



SCIENCE  
BASED  
TARGETS

DRIVING AMBITIOUS CORPORATE CLIMATE ACTION



**EY** Building a better  
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# LANDSCAPE ANALYSIS: MEASUREMENT, REPORTING AND VERIFICATION (MRV) OF SCIENCE- BASED TARGETS

APPENDICES

NOVEMBER 2023

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# APPENDIX A: APPROACH AND METHODOLOGY





## APPENDIX A: APPROACH AND METHODOLOGY

EY and SBTi led research, analysis and stakeholder engagement to develop a view of current state and leading practices relating to science-based targets and climate disclosure systems. Research conducted is current as of September, 2023.

### *Research and analysis included*

- Reporting and performance frameworks and guidance from 37 existing climate-related NGOs
- For climate related metrics, 5 assurance approaches and 3 sets of public assurance guidelines
- Qualitative responses and quantitative trends from 10,000+ company CDP Climate Change Questionnaire disclosures for 2021 and 2022
- Regulatory requirements and guidance for corporations on climate-related disclosures from 13 national and regional regulations
- Scientific, academic and/or research literature from 42 journals and studies on corporate GHG emissions targets, science-based targets and MRV.

### *Stakeholder engagement included*

- External stakeholder survey conducted by SBTi in 2022 on MRV practices, including responses from 296 companies and interested parties, including consultancies and non-profits
- Interviews with 13 internal and external stakeholders
- EY facilitated 2 corporate roundtables and associated surveys on considerations relating to corporate measurement and reporting of progress against science-based targets with sustainability representatives from 30+ international companies

- Engagement with more than 10 global EY subject matter professionals on leading corporate assurance practices
- Sessions with the SBTi MRV working group and Expert Advisory Group (EAG)

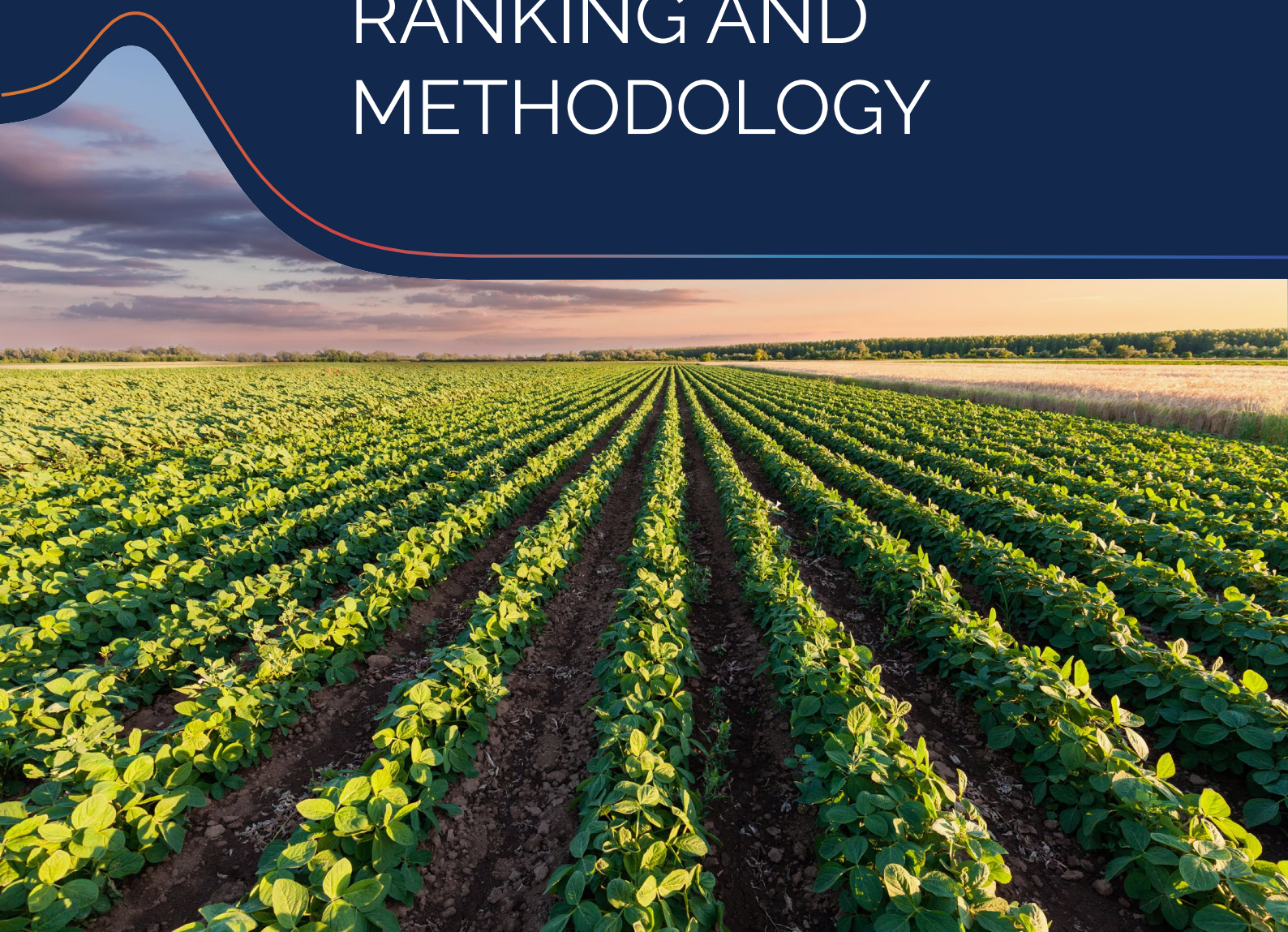
After several iterations of research, stakeholder engagement and analysis, the EY team developed a list of over 125 questions and topics relating to a potential SBTi MRV system. With this list, EY engaged with the SBTi MRV team, SBTi MRV working group and EAG to evaluate each question and topic. Through these discussions, the team identified a narrow focus for coverage of the research paper using the established boundaries and methodology previously described.

Once the scope was determined for this paper, the team conducted additional research, analysis and stakeholder engagement to explore these topics in depth. Using this information and analysis, EY drafted this research paper to identify and explore the current state, challenges and leading practices of selected topics of measurement, reporting and verification of science-based targets.





# APPENDIX B: LEADING PRACTICE RANKING AND METHODOLOGY



## APPENDIX B: LEADING PRACTICE RANKING AND METHODOLOGY

### RANKING METHODOLOGY

To identify leading practices, SBTi and EY assessed and ranked identified practices based on relative alignment with each of the five lenses (Table 8). Rankings were then validated and refined based on feedback from the SBTi's MRV expert advisory group (EAG) and MRV working group.

**Table 8 – Ranking methodology**

Current practices
High alignment
Moderate alignment
Moderate misalignment
High misalignment
Not applicable



### LEADING PRACTICES FOR SIGNIFICANT CHANGES

Considering the different practices relating to significance thresholds for recalculation, such practices were mapped across the established lenses to identify leading practices, as indicated in bold in Table 9 below.

**Table 9 – An evaluation of current practices relating to significant changes across lenses**

Practices	Practice definition	Consistency with targets	Achievement	Transparency	Feasibility	Alignment with guidance
Type						
None	Not considering significant changes in comparison with a significance threshold for recalculation.					

Practices	Practice definition	Consistency with targets	Achievement	Transparency	Feasibility	Alignment with guidance
Type						
Company-determined	Considering net significant changes in comparison with a significance threshold for recalculation that is self-determined by the company.					
<b>Standardized</b>	Considering net significant changes in comparison with an established significance threshold for recalculation (i.e., by the SBTi).					
Subject of recalculation						
<b>Recalculating only base year and target coverage</b>	When an established significance threshold for recalculation is exceeded, a company recalculates base year data and target coverage.					
Company-determined	When an established significance threshold for recalculation is exceeded, a company recalculates base year data, target coverage, and target-related data for each year since the base year.					
Applicability over time						
Each change considered independently	Considering significant changes independently when comparing with a significance threshold for recalculation.					
Cumulative changes considered over one year	Considering significant changes summed for one year when comparing with a significance threshold for recalculation.					

Practices	Practice definition	Consistency with targets	Achievement	Transparency	Feasibility	Alignment with guidance
Applicability over time						
<b>Cumulative changes considered across years since the base year</b>	Considering significant changes summed for all years since the base year calculation when comparing with a significance threshold for recalculation.					
Applicability to scope coverage						
Changes considered by total of emission inventory	Considering significant changes cumulatively across all GHG emissions scopes (scope 1, 2, and 3) when comparing with a significance threshold for recalculation.					
<b>Changes considered by percentage of individual scopes</b>	Considering significant changes by percentage of each individual GHG emissions scope (scope 1, 2, and 3) when comparing with a significance threshold for recalculation.					

## LEADING PRACTICES FOR ADDITIONAL INDICATORS OF PROGRESS

Considering the various additional indicators of progress, such practices are mapped across the established lenses to identify leading practices, as indicated in bold in Table 10 below.

**Table 10 - An evaluation of current practices relating to additional metrics across lenses**

Practices	Practice definition	Consistency with targets	Achievement	Transparency	Feasibility	Alignment with guidance
Type						
None	Disclosing only data required to determine science-based target achievement in the target year.					



Practices	Practice definition	Consistency with targets	Achievement	Transparency	Feasibility	Alignment with guidance
Type						
<b>Transition plans</b>	Disclosing a time-bound action plan aligned with existing guidance and standards that outlines how an organization will pivot its existing assets, operations and business model toward a trajectory aligned with established science-based targets. <sup>AC</sup>					
<b>Financial metrics</b>	Disclosing climate-related financial metrics, including CapEx, OpEx, and research and development spend, that may indicate company progress toward science-based targets.					
Format						
<b>Standardized</b>	Disclosing transition plans and climate-related financial metrics that are aligned with existing regulatory or climate-related NGO guidance or requirements. They follow consistent and repeatable reporting practices and guidance and may be sector-specific.					
Company-determined	Disclosing transition plans and climate-related financial metrics defined by each company in the methodology and format of their choosing.					
Applicability over time						
<b>All intervening years (annually)</b>	Disclosing transition plans and climate-related financial metrics each year between the established base year and target year.					

<sup>AC</sup> See Glossary for expanded definition, including how CDP defines a credible transition plan.

Practices	Practice definition	Consistency with targets	Achievement	Transparency	Feasibility	Alignment with guidance
Applicability over time						
Intervening milestone years	Disclosing transition plans and climate-related financial metrics in interim years in a cadence other than annually between the established base year and target year.					
Company-determined frequency	Disclosing transition plans and climate-related financial metrics in a cadence defined by each company in the time period of their choosing.					

## LEADING PRACTICES FOR ASSURANCE

Considering the various assurance considerations, practices were mapped to identify leading practices as indicated in bold in Table 11 below.

**Table 11 - An evaluation of current practices relating to assurance across lenses**

Practices	Practice definition	Consistency with targets	Achievement	Transparency	Feasibility	Alignment with guidance
Type						
None	Obtaining no assurance over data underlying or related to science-based targets.					
<b>Limited assurance</b>	Obtaining limited assurance over data underlying or related to science-based targets. <sup>AD</sup>					
<i>Reasonable assurance</i>	Obtaining reasonable assurance over data underlying or related to science-based targets. <sup>AE</sup>					

<sup>AD</sup> See Table 7 for detailed description of limited assurance.

<sup>AE</sup> See Table 7 for detailed description of reasonable assurance.

Practices	Practice definition	Consistency with targets	Achievement	Transparency	Feasibility	Alignment with guidance
Applicability over time						
<b>Base year</b>	Obtaining assurance over data underlying or related to science-based targets in the established base year from which science-based target coverage is calculated.					
<b>Target year</b>	Obtaining assurance over data underlying or related to science-based targets in the established target year in which science-based target achievement is determined.					
Intervening milestone years	Obtaining assurance over data underlying or related to science-based targets in interim years in a cadence other than annually between the established base year and target year.					
<i>All intervening years (annually)</i>	Obtaining assurance over data underlying or related to science-based targets each year between the established base year and target year.					





# APPENDIX C: REGULATION



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Table 12 – National and Regional Climate Legislation Coverage of Changes

Country/region	Legislation	Disclosure recommendation/requirement
Australia	National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015 <sup>109</sup>	“When making a baseline determination for a facility the Regulator will either specify a number as the baseline emissions number or describe a formula for the annual calculation of the baseline emissions number. A determination that is a formula will allow the Regulator to annually recalculate the baseline in line with updates.”
China	Ministry of Ecology and Environment  Ministerial Decree No. 24: Measures for the Administration of Lawful Disclosure of Enterprise Environmental Information <sup>110</sup>	“Enterprises may make changes to the disclosed environmental information according to the actual situation; Where changes are made, they shall be made in the form of a temporary environmental information disclosure report in accordance with law, and the matters and reasons for the changes shall be explained.”
European Union	European Sustainability Reporting Standards (ESRS) E1: Climate Change <sup>111</sup>	CSRD requires that companies “from 2025 onwards, update the base year for GHG emissions reduction targets in five-year rolling periods.” Furthermore, the guidance states that “the baseline value and year shall not be changed unless significant changes in the target or reporting boundary occur.” The CSRD also states that companies shall disclose “any changes in targets or underlying methodologies and assumptions adopted within the defined time horizon together with an explanation of the rationale for those changes and their effect on comparability.”
Hong Kong [proposed]	Enhancement of Climate-related Disclosures Under the Environmental, Social and Governance Framework <sup>112</sup>	“The issuer should disclose in the ESG report any changes to the methods or KPIs used, or any other relevant factors affecting a meaningful comparison”  “If there is a change in the scope, the issuer should explain the difference and reason for the change.”
India	Business Responsibility and Sustainability Reporting (BRSR): Annexure II <sup>113</sup>	“Any change in goals with regard to timelines, partial achievement of a goal or delay in achievement should also be specifically indicated, and where possible, with reasons.”

Country/region	Legislation	Disclosure recommendation/requirement
United Kingdom	Companies (Strategic Report) (Climate-related Financial Disclosure) Regulations 2022  Limited Liability Partnerships (Climate-related Financial Disclosure) Regulations 2022 <sup>114</sup>	"Where a company or LLP changes a climate-related KPI used to manage its climate-related risks and opportunities, the reason for the change should normally be disclosed together with explanations of why the new KPI is more effective than the previous measurements."

**Table 13 – National and regional disclosure requirements and recommendations for transition plans and climate-related investments**

Country/region	Legislation	Disclosure recommendation/requirement
Australia [proposed]	The Treasury Climate-related financial disclosure: Consultation paper (June 2023) <sup>115</sup>	"Proposal: From commencement, transition plans would need to be disclosed, including information about offsets, target setting and mitigation strategies"
Brazil	Prudential Financial Regulation  Resolution BCB 139: Provides for the disclosure of information in the Report on Social, Environmental and Climate-related Risks and Opportunities (GRSAC Report) <sup>116</sup>	"Financial institutions and other institutions licensed by the Central Bank of Brazil are required to publish a Report on Social, Environmental and Climate-related Risks and Opportunities (GRSAC Report), which may optionally include disclosures relating to "the transition to a low-carbon economy."





Country/region	Legislation	Disclosure recommendation/requirement
European Union	Corporate Sustainability Reporting Directive (CSRD) <sup>117</sup>	<p>“[Undertakings] should also be required to disclose any plans they may have to ensure that their business model and strategy are compatible with the transition to a sustainable economy and with the objectives of limiting global warming to 1.5 °C in line with the Paris Agreement and achieving climate neutrality by 2050, as established in Regulation (EU) 2021/1119, with no or limited overshoot.</p> <p>It is especially important that plans related to the climate be based on the latest science, including Intergovernmental Panel on Climate Change (IPCC) reports and reports by the European Scientific Advisory Board on Climate Change. Information disclosed in accordance with Article 8 of Regulation (EU) 2020/852 about the amount of capital expenditure (CapEx) or operating expenditure (OpEx) associated with taxonomy-aligned activities could support financial and investment plans related to such plans where appropriate.”</p>
	Corporate Sustainability Due Diligence Directive (CSDDD) <sup>118</sup>	Article 15 of the Directive states that “Member States shall ensure that companies referred to in Article 2(1), point (a), and Article 2(2), point (a), shall adopt a plan to ensure that the business model and strategy of the company are compatible with the transition to a sustainable economy and with the limiting of global warming to 1.5 °C in line with the Paris Agreement.”
Hong Kong [proposed]	Enhancement of Climate-related Disclosures Under the Environmental, Social and Governance Framework <sup>119</sup>	<p>All issuers are proposed to be mandated to disclose transition plans, including:</p> <ol style="list-style-type: none"> <li>“any changes to the issuer’s business model and strategy, and any adaptation and mitigation efforts undertaken to address such risks and opportunities; and</li> <li>any climate-related targets the issuer has set for transition plans, and any GHG emission targets the issuer is required to meet by local legislation.”</li> </ol>
India	Business Responsibility and Sustainability Reporting (BRSR): Annexure I <sup>120</sup>	<p>Disclosures according to the BRSR are mandatory for the top 1,000 listed companies by market capitalization and include the following disclosure requirements:</p> <ul style="list-style-type: none"> <li>Principle 2, Indicator 1: “Percentage of R&amp;D and capital expenditure (capex) investments in specific technologies to improve the environmental and social impacts of product and processes to total R&amp;D and capex investments made by the entity, respectively.”</li> </ul>

Country/region	Legislation	Disclosure recommendation/requirement
New Zealand	Aotearoa New Zealand Climate Standard 1: Climate-related Disclosures (NZ CS 1) <sup>121</sup>	<p>“An entity must include the following information when describing how it will position itself as the global and domestic economy transitions towards a low-emissions, climate-resilient future state...</p> <ul style="list-style-type: none"> <li>a. a description of its current business model and strategy;</li> <li>b. the transition plan aspects of its strategy, including how its business model and strategy might change to address its climate-related risks and opportunities; and</li> <li>c. the extent to which transition plan aspects of its strategy are aligned with its internal capital deployment and funding decision-making processes.”</li> </ul>
Switzerland	Swiss Federal Council Ordinance on Climate Disclosures <sup>122</sup>	<p>“The implementation of the recommendations ... shall comprise the following in particular:</p> <ul style="list-style-type: none"> <li>a. a transition plan that is comparable with the Swiss climate goals”</li> </ul>
United Kingdom	<p>Companies (Strategic Report) (Climate-related Financial Disclosure) Regulations 2022</p> <p>Limited Liability Partnerships (Climate-related Financial Disclosure) Regulations 2022<sup>123</sup></p>	<p>“In describing the actual or potential impact a business should consider both the actions that are being put in place now and contingency plans for actions which may be taken in the future. ... For instance, ... costs of transitioning to low emissions technologies, perhaps resulting in retirements of existing assets, research and development of new solutions, capital expenditure on new technologies or adoption of new processes or practices.”</p>
United States [proposed]	<p>Securities and Exchange Commission (SEC)</p> <p>The Enhancement and Standardization of Climate-Related Disclosures for Investors<sup>124</sup></p>	<p>“If a registrant has adopted a transition plan, the proposed rules would require it to describe its plan, including the relevant metrics and targets used to identify and manage physical and transition risks. This information could help investors understand how a registrant intends to address identified climate-related risks and any transition to a lower carbon economy while managing and assessing its business operations and financial condition.”</p> <p>“The proposed approach is intended to address this dispersed presentation by requiring registrants to first identify the relevant climate-related expenditures and then compile those impacts in one location. Similar to the proposed financial impact metrics, such an approach should provide insight into, and context for understanding, the nature of a registrant’s business, including any disclosed strategy for addressing and managing the specified risks—particularly in the context of transition planning.</p>

**Table 14 – National and regional assurance requirements and recommendations**

Country/region	Legislation	Disclosure recommendation/requirement
Australia	National Greenhouse and Energy Reporting Act 2007 <sup>125</sup>	<p>“(2) The Regulator may, by written notice given to the corporation, require the corporation to:</p> <ol style="list-style-type: none"> <li>appoint as an audit team leader: <ol style="list-style-type: none"> <li>a registered greenhouse and energy auditor of its choice; or</li> <li>if the Regulator specifies a registered greenhouse and energy auditor in the notice—that auditor; or</li> <li>if the Regulator specifies more than one registered greenhouse and energy auditor in the notice—any one of those auditors; and</li> </ol> </li> <li>arrange for the audit team leader to carry out an audit on one or more aspects of the corporation’s compliance with this Act or the associated provisions; and</li> <li>arrange for the audit team leader to give the corporation a written report setting out the results of the audit; and</li> <li>give the Regulator a copy of the audit report on or before the day specified in the notice.</li> </ol> <p>2. The notice must specify the:</p> <ol style="list-style-type: none"> <li>type of audit to be carried out; and</li> <li>matters to be covered by the audit; and</li> <li>form of the audit report and the kinds of details it is to contain.</li> </ol> <p>3. The corporation, and each member of the corporation’s group, must provide the audit team leader and any audit team members with all reasonable facilities and assistance necessary for the effective exercise of the audit team leader’s duties under this Act.”</p>
European Union	Corporate Sustainability Reporting Directive (CSRD) <sup>126</sup>	<p>“A progressive approach to enhancing the level of the assurance required for sustainability information should be considered, starting with an obligation on the statutory auditor or audit firm to express an opinion about the compliance of the sustainability reporting with Union requirements based on a limited assurance engagement...The statutory auditor or audit firm should be required to express an opinion based on a reasonable assurance engagement about the compliance of the sustainability reporting with Union requirements, when the Commission adopts assurance standards for reasonable assurance of sustainability reporting by means of delegated acts no later than 1 October 2028, following an assessment to determine if reasonable assurance is feasible for auditors and undertakings.”</p>

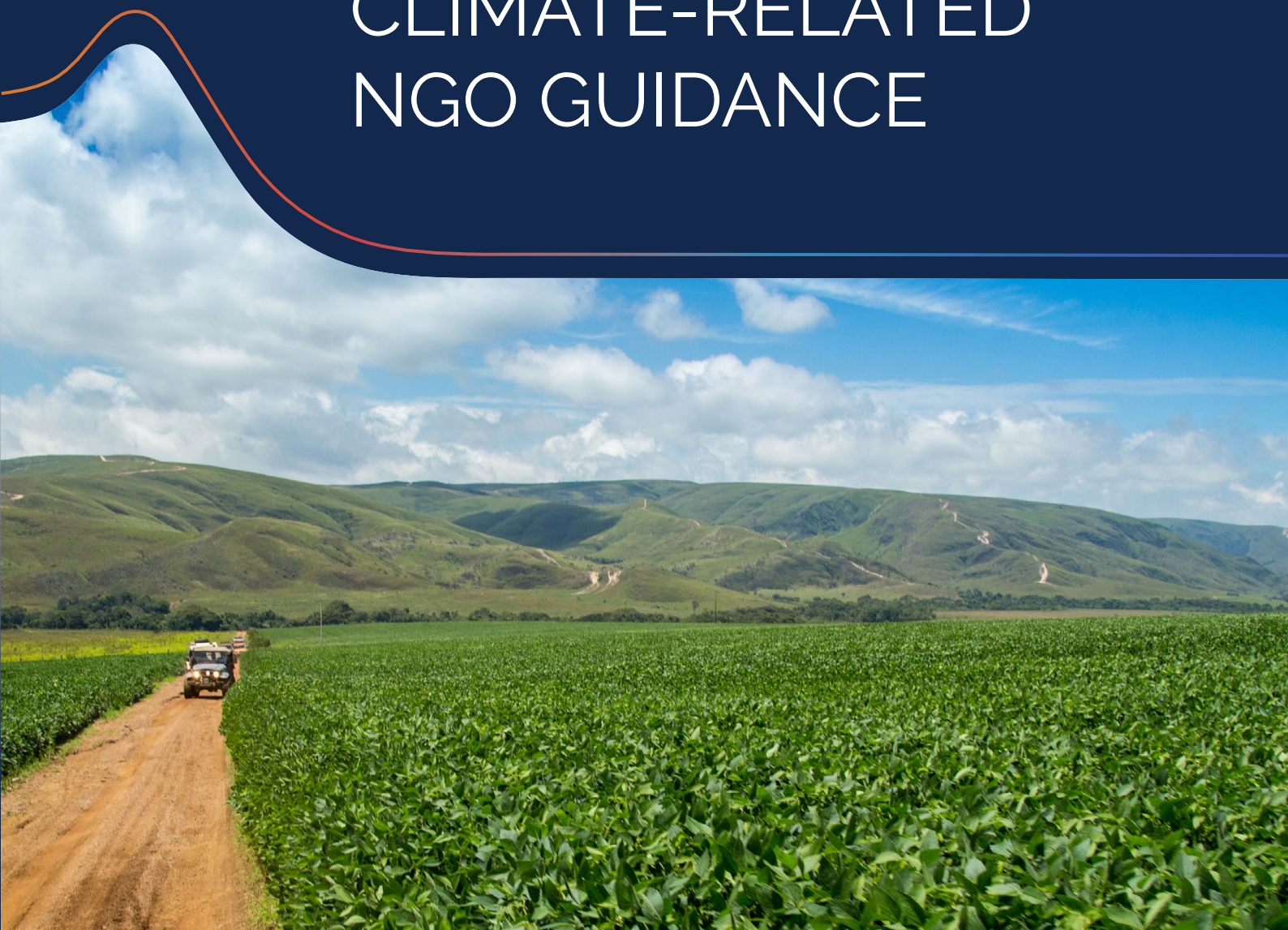


Country/region	Legislation	Disclosure recommendation/requirement
Hong Kong [proposed]	Enhancement of Climate-related Disclosures Under the Environmental, Social and Governance Framework <sup>127</sup>	"The issuer may seek independent assurance to strengthen the credibility of the ESG information disclosed. Where independent assurance is obtained, the issuer should describe the level, scope and processes adopted for the assurance given clearly in the ESG report."
India	Consultation Paper on ESG Disclosures, Ratings and Investing <sup>128</sup>	Section 3.2.1.b – "In order to achieve the twin objectives of improving credibility and limiting the cost of compliance, BRSR Core (Annexure1) has been developed for reasonable assurance which consists of select Key Performance Indicators (KPIs) under each E, S and G attributes / areas that needs to be reasonably assured. The BRSR Core framework also specifies the methodology to facilitate reporting by corporates and verification of the reported data by an assurance provider."
New Zealand	Aotearoa New Zealand Climate Standard 1: Climate-related Disclosures (NZ CS 1) <sup>129</sup>	<p>Section 25 - "Section Part 7A of the Financial Markets Conduct Act 2013 requires that the disclosure of an entity's GHG emissions as required by Aotearoa New Zealand Climate Standards are the subject of an assurance engagement. This Standard requires that this assurance engagement is a limited assurance engagement at a minimum."</p> <p>Section 26 – "For the avoidance of doubt, the following information required by Aotearoa New Zealand Climate Standards is subject to an assurance engagement:</p> <ol style="list-style-type: none"> <li>GHG emissions: gross emissions in metric tonnes of CO<sub>2</sub>e classified as: <ol style="list-style-type: none"> <li>scope 1;</li> <li>scope 2 (calculated using the location-based method);</li> <li>scope 3;</li> </ol> </li> <li>additional requirements for the disclosure of GHG emissions</li> <li>GHG emissions methods, assumptions and estimation uncertainty"</li> </ol>
Singapore	Practice Note 7.6 Sustainability Reporting Guide <sup>130</sup>	"An issuer whose sustainability reporting has already matured after several annual exercises would want to undertake external assurance by independent professional bodies to add credibility to the information disclosed and analysis undertaken. The issuer is encouraged to consider independent external assurance on selected important aspects of its sustainability report even in its initial years, expanding coverage in succeeding years."

Country/region	Legislation	Disclosure recommendation/requirement
United States [proposed]	Securities and Exchange Commission (SEC) Proposed Rule: The Enhancement and Standardization of Climate-Related Disclosures for Investors <sup>131</sup>	<p>“The proposed rules would require a registrant, including a foreign private issuer, that is an accelerated filer or large accelerated filer to include in the relevant filing an attestation report covering the disclosure of its Scope 1 and Scope 2 emissions and to provide certain related disclosures about the service provider. As proposed, the attestation engagement must, at a minimum, be at the following assurance level for the indicated fiscal year for the required GHG emissions disclosure:</p> <ul style="list-style-type: none"> <li>• Limited Assurance: Fiscal Years 2 and 3 after Scopes 1 and 2 emissions disclosure compliance date</li> <li>• Reasonable Assurance: Fiscal Years 4 and beyond after Scopes 1 and 2 emissions disclosure compliance date”</li> </ul> <p>“In contrast, we are not proposing to require assurance of Scope 3 emissions disclosure at this time because the preparation of such disclosure presents unique challenges.”</p>



# APPENDIX D: CLIMATE-RELATED NGO GUIDANCE





**Table 15 – Guidance and recommendations from climate-related NGOs on significant changes and base year recalculations**

Standard	Legislation	Disclosure recommendation/requirement
CDP	Climate Change 2023 Reporting Guidance <sup>132</sup>	Describing C5.1a in the Climate Change Questionnaire, the 2023 Reporting Guidance states: “Structural changes such as acquisitions, divestments, and mergers may have a significant impact on base year emissions due to the transfer of ownership or control of emitting activities from one organization to another. While a single structural change might not have a significant impact, the cumulative effect of a number of minor structural changes can result in a significant impact. This question provides data users with important context to any changes in emissions that may trigger base year emissions recalculation.”
Glasgow Financial Alliance for Net Zero (GFANZ)	Financial Institution Net-zero Transition Plans: Fundamentals, Recommendations, and Guidance <sup>133</sup>	“Where the portfolio changes significantly, a recalculation of the baseline may be needed. Both the GHG Protocol and PCAF Standard call for a policy to define the circumstances that trigger a recalculation. There are additional data consistency considerations in such cases.”
International Organization for Standardization (ISO)	Net zero guidelines <sup>134</sup> IWA 42:2022(E)	“All organizations should determine: a) the baseline from which to measure GHG emissions reduction progress, with an explanation of why the baseline has been chosen and how changes in conditions since the baseline will be accounted for, to appropriately represent changes in GHG emissions performance”
UN-convened Net-Zero Asset Owner Alliance (UN NZAOA)	Target Setting Protocol (Third edition) <sup>135</sup>	“Merger and Acquisition (M&A) transactions may require an adjustment to sub-portfolio targets. For the adjustment, a linear reduction between base year and target year is assumed. The emissions of the acquired (or sold) portfolio are measured at transaction time and the adjusted portfolio will then receive a new target. It is the responsibility of each Alliance member to decide whether an M&A transaction is large enough to justify a new target and to properly document the adjustment if a new target is set.”
Partnership for Carbon Accounting Financials (PCAF)	The Global GHG Accounting & Reporting Standard: Part A, Financial Emissions <sup>136</sup>	“Financial institutions shall, in line with the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard requirement (pg. 104185), establish a baseline recalculation policy to define under which circumstances a recalculating of (base year) financed emissions is necessary to ensure the consistency, comparability, and relevance of the reported GHG emissions data over time. As part of this base year emissions recalculation policy, financial institutions shall establish and disclose the significance threshold that triggers base year emissions recalculations.”

**Table 16 – Guidance and recommendations from climate-related NGOs on transition plans**

Standard	Legislation	Disclosure recommendation/requirement
CDP	2023 Climate Change Reporting Guidance <sup>137</sup>	<p>Module C3 Business Strategy “includes questions on scenario analysis and transition planning.” The guidance goes on to state that “transition planning is also an important evolution of strategic environmental planning, and includes all the relevant changes that need to be made to the company’s business model before the company can adjust to a net-zero future.”</p> <p>[See also CDP Climate Transition Plan technical note<sup>169</sup>]</p>
Glasgow Financial Alliance for Net Zero (GFANZ)	Financial Institution Net-zero Transition Plans: Fundamentals, Recommendations, and Guidance <sup>138</sup>	“Proposed recommendations and guidance to deliver a global framework for ambitious and credible net-zero transition plans for financial institutions.”
Assessing low-Carbon Transition (ACT)	Generic Sector Methodology <sup>139</sup>	“ACT aims to engage companies in a low-carbon transition and can be considered as a useful tool to structure and evaluate the company’s strategy.” The methodology includes indicator GE 5.3 Low-Carbon Transition Plan to evaluate whether “the company has a plan on how to transition the company to a business model compatible with a low-carbon economy.”
International Organization for Standardization (ISO)	<p>Net Zero Guidelines</p> <p>IWA 42:2022(E)<sup>140</sup></p>	<p>“The organization should establish a transition plan for emissions reductions and removals as part of its transition to a net zero operational model.”</p> <p>“The organization should report: ... c) a transition plan, , including information on actions planned to reduce current GHG emissions ... consistent with achieving interim GHG emissions targets”</p>
Climate Action 100+ (CA100+)	Net Zero Company Benchmark 2.0 <sup>141</sup>	Disclosure Indicator 9: Just Transition includes Sub-indicator 9.2, which states “the company has disclosed how it is planning for and monitoring progress towards a Just Transition.”
Transition Plan Taskforce (TPT)	<p>TPT Disclosure Framework<sup>142</sup></p> <p>[See also TPT Implementation Guidance<sup>143</sup>]</p>	“The Transition Plan Taskforce (TPT) was launched on 25 April 2022. It will develop a gold standard for transition plans, encouraging entities to back up their targets with rigorous and credible short-term actions.”

Standard	Legislation	Disclosure recommendation/requirement
UN-convened Net-Zero Asset Owner Alliance (UN NZAOA)	Target Setting Protocol (Third edition) <sup>144</sup>	"The Alliance's policy track has developed a strategy to work on... advocating for the alignment of intermediate targets and transition plans with the net zero by 2050 goals"
United Nations' High-Level Expert Group (UN HLEG)	Integrity Matters: Net Zero Commitments By Businesses, Financial Institutions, Cities And Regions <sup>145</sup>	<p>Recommendation 4. Creating a Transition Plan covers detailed recommendations for transition plans, with specific recommendations for financial institutions.</p> <p>Main recommendation: "Non-state actors must publicly disclose comprehensive and actionable net zero transition plans which indicate actions that will be undertaken to meet all targets, as well as align governance and incentive structures, capital expenditures, research and development, skills and human resource development, and public advocacy, while also supporting a just transition. Transition plans should be updated every five years and progress should be reported annually."</p>

**Table 17 – Guidance and recommendations from climate-related NGOs on financial indicators**

Standard	Legislation	Disclosure recommendation/requirement
CDP	Climate Change 2023 Reporting Guidance <sup>146</sup>	Question C3.5 of the 2023 Climate Change Questionnaire asks "In your organization's financial accounting, do you identify spending/revenue that is aligned with your organization's climate transition?" The questionnaire goes on to specify the following requested content: "Spending (e.g., CAPEX or OPEX) on the implementation of emissions reduction initiatives and/or investment in new low-carbon assets or projects."
Assessing low-Carbon Transition (ACT) initiative	Assessing low-Carbon Transition: Generic <sup>147</sup>	<p>The section on Intangible Investments includes Indicator GE 3.1 R&amp;D in low-carbon technologies. The data requirements for this indicator include:</p> <ul style="list-style-type: none"> <li>• "R&amp;D costs/investments in low-carbon technologies of the company.</li> <li>• Total R&amp;D costs/investments of the company"</li> </ul>

Standard	Legislation	Disclosure recommendation/requirement
International Organization for Standardization (ISO)	Net zero guidelines <sup>148</sup> IWA 42:2022(E)	“The organization should include the following when reporting progress towards meeting net zero targets: k. improvements and solutions implemented since the previous reporting period; l. planned new initiatives or actions; m. whether the mitigation actions taken have immediate or projected future impact on GHG emissions”
Climate Action 100+ (CA100+)	Net Zero Company Benchmark 2.0 <sup>149</sup>	Sub-indicator 6.2 states “the company explains how it intends to invest in climate solutions (i.e., technologies and products that will enable the economy to decarbonise),” with metric 6.2.a specifying “the company discloses the stated value of its capital expenditure allocated towards climate solutions in the last reporting year” and metric 6.2.b stating “the company discloses the stated value of its capital expenditure that it intends to allocate towards climate solutions in the future.”
Transition Plan Taskforce (TPT)	TPT Disclosure Framework <sup>150</sup>  [See also TPT Implementation Guidance <sup>151</sup> ]	“The Transition Plan Taskforce (TPT) was launched on 25 April 2022. It will develop a gold standard for transition plans, encouraging entities to back up their targets with rigorous and credible short-term actions.”
United Nations’ High-Level Expert Group (UN HLEG)	Integrity Matters: Net Zero Commitments By Businesses, Financial Institutions, Cities And Regions <sup>152</sup>	Recommendation number four of the ten offered in this guidance is titled “Creating a Transition Plan.” Specifically, the recommendation states that “non-state actors must publicly share their comprehensive net zero transition plans de-tailing what they will do to meet all targets, align governance and incentivise structures, capital expenditures, research and development, skills and human resource development, and public advocacy, while also supporting a just transition.”
UN-convened Net-Zero Asset Owner Alliance (UN NZAOA)	Target Setting Protocol (Third edition) <sup>153</sup>	“Members shall report individually to the public on their progress in climate solution investments”



**Table 18 – Guidance and recommendations from climate-related NGOs on the assurance of GHG emissions**

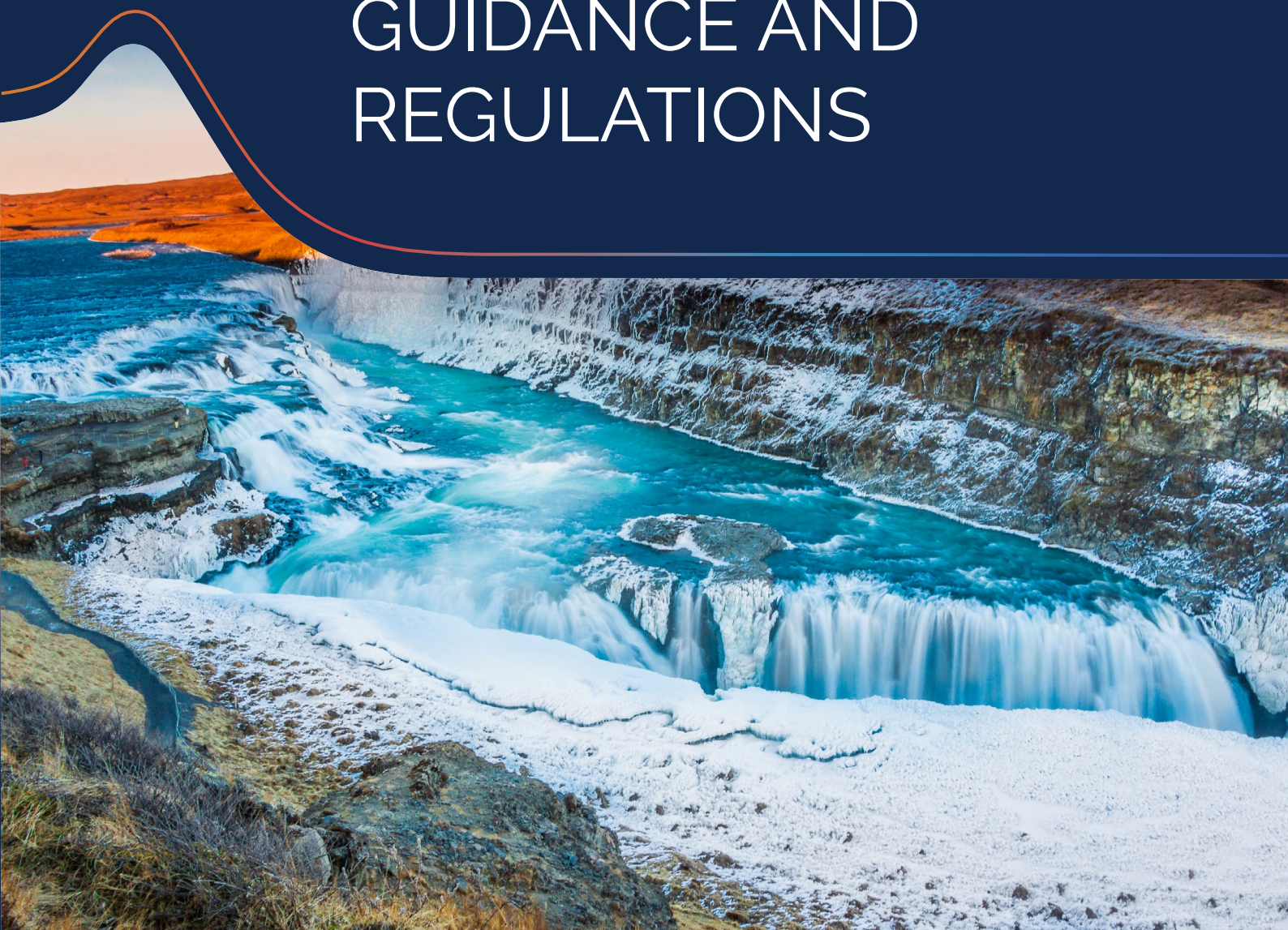
Standard	Legislation	Disclosure recommendation/requirement
CDP	Climate Change 2023 Reporting Guidance <sup>154</sup>	Question 10.1 of the 2023 Climate Change Questionnaire states: “Indicate the verification/assurance status that applies to your reported emissions.” The requested content for this question specifies: “Please provide the verification/assurance status that applies to your Scope 1, Scope 2, and Scope 3 emissions.”
Glasgow Financial Alliance for Net Zero (GFANZ)	Financial Institution Net-zero Transition Plans: Fundamentals, Recommendations, and Guidance <sup>155</sup>	“Where available, to provide stakeholders with independent assurance that targets and data are credible, financial institutions should consider seeking external validation for their GHG emissions targets from third parties.”
Global Reporting Initiative (GRI)	Consolidated Set of the GRI Standards <sup>156</sup>	The GRI Standards state that “an organization is required to apply the reporting principles to be able to claim that it has prepared the reported information in accordance with the GRI Standards.” One of the principles is Verifiability, in which the Standards require “the organization shall gather, record, compile, and analyze information in such a way that the information can be examined to establish its quality.”
Assessing low-Carbon Transitions (ACT)	Assessing low-Carbon Transition: Generic <sup>157</sup>	“Under the ACT project, the data required for the assessment shall be verified or verifiable.”
International Organization for Standardization (ISO)	Net zero guidelines <sup>158</sup> IWA 42:2022(E)	“Governance organizations should set requirements for competent annual third-party verification of emissions reporting, absolute emissions reduction targets and full information about implementation plans and timelines, as well as how plans fit with applicable science-based pathways.”
Transition Plan Taskforce (TPT)	TPT Disclosure Framework <sup>159</sup>  [See also TPT Implementation Guidance <sup>160</sup> ]	<p>“If an entity obtains assurance or verification of sustainability information, transition plan disclosure or wider sustainability reporting, the TPT would expect to see the following information disclosed:</p> <ul style="list-style-type: none"> <li>• the level of assurance or verification obtained;</li> <li>• the scope of the engagement;</li> <li>• the professional standard(s) against which the engagement was performed;</li> <li>• who the assurance provider is; and</li> <li>• the outcome of the engagement, for example, whether the assurance provider’s conclusion is unqualified or modified.”</li> </ul>

Standard	Legislation	Disclosure recommendation/requirement
United Nations' High-Level Expert Group (UN HLEG)	Integrity Matters: Net Zero Commitments By Businesses, Financial Institutions, Cities And Regions <sup>161</sup>	"Non-state actors must have their reported emissions reductions verified by independent third parties."
Partnership for Carbon Accounting Financials (PCAF)	The Global GHG Accounting & Reporting Standard: Part A, Financed Emissions <sup>162</sup>	"Over time and where possible, data should be verified to at least a level of limited assurance."

**Table 19 – Guidance and recommendations from climate-related NGOs on the assurance of other climate target-related data**

Standard	Legislation	Disclosure recommendation/requirement
CDP	Climate Change 2023 Reporting Guidance <sup>163</sup>	Question 10.2a in the 2023 Climate Change Question-naire asks "Which data points within your CDP disclosure have been verified, and which verification standards were used?" Of the prepopulated response options, the following are included: <ul style="list-style-type: none"> <li>• "Year on year change in emissions"</li> <li>• "Financial or other base year data points used to set a science-based target"</li> <li>• "Progress against emissions reduction target"</li> </ul>
International Organization for Standardization (ISO)	Net zero guidelines <sup>164</sup> IWA 42:2022(E)	"Governance organizations should set requirements for competent annual third-party verification of emissions reporting, absolute emissions reduction targets and full information about implementation plans and timelines, as well as how plans fit with applicable science-based pathways."
Assessing low-Carbon Transitions (ACT)	Assessing low-Carbon Transition: Generic <sup>165</sup>	"Under the ACT project, the data required for the assessment shall be verified or verifiable."
UN High-Level Expert Group (HLEG)	Integrity Matters: Net Zero Commitments by Businesses, Financial Institutions, Cities and Regions <sup>167</sup>	"Non-state actors must report publicly every year, and in detail, on their progress, including greenhouse gas data, in a way that can be compared with the baseline they set. Reports should be independently verified."

# APPENDIX E: SELECT CLIMATE FRAMEWORKS, GUIDANCE AND REGULATIONS



Criteria	<a href="#">2023 CDP Climate Change Reporting Guidance</a>	<a href="#">GHG Protocol Corporate Standard</a>	<a href="#">GFANZ FI Net-Zero Transition Plans</a>	<a href="#">Consolidated Set of the GRI Standards</a>	<a href="#">TCFD: Metrics, Targets, and Transition Plans</a>	<a href="#">Draft IFRS S1</a>	<a href="#">ACT: Assessing low-Carbon Transition - Generic</a>
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## General

Geographic applicability	Global	Global	Global	Global	Global	Global	Global
Additional sector specific guidance available?	Yes	No	No	Yes	Yes	No	Yes
Applicable to specific company type? If so, what?	General and specific offerings	No	FI only	No	No	No	No

## GHG emissions

Alignment with financial statements	Equity share, financial control, operational control	Equity share, financial control, operational control	No	Equity share, financial control, operational control	No	No	No
Include guidance relating to scope 1 and 2 GHG emissions disclosures?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Include guidance relating to scope 3 GHG emissions disclosures?	Yes	Yes	Yes	Yes	Yes	Yes	Yes



<a href="#">ISO Net zero guidelines [IWA 42:2022(E)]</a>	<a href="#">CA100+ Net Zero Company Benchmark 2.0</a>	<a href="#">TPT Disclosure Framework</a>	<a href="#">HLEG: Integrity Matters</a>	<a href="#">UN NZAOA - Target Setting Protocol (third edition)</a>	<a href="#">PCAF Financed Emissions - Global GHG Accounting &amp; Reporting Standard</a>	<a href="#">CSRD</a>	<a href="#">US SEC</a>
<a href="#">ESRS 1</a>							
Global	Global	UK	Global	Global	Global	EU	US
No	No	Yes	No	Yes	No	No	No
No	Largest emitters	Private	No	FI	FI	No	Public companies
Equity share or control (territorial, financial, and operational)	No	Financial control, operational control	No	Equity share, operational control, or financial control	Equity share, operational control, or financial control	No	Financial control, operational control
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Criteria	<a href="#">2023 CDP Climate Change Reporting Guidance</a>	<a href="#">GHG Protocol Corporate Standard</a>	<a href="#">GFANZ FI Net-Zero Transition Plans</a>	<a href="#">Consolidated Set of the GRI Standards</a>	<a href="#">TCFD: Metrics, Targets, and Transition Plans</a>	<a href="#">Draft IFRS S1</a>	<a href="#">ACT: Assessing low-Carbon Transition - Generic</a>
<b>GHG emissions</b>							
Including guidance relating to GHG emission intensity disclosures?	Yes	Yes	Yes	Yes	Yes	No	Yes
Expecting assurance over GHG emissions inventory?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<b>Target description</b>							
Expecting climate-related target?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
If so, is a type specified? If so, what is it?	Yes (long list)	Absolute, intensity GHG	Net zero	No	No	No	Building, transport, industry energy consumption, industry direct process - refrigerant or other, waste management, renewable energy share in electricity
Are they incentivizing certain attributes of those targets? (i.e., grade or score or rating or boundaries)	Yes	No	No	No	No	No	Yes

<a href="#">ISO Net zero guidelines [IWA 42:2022(E)]</a>	<a href="#">CA100+ Net Zero Company Benchmark 2.0</a>	<a href="#">TPT Disclosure Framework</a>	<a href="#">HLEG: Integrity Matters</a>	<a href="#">UN NZAOA - Target Setting Protocol (third edition)</a>	<a href="#">PCAF Financed Emissions - Global GHG Accounting &amp; Reporting Standard</a>	<a href="#">CSRD</a>	<a href="#">US SEC</a>
No	Yes	Yes	No	Yes	Yes	Yes	Yes
Yes	No	Yes	Yes	No	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Net-zero, interim, long-term, carbon budget	Absolute, intensity, net-zero	Absolute, intensity, net-zero	Net-zero with interim targets (absolute only)	Absolute and intensity sector, engagement, sub-portfolio, financing transition	Absolute, intensity, net-zero	Absolute	No
Yes	Yes	No	Yes	No	No	No	No

Criteria	<a href="#">2023 CDP Climate Change Reporting Guidance</a>	<a href="#">GHG Protocol Corporate Standard</a>	<a href="#">GFANZ FI Net-Zero Transition Plans</a>	<a href="#">Consolidated Set of the GRI Standards</a>	<a href="#">TCFD: Metrics, Targets, and Transition Plans</a>	<a href="#">Draft IFRS S1</a>	<a href="#">ACT: Assessing low-Carbon Transition - Generic</a>
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## Target description

Target setting method specified? (method justifications, SDA, etc.)	Yes (long list)	No	SDA	No	No	No	ACT sectoral methodologies or SDA, absolute contraction
Significance thresholds? Recalc? Baseline?	Yes	Yes	Yes	No	Yes	Yes	No

## Target progress

Expected to disclose progress?	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Expected to disclose updated progress after significant changes?	Yes	Yes	Refer to GHGP and PCAF	No	No	Yes	No
Including guidance relating to transition plan disclosures?	Yes	No	Yes	No	Yes	No	Yes
Including guidance relating to climate-related financial indicator disclosures?	Yes	Yes	Yes	No	Yes	Yes	Yes



<a href="#">ISO Net zero guidelines [IWA 42:2022(E)]</a>	<a href="#">CA100+ Net Zero Company Benchmark 2.0</a>	<a href="#">TPT Disclosure Framework</a>	<a href="#">HLEG: Integrity Matters</a>	<a href="#">UN NZAOA - Target Setting Protocol (third edition)</a>	<a href="#">PCAF Financed Emissions - Global GHG Accounting &amp; Reporting Standard</a>	<a href="#">CSRD</a>	<a href="#">US SEC</a>
Sector-specific, science-based (1.5 degrees)	No	No	No	SDA	No	No	No
Yes	No	Yes	No	Yes	Yes	Yes	No
Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
No	No	No	No	No	Yes	Yes	No
Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Criteria	<a href="#">2023 CDP Climate Change Reporting Guidance</a>	<a href="#">GHG Protocol Corporate Standard</a>	<a href="#">GFANZ FI Net-Zero Transition Plans</a>	<a href="#">Consolidated Set of the GRI Standards</a>	<a href="#">TCFD: Metrics, Targets, and Transition Plans</a>	<a href="#">Draft IFRS S1</a>	<a href="#">ACT: Assessing low-Carbon Transition - Generic</a>
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## Target progress

Are they incentivizing certain attributes of target progress? (i.e., grade or score or rating or boundaries)	Yes	No	No	No	No	No	Yes
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Expecting assurance over target-related data?	Yes	No	No	No	Yes	Yes	Yes
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<a href="#">ISO Net zero guidelines [IWA 42:2022(E)]</a>	<a href="#">CA100+ Net Zero Company Benchmark 2.0</a>	<a href="#">TPT Disclosure Framework</a>	<a href="#">HLEG: Integrity Matters</a>	<a href="#">UN NZAOA - Target Setting Protocol (third edition)</a>	<a href="#">PCAF Financed Emissions - Global GHG Accounting &amp; Reporting Standard</a>	<a href="#">CSRD</a>	<a href="#">US SEC</a>
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Yes	Yes	No	Yes	No	No	No	No
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Yes	No	No	Yes	No	No	Yes	No
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## ENDNOTES

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