industry.

43. How are short and long-term targets defined?

Short and long-term targets are to be determined by each company, accounting for their operating context and climate change commitments.

44. How is non-linear progress against multi-year targets factored into reporting?

Progress against performance targets is usually not linear. For example, companies may be making investments/taking actions in accordance with a multi-year plan where material performance improvement (e.g., emission reductions) does not occur until a later reporting year.

In such a case, the action plan outlining the specific steps that will be implemented each year until the plan is complete should be used to assess progress. Actions in the plan should be specific and measurable and should clearly contribute to achieving the multi-year target. For a facility or business unit, it must be able to demonstrate that previously-declared annual milestones for the current year of a multi-year target have been achieved in the reporting year.

45. What materials or information can be used to demonstrate criteria publicly?

Corporate-level public reporting may be made through annual or sustainability reports. The relevant reports should include a summary of the company's strategy, actions (and progress, if relevant), governance processes and how the material climate-related risks and opportunities were identified and how they are assessed and managed.

46. What is meant by 'practices demonstrate alignment'?

Actual practices (the approaches to carrying out a task) should follow documented policies and procedures that action the corporate climate change strategy.

For example, this may include:

- Ensuring that potential suppliers or contractors have an appropriate climate change strategy
- Consideration of energy efficiencies or emissions in procurement or contract evaluations
- Adding collaboration opportunities in contracts.

APPENDIX 2: CLIMATE CHANGE CHECKLIST

SELF ASSESSMENT CHECKLIST

Facility Name:		Company Name:	
Assessed By:		Date Submitted:	

Supporting Documentation / Evidence:	
NAME OF DOCUMENT	LOCATION

Interviewees:			
NAME	POSITION	NAME	POSITION

INDICATOR 1: CORPORATE CLIMATE CHANGE MANAGEMENT

	QUESTION	Y	N	NA	DESCRIPTION & EVIDENCE
Level B	1. Has a corporate action plan been developed to meet all requirements for a Level A?				
	2. Is data on Scope 1 and 2 GHG emissions maintained?				
	<i>If you have answered "Yes" to all the Level B questions, continue to the Level A questions. If you have not answered "Yes" to all the Level B questions, assess the facility as a Level C.</i>				
Level A	1. Is there a demonstrated corporate climate change strategy that is supported by defined actions, including integration of the strategy into business planning for existing activities and in considerations for new projects?				
	2. Are board and management structures, accountabilities, responsibilities and reporting processes related to the governance of climate-related risks and opportunities in place?				
	3. Are material climate-related risks and opportunities and their impact on the company's businesses, strategy and financial planning identified, assessed and managed?				
	4. Are materials demonstrating the above criteria publicly reported on an annual basis?				
	<i>If you have answered "Yes" to all the Level A questions, continue to the Level AA questions. If you have not answered "Yes" to all the Level A questions, assess the facility as a Level B.</i>				

	QUESTION	Y	N	NA	DESCRIPTION & EVIDENCE
Level AA	1. Is there a demonstrated corporate commitment to climate action that is consistent with the ambition to limit global warming to well below 2°C (above pre-industrial levels), with short- and long-term targets and actions planned to achieve these commitments?				
	2. Is performance measured against stated targets in Level AA Criterion #1?				
	3. Are processes for identifying, assessing and managing material climate-related risks and opportunities integrated into the company's risk management approach?				
	4. Has the resilience of the business strategy been considered, taking into consideration different climate-related scenarios, including high- and low-warming scenarios?				
	5. Are the impacts of material climate-related risks and opportunities identified on additional aspects of business and strategy identified, assessed and managed?				
	6. Is there a demonstrated understanding of how the company's strategic investments contribute to societal climate change resiliency and the low carbon economy?				
	7. Do procurement and supply chain management practices demonstrate alignment with the corporate climate change strategy?				

	QUESTION	Y	N	NA	DESCRIPTION & EVIDENCE
Level AA	8. Does the corporate climate change strategy includes at least two of the following elements?				
	a. Planned or actual investments in climate action (e.g., research and development, energy performance improvements, clean energy projects) that will lead to measurable improvements in climate change mitigation or adaptation.				
	b. Key performance indicators related to the implementation of the climate change strategy assigned to relevant corporate employees, with internal company tracking on at least a quarterly basis				
	c. A range of potential carbon price scenarios used when developing strategies or evaluating and making decisions on projects				
	d. Opportunities for offsets (where used) that benefit communities of interest evaluated and, where feasible, prioritised				
	9. Are materials demonstrating the above criteria publicly reported on an annual basis?				
	<p><i>If you have answered “Yes” to all the Level AA questions, continue to the Level AAA questions. If you have not answered “Yes” to all the Level AA questions, assess the facility as a Level A.</i></p>				

	QUESTION	Y	N	NA	DESCRIPTION & EVIDENCE
Level AAA	1. Does the corporate climate change strategy includes all of the elements outlined in Level AA Criterion #8?				
	2. Are there demonstrated corporate commitments:				
	a. Corresponding with societal ambitions to achieve net-zero emissions by 2050, with short- and long-term targets and actions planned to achieve these commitments?				
	b. That future major capital allocation decisions will consider alignment with societal ambitions to achieve net-zero emissions by 2050?				
	c. To contribute to Scope 3 GHG emissions reductions?				
	3. Have active partnerships been pursued with customers to manage the GHG emissions embodied in commodities purchased?				
	4. Have short- and long-term actions to achieve stated targets in Level AA Criterion #1 and Level AAA Criterion #2(a) been, or are they on track to be, met on the timescale identified, or have corrective actions been identified and are these corrective actions being implemented?				
	5. In jurisdictions without a carbon pricing regime, does the company apply an internal carbon price in standard financial analyses?				
6. Are materials demonstrating the above criteria publicly reported on an annual basis?					
<i>If you have answered "Yes" to all the Level AAA questions, assess the facility as a Level AAA. If you have not answered "Yes" to all the Level AAA questions, assess the facility as a Level AA.</i>					
ASSESSED LEVEL OF PERFORMANCE FOR INDICATOR 1					Level: _____

INDICATOR 2: FACILITY CLIMATE CHANGE MANAGEMENT

	QUESTION	Y	N	NA	DESCRIPTION & EVIDENCE
Level B	1. Has a basic energy use and GHG emissions management system has been established that includes:				
	a. A demonstrated senior management commitment to manage energy use and GHG emissions, with assigned responsibility to a function and/or individual at the facility-level?				
	b. Identification and disaggregation of significant sources of energy consumption and GHG emissions?				
	c. Identification and estimation of significant sources of non-energy GHG emissions?				
	2. Has the facility conducted some analyses related to physical climate impacts and adaptation?				
	3. Has the facility developed an action plan to meet all requirements for a Level A?				
	<i>If you have answered "Yes" to all the Level B questions, continue to the Level A questions. If you have not answered "Yes" to all the Level B questions, assess the facility as a Level C.</i>				
Level A	1. Is an energy and GHG emissions management system established that includes:				
	a. A data collection and monitoring process that is appropriate for the energy use and GHG emission sources on site?				
	b. Clear definition of roles and responsibilities for managing energy and GHG emissions performance?				

	QUESTION	Y	N	NA	DESCRIPTION & EVIDENCE	
Level A	c. Operator awareness and understanding of parameters influencing energy performance and operator actions to optimise system energy performance for significant energy uses or GHG emission sources?					
	d. Consideration of energy and GHG emissions in business planning, including design criteria, where appropriate?					
	e. An annual management review?					
	2. Is a process for the management of physical climate impacts and adaptation established that includes:					
	a. Assessment and identification of potential physical climate impacts, with a review of this analysis scheduled at predetermined intervals?					
	b. Consideration of risks resulting from potential physical climate impacts in relevant facility-level decision-making?					
	c. Identification, prioritisation and implementation through business planning of adaptation measures that respond to the identified physical climate impacts?					
	3. Is a process in place to promote awareness of climate change mitigation and adaptation, including relevant corporate commitments and facility-level targets, to employees and contractors?					
	4. Does the facility gauge the level of importance of climate change mitigation and adaptation in relation to relevant or affected COI and engage as appropriate?					
	<i>If you have answered "Yes" to all the Level A questions, continue to the Level AA questions. If you have not answered "Yes" to all the Level A questions, assess the facility as a Level B.</i>					

	QUESTION	Y	N	NA	DESCRIPTION & EVIDENCE
Level AA	1. Does the facility collaborates with COI interested in climate change as appropriate?				
	2. Has the energy and GHG emissions management system undergone an internal or external audit?				
	<i>If you have answered “Yes” to all the Level AA questions, continue to the Level AAA questions. If you have not answered “Yes” to all the Level AA questions, assess the facility as a Level A.</i>				
Level AAA	1. Does the facility apply three or more of the following leading practices?				
	a. Are key performance indicators related to the reduction of energy use or GHG emissions assigned to relevant functions and/or employees?				
	b. Are offsets (where used) integrated into the management system?				
	c. Is the energy and GHG emissions management system applied to the full lifecycle of facility activities, including in relation to suppliers, customers and other third parties?				
	d. Are active partnerships pursued with other organisations or COI on physical climate impacts and adaptation management, with roles and responsibilities assigned to support this commitment?				
	e. Has community, cultural or traditional knowledge been considered in climate impact assessments and in the design of adaptation measures?				
<i>If you have answered “Yes” to all the Level AAA questions, assess the facility as a Level AAA. If you have not answered “Yes” to all the Level AAA questions, assess the facility as a Level AA.</i>					
ASSESSED LEVEL OF PERFORMANCE FOR INDICATOR 2				Level: _____	