Investor Group on Climate Change

CORPORATE CLIMATE TRANSITION PLANS:

A guide to investor expectations

About the Investor Group on Climate Change

The Investor Group on Climate Change (IGCC) is a collaboration of Australian and New Zealand institutional investors focused on how climate change affects investments. It represents investors with total assets under management of over $3.6 trillion in Australia and New Zealand and $33 trillion worldwide. IGCC members include over 7.5 million people in Australia and New Zealand.
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CONTENTS

INTRODUCTION

Background

The Intergovernmental Panel on Climate Change's (IPCC) special report on global warming of 1.5 °C [1] has made it strikingly clear that global temperature increases need to be restricted to 1.5 °C with limited or no overshoot to avoid the worst impacts of climate change. Achieving this aim requires global emissions to fall by 45% from 2010 levels by 2030 to reach net zero by 2050. The International Energy Agency's (IEA) Net Zero by 2050 scenario (NZE) [2], which is consistent with this aim, models a 45% reduction in energy-related CO_2 emissions from 2019 to 2030. However, when including the rapid reductions required in the agriculture, forestry and land use sector, total emissions will need to fall by an even higher percentage.

A total of 74 national net zero targets (covering a total of 81 countries and 90% of global gross domestic product [3]) were set at the 2021 United Nations Climate Change Conference (COP26), with most aiming for 2050 or earlier [4]. This represents a market signal for investors who are following suit. Net zero investor initiatives are attracting considerable support, including, as of December 2021, the UN-Convened Net-Zero Asset Owner Alliance (NZAOA) [5] (61 signatories and $10 trillion of assets under management [AUM]), the Net Zero Asset Managers initiative [6] (220 signatories and $57 trillion of AUM), and the Paris Aligned Investment Initiative [7] (51 signatories and $2.9 trillion of AUM). Launched at COP26, the Glasgow Financial Alliance for Net Zero (GFANZ) initiative has ensured that $130 trillion in private capital is committed to net zero by 2050 and halting warming at 1.5 °C [8].

Climate transition plans

Investors are increasingly scrutinising whether the companies they invest in have the capacity to transition to net zero emissions by 2050. Accordingly, many listed companies, particularly those in carbon-intensive sectors, are being asked to prepare detailed climate transition plans or climate transition action plans, showing how they intend to transition to a net zero emissions company by 2050 or sooner.

Regulators, civil society and other stakeholders are increasingly calling on companies to prepare detailed climate transition plans detailing their emissions reduction targets and how they intend to decarbonise their businesses, aligned with the global push to net zero emissions. At COP26 in Glasgow, the Government of the United Kingdom revealed plans to mandate 'net zero transition plans' for asset managers, regulated asset owners and listed companies [9]. In October 2021, the Task Force on Climate-Related Financial Disclosures (TCFD) released its 'Guidance on Metrics, Targets, and Transition Plans' [10]. As part of their broader recommendations [11], which have identified transition risks as material, they urged companies to develop climate transition plans. Climate transition plans are also needed to inform the growing use of Say on Climate votes at companies' annual general meetings (AGM), engagement activities and to facilitate investors' reporting on their climate targets. These converging trends suggest that climate transition plans will become a standard feature of corporate reporting.

Some companies are already producing standalone climate transition plans, and many others incorporate relevant elements within their annual financial, climate or sustainability reporting. This disclosure typically provides the companies' emissions reduction targets and broadly how they intend to deliver on them. However, much of this disclosure is either inadequate or reveals plans that are inconsistent with net zero targets, as shown by the first assessments released of the 167 companies engaged by Climate Action 100+ (CA100+) in its inaugural Net Zero Company Benchmark [12]. As of January 2021, 52% of the companies assessed by CA100+ (83 out of 159) had long-term operational net zero emissions targets, and only 7%[1] (11) had medium-term targets aligned with limiting warming to 1.5 °C or below 2 °C[2] relevant net zero emissions pathway. Restricting temperature increases to 1.5 °C requires action to halve emissions by 2030. However, only 35% (56) had provided strategies consistent with net zero, and 4% (6) had explicitly aligned their capital expenditure (CapEx) with their decarbonisation objectives.

1 Only accounts for targets where a credible 1.5°C or below 2°C scenario exists for the assessed company's sector.
2 The CA100+ benchmark assessed whether targets were aligned with or below the trajectory for the company's respective sector to achieve the Paris Agreement's goal of limiting the global temperature increase to 1.5°C with low or no overshoot.

There is presently little consolidated or detailed guidance on investors' expectations of climate transition plans, the elements they should contain and how investors should assess their credibility and feasibility. The existing guidance and frameworks do not necessarily support investors to determine what constitutes credible company climate transition plans. Therefore, it is difficult for companies to draft adequate plans for meeting investor demands.

Report purpose and approach

This paper was developed to detail what investors should expect of companies developing climate transition plans that are seeking alignment with net zero emissions by 2050 or sooner. It aims to provide guidance for companies creating these plans and an overarching framework for investors to assess these plans. This guide is not intended as an additional list of requirements but rather consolidates existing guidance specific to company transition plans focusing on investor views and expectations. This report focuses on carbon intensive companies; however, it is expected that this guidance will be useful beyond the sectors mentioned here.

Methodology and sources

These expectations were formulated from consultations with investors and a significant literature review of existing frameworks, benchmarks and guidance to provide consistency with existing frameworks and standards. While a more extensive review was undertaken, the Investor Group on Climate Change (IGCC) has only included guidance in the public domain that has been developed by climate research organisations and investor organisations and initiatives. Some of the guidance used in this paper is in draft or discussion paper form.

CORPORATE CLIMATE TRANSITION PLANS

What is a climate transition plan?

A climate transition plan (or climate transition action plan) is a time-bound plan that outlines how a company will align its business model with its decarbonisation goals. This paper details expectations for climate transition plans with ambitions for net zero emissions by 2050 (or limiting the global temperature increase to 1.5 °C) and may include interim and long-term emissions reduction targets and overall strategies and actions to meet these targets. This information can be included within a company's existing TCFD, financial, climate or sustainability disclosure or as a standalone report.

Why are they needed?

Investors are seeking greater transparency to make informed assessments and comparisons of a company's ability to transition to net zero, manage climate risks and take advantage of climate-related opportunities. Companies will need to provide investors with credible transition plans if they wish to retain and attract quality, long-term capital. The 2021 IEA World Energy Outlook [13] identified that a large share of the investment required to reach net zero emissions must come from emissions-intensive companies and, therefore, have both the responsibility and capacity to reduce emissions. Investors want to know how they can differentiate those companies that are on a long-term credible transition pathway from those that are operating 'business as usual' or 'greenwashing'.

Investors use climate transition plans to:

- inform capital allocation and investment decisions
- support ongoing engagement and stewardship priorities with companies
- support voting on climate-related shareholder resolutions, director elections, remuneration, Say on Climate votes and other matters at company AGMs
- support their disclosures against their climate targets and commitments to their stakeholders
- assess portfolio alignments with their climate policies and targets.

While this report focuses on the expectations and opportunities for companies preparing and disclosing climate transition plans, it is worth noting that investors are also under considerable pressure from stakeholders, including beneficiaries, clients, regulators, civil society and other actors, to detail their own climate policies, targets and plans to decarbonise across their asset classes.

The recent Climate Bonds Initiative position paper [14] on transition finance highlighted that many carbon-intensive companies would also be aiming to attract investors in transition bonds and other debt instruments to finance their transitions. Companies with a credible climate transition plan will create investor confidence across both equity and debt asset classes.

A Say on Climate for global investors

In late 2020, the Children's Investment Fund Foundation (CIFF) launched Say on Climate[3], a campaign to encourage companies to offer their shareholders a vote on their climate transition plans at company AGMs.

Since the launch, the campaign has attracted considerable support from mainstream investors and companies. Companies such as BP, Shell, Glencore, BHP, Unilever, Woodside, Santos and Incitec Pivot have committed to offering investors a vote on their transition plans, either annually or at another interval. CIFF has published a list of expectations for climate transition plans [15], which sits alongside an increasing body of guidance that is referenced throughout this paper.

CIFF's expectations for climate transition plans are incorporated into Appendix A of this report and on their website.

3 https://sayonclimate.org/

PRINCIPLES OF CREDIBLE CLIMATE TRANSITION PLANS

The fundamental question companies and investors must ask is: what comprises a credible corporate climate transition plan?

What are the basic principles for a credible plan?

The IGCC has identified five common principles important for credible transition plans from a review of existing transition plan frameworks and guidance. These principles are specific to the key technical and financial expectations of a robust, net zero transition strategy:

1. Set comprehensive, science-based quantitative targets across all material emission scopes.
2. Outline a strategy to deliver targets, identifying enablers and disclose quantifiable impacts.
3. Set sector-specific commitments and actions aligned with 1.5 °C decarbonisation pathways.
4. Ensure investment commitments (capital expenditures) align with targets.
5. Commit to annual transparent disclosure and monitoring with external verification.

A list of guidance documents and frameworks that were reviewed to identify common themes related to company transition plans can be found in the References, and the full details are provided in Appendix A.

Companies should also report on the broader, overarching climate-related topics, including:

- governance
- just transition
- climate policies and lobbying
- scenario analysis.

These topics are foundationally critical and ensure the technical and financial expectations covered in this paper are achieved. Companies will still need to consider and plan for these topics and include them in their climate transition plans where appropriate; however, these aspects are not the focus of this paper.

INVESTOR EXPECTATIONS FOR COMPANY CLIMATE TRANSITION PLANS

The following set of key requirements and expectations related to each common principle are designed to be helpful for engagement and informing investor decision-making. They are intended to provide guidance and consolidate information already in the public domain, specifically for developing company climate transition plans.

PRINCIPLE ONE:
Set comprehensive, science-based quantitative targets across all material emissions scopes

While there is broad agreement that targets need to be comprehensive and aligned with the goals of the Paris Agreement goals [16] of limiting the global temperature increase to 1.5 °C with low or no overshoot (equivalent to the IPCC's special report on 1.5 °C pathway P1 [1] or net zero emissions by 2050), it can be challenging for investors to assess individual company targets. The CA100+ benchmark methodology assesses whether targets are aligned with or below the company's relevant sector trajectory. The upcoming CA100+ company assessments in March 2022 will be assessed against a 1.5 °C pathway that incorporates the IEA's NZE [2] scenario released May 2021 for most companies. However, the following sectors will be excluded from this pathway because data is not yet available: chemicals, coal mining, consumer goods and services, oil and gas distribution, other industrials and other transport. Additionally, the autos sector will be assessed against the 2 °C scenario (high efficiency), and the paper sector will be assessed against the beyond 2 °C scenario [17]. While this paper focuses on carbon-intensive pathways, companies outside these sectors may refer to the Science Based Targets initiative's (SBTi) absolute contraction methodology when setting targets [18].

Investor feedback indicates the most reliable approach is to set a target with independent verification; for example, a target verified by the SBTi or scored as 'aligned' with the Paris Agreement under indicators 2.3, 3.3 and 4.3 of the Transition Pathway Initiative's methodology as part of the CA100+ Net Zero Company Benchmark. Other forms of independent verification can also be considered.

Table 1 (next page) consolidates the standards for setting targets.

Table 1. Summary of expectations for principle one

1.1	**Net zero ambition date should be set relative to the most granular, ambitious, science-based 1.5 °C decarbonisation pathways available for the sector.** Material Scope 3 emissions should be included in net zero commitments.
1.2	**Targets should cover at least 95% of Scope 1 and 2 emissions** (additional disclosure should include sites covered by this target).
1.3	**Companies should set separate short-, medium- and long-term targets that are consistent with a net zero pathway (see principle three for sector-specific requirements) and covers all material emissions.** Targets should be measured as a reduction in actual emissions relative to emissions in a historical base year (not avoided emissions relative to a 'business as usual' projection). The years 2030 and 2050 have become key dates following the Intergovernmental Panel on Climate Change's special report on global warming of 1.5 °C [1]. However, the company may specify different dates, depending on the sector's pathway to net zero.
1.4	**Targets should be set for the firm's most material Scope 3 emissions and be explicit about which emissions the target applies to.** See Appendix C for Scope 3 applicability and calculation guidance by sector [19]. Fossil fuel producers, in particular, should set short, medium- and long-term targets that apply to Scope 3 emissions from product end users.
1.5	**Targets should specify whether emissions are accounted for under the operational, financial or equity share approach**. Companies should avoid omitting any emissions by employing one approach over another in their target calculation, and if they do, they should disclose why. The approach should cover the larger share of emissions.
1.6	**Setting either absolute or intensity science-based targets is acceptable**. However, companies should disclose what intensity targets mean in absolute terms, and targets should align with net zero by 2050 or sooner in absolute terms. Investors prefer independently verified targets, including those by the Transition Pathway Initiative or Science Based Targets initiative, to provide credibility.
1.7	**Target baselines are representative of the business** and usually the most recent year (a multi-year average may be used). Targets should be set against the most recent base year unless significantly affected by COVID-19, in which case, the base year of 2019 is recommended or a three-year average, as described by the Greenhouse Gas Protocol. If the relevance of the target is compromised by a material change in the company's structure, base year inventory or projections/assumptions, the target should be re-baselined with a clear explanation of the reason and method (e.g., divestment of high emitting assets, acquisitions, mergers, changes in goods or service offerings or the discovery of calculation errors).

More details on the references used to develop these standards can be found in Appendix A

PRINCIPLE TWO:
Outline a strategy to deliver targets, identifying enablers and disclose quantifiable impacts

Companies should identify specific actions, often at the level of the emissions source, that they will take to reduce emissions over the period of their emissions reduction commitments as part of their climate transition plan. This level of granularity allows investors to confirm the company has a plan for its targets, which provides confidence, and assess the credibility of those actions. It also allows companies to account for 'step changes' in emissions due to nonlinear pathways towards net zero, which often occur when assets are shut down/exited, electricity is switched to renewable sources or major retrofitting for energy efficiency occurs. Achieving net zero ambitions is often highly dependent on several expectations and enablers such as emerging breakthrough technologies, policy settings, demand pathways and competitive business positions. This principle aims to strike a balance between delivering these targets, progressing towards these goals and the uncertainty over external drivers that a company may encounter.

Many companies have indicated they intend to use offsets and negative emissions technologies as part of meeting their net zero targets. While many companies are exploring carbon removal via technology-based solutions such as carbon capture and storage or carbon capture, utilisation and storage (CCS/CCUS) or nature-based solutions to align with a 1.5 °C pathway, the use of these for all but the most 'hard-to-abate' or residual emissions appears unlikely to meet carbon budgets [20] and are generally not considered credible approaches.

Over-reliance on offsets and nature-based solutions potentially delays efforts to abate emissions within a company's value chain and may not account for the limited land and space available to host additional tree coverage or overestimates carbon storage potential [21]. CCS/CCUS technology and economics, including issues of leakage and liability, continue to pose challenges.

The SBTi's corporate net zero standard [18] provides a useful guide that proposes broad science-based targets that will favour abatement over neutralisation and the use of offsets is only for emissions that are outside a company's value chain and cannot be counted towards science-based targets.

Table 2 (next page) summarises the expectations for outlining strategies to deliver targets, identifying enablers and quantifiable impacts.

Table 2. Summary of investor expectations for principle two

2.1 **There are milestones, actions and performance outcomes at each step within the business (and across the value chain), and the assumptions driving each element are disclosed and aligned with sector-specific requirements as per principle three.**

a. Specific actions and individual contributions to the emission target should be clearly stated. The total contribution of individual actions should account for 75% of medium-term and 50% of long-term reduction. Actions to close the gap or reasons for the gap between the total identified actions and the emissions target should be stated (e.g., disclosure of pilot studies).

b. A less granular road map is sufficient for the long-term target period, and actions should account for at least 50% of the long-term reduction. Qualitative narratives should accompany emissions that do not yet have solutions or options being considered.

c. Companies should take technically possible and feasible actions first within the value chain in the short and medium term, such as retrofits, energy efficiency measures and switching to renewable electricity (e.g., setting 100% renewable energy Scope 2 targets). The basis for which actions have been chosen should be stated and be appropriate for the sector pathway set out in principle three.

d. Performance outcomes of key actions should be regularly reported for investors to track progress against commitments.

2.2 **Quantitative Scope 3 abatement targets are preferred.** However, system change targets, such as supplier/customer engagement targets and frameworks, research and development targets or a clear plan for supply chain engagement, are alternatives for companies that cannot set quantitative targets in the short term. This is not appropriate for targets related to fossil fuel extraction, sales and distribution—quantitative targets linked to phasing out of fossil fuels should be set for these sectors.

2.3 **Offsets should follow a mitigation hierarchy that prioritises eliminating emissions within the value chain.** If no alternatives exist, offsets should be used as a last resort to neutralise residual emissions estimated by a credible sector-specific 1.5 °C pathway.

2.4 If offsets are part of the transition plan, the company should disclose:

a. the proportion of the target consisting of offsets

b. which emissions have been offset and why the emissions are not possible to abate

c. the proportion of offsets from nature-based solutions and carbon capture and storage (CCS) and carbon capture, utilisation and storage (CCUS) or other technology-based solutions

d. the average price paid for offsets and assumptions about regulations, offset availabilities, prices, permanency and impacts over the transition plan's time frame

e. the intended time frame for using offsets (e.g., how offsets will be used at specific times)

f. what criteria the company will use to assess the credibility of offsets for attributes such as offset types, scheme providers, storage mechanisms, permanence and additionality

g. whether the company plans to generate offsets from its own operations or value chain, and if relevant, how double-counting of emissions reductions will be avoided.

2.5 **Negative emissions technologies** (e.g., bioenergy with carbon capture and storage or direct air capture) **should be limited to a small proportion of overall emissions reductions unless there are no alternative abatement options.** Some sectors are likely to require CCS/CCUS (for more information about sector pathways, see principle three). Companies should disclose why these technologies have been used, the current and future availability of CCS/CCUS (e.g., assess the company's required technical and cost trajectories of CCS/CCUS against actual trajectories), the external drivers and barriers, the time frame for current actions required to develop future technologies, the underlying assumptions and contingency planning in the event of carbon capture shortfalls.

2.6 **Set and disclose separate goals and targets for 'green' or 'low-carbon' initiatives and their expected contributions towards greenhouse gas targets.** Companies should disclose the share of 'green revenues'[4] in overall sales and the nature of these products and services.

Decarbonisation pathways are unclear or may be hard to abate for many sectors. Sector-specific information, actions and requirements have been developed, or are being developed, by several market participants, for example, the Climate Action 100+ Global Sector Strategies workstream. Refer to Appendix B for a list of suggested sector-specific resources.

More details on the references used to develop these standards can be found in Appendix A

4 Includes a broad set of green products and services that are recognised under the FTSE Russell Green Revenues Classification System and are aligned with the European Union's taxonomy for sustainable activities.

PRINCIPLE THREE:
Set sector-specific commitments and actions aligned with 1.5 °C decarbonisation pathways

Companies establishing transition plans should be setting targets, commitments and actions that align with a credible trajectory and/or methodology for that sector, such as the CA100+ Global Sector Strategies (GSS) [22] papers.

It is widely accepted that the pathways and time frames for net zero emissions by 2050 differ by sector [2]. Some sectors have readily available and commercial abatement opportunities, while for others, those considered 'hard-to-abate', the pathways to decarbonisation are not always clear and straightforward. In some cases, the technologies required for the transition are still in their infancy. There is a shared need for investors, companies and other stakeholders to understand what net zero pathways for certain sectors look like and what actions and interventions are required to achieve these in each different period.

The CA100+ GSS [22] workstream has recently published several papers addressing these gaps in the market. Table 3 summarises the sector-specific actions. Refer to the papers directly for actions that are not sector-specific and other general expectations. Upcoming GSS papers include trucks and diversified mining.

Company climate transition plans should reflect the latest guidance as it becomes available. Further sector-specific papers are provided in Appendix B.

Table three: Set sector-specific commitments and actions aligned with 1.5 °C decarbonisation pathways

Sector: Aviation [23]	
Key challenges	**Summary of key sector-specific actions**
» additional warming potential and future liability of non-CO_2 climate impacts (e.g., contrails and cloud formations) » need for significant and urgent investments in supply-side solutions (e.g., SAFs) » forecast growth of demand throughout the twenty-first century	1. Support researching, developing and scaling key decarbonisation technologies, including SAFs, new aircraft technologies that can improve efficiency and reduce emissions and fuel use, and alternative propulsion technologies. 2. Accelerate adopting SAFs, including advanced biofuels and synthetic fuels, including: » actively supporting investments in SAFs » developing pricing and ticketing options for consumers that cover the cost of using SAFs on flights » forming coalitions—with airlines and other stakeholders—that support interventions to promote SAF uptake » supporting the development and adoption of global standards and credible third-party certification processes to ensure that the life cycle emissions and overall sustainability of SAFs are adequately addressed and managed » supporting the development and adoption of metrics for measuring, reporting and verifying the life cycle GHG emissions and other environmental impacts of SAFs. 3. Support research into the impacts of non-CO_2 effects from aviation and how these can be mitigated.

Sector: Sector: Steel [24]	
Key challenges	**Summary of key sector-specific actions**
» need for substantial investments in emerging low-carbon steelmaking technology (e.g., DRI-EAF and CCS/CCUS) » requires coordination across a complex global supply chain	1. Set short-, medium- and long-term targets consistent with the IEA NZE scenario. The IEA NZE data models Scope 1 emissions in the iron and steel industry falling 29% by 2030 and 91% by 2050 compared to 2019 levels. Further work is needed to define the exact emissions pathway implied by net zero by 2050; however, factoring in Scope 2, it is likely to imply that total emissions from steel should fall even faster. 2. Increase the proportion of steel produced by the scrap-EAF process. If increasingly fed by low-cost and low-carbon electricity, a shift to 60% production from scrap could cut overall emissions by 2.4 $GtCO_2e$ annually (51%) vs BAU without substantially increasing production costs. In markets where this process is already well established, engagement with policymakers, customers and scrap processors would be necessary. 3. Further incremental improvements in the energy efficiency of existing steel production capacity by adopting the best available techniques can reduce emissions by 1.2 $GtCO_2e$ (24%) annually vs BAU. These measures are often self-funding with short pay pack periods. 4. Investment in DRI-EAF capacity is needed to decarbonise primary steel production. Investment may include: » Shifting from BF-BOF to DRI-EAF is required to enable the substitution of metallurgical coal for natural gas. » These facilities must be converted to green hydrogen as it becomes available and cost-effective. Assuming that three quarters of the DRI-EAF production is fuelled by green hydrogen by 2050, this shift could reduce annual emissions by 1.2 metric tonnes of CO_2 equivalent (23%) relative to BAU. » Overall, an approach that combines scrap steel recycling and hydrogen-based DRI is currently considered the most viable long-term solution for achieving carbon-neutral steel production. 5. Adapt CCS/CCUS technology to fossil-based steel production plants when technically and economically feasible. Investment in CCS/CCUS will likely be needed to cut emissions from the remaining emission-intensive capacities. In our model, we assume that CCS/CCUS achieves an emissions reduction of 0.7 $GtCO_2e$ (14%) relative to BAU ('Measure 5'). However, CCS/CCUS may not be economical or feasible in all locations.

Sector: Food and beverage [25]	
Key challenges	**Summary of key sector-specific actions**
» emissions embedded across a complex and global value chain » wide range of intersecting issues to consider (e.g., emissions, plastics, water and waste management and land use changes)	1. Integrate climate action into corporate decision-making processes and procurement policies and standards. Achieve supply chain traceability, and embed a commitment to a no deforestation and no conversion supply chain. 2. Incentivise and support producers to reduce crop and livestock production impacts and enhance agricultural carbon sequestration. Take action to: » focus procurement spending on sustainably produced commodities » engage certification bodies and actors along the supply chain to ensure that financial premiums reach producers » support producers' access to credit and other financing options, and provide producers with technical assistance » facilitate the transition to zero emissions on-farm machinery and irrigation in owned agricultural operations, and incentivise using agricultural practices that enhance on-farm carbon sequestration. 3. Align CapEx, product development and research and development with a 1.5 °C scenario by: » supporting the phase-out of hydrofluorocarbons » considering the GHG impacts of new expenditures and prioritising expenditures that reduce emissions and improve resilience » integrating life cycle GHG assessments into product developments » shifting marketing budgets to lower emissions products and transforming product portfolios, and making strategic research and development investments to develop innovative lower carbon products or technologies. 4. Transition to more efficient and renewable energy use and transportation across operations, distributions and supply chains by: » improving energy efficiency and shifting to renewable energy » maximising the use of space in vehicles and optimising transportation routes and distribution centres » investing in fleet electrification and support programs to expand charging infrastructure. 5. Improve processing, manufacturing and packaging practices to reduce emissions and food loss. For example: » conduct food loss audits and increase the efficiency of processing and manufacturing » divert food by-products and donate food surpluses.

Sector: Electric utilities [26]	
Key challenges	**Summary of key sector-specific actions**
» need for substantial upgrades to extensive legacy infrastructure	1. Set a target to achieve net zero emissions by 2035 in advanced economies and 2040 in developing markets. 2. Achieve a 50% reduction of emissions by 2030 or sooner. 3. Set two additional company-wide emissions targets following the approach adopted by the Science Based Targets initiative: » for all sold electricity (typically Scope 1 emissions plus emissions in Scope 3, category 3) » for all sold or distributed energy. 4. Establish and disclose a robust decarbonisation strategy, including: » focusing on measures that reduce gross emissions primarily by minimising the use of fossil fuels, particularly coal » minimising reliance on CCS/CCUS » avoiding carbon offsets to reduce generation emissions to net zero » setting a date for phasing out unabated coal generation » expecting to deploy negative emissions technologies, including BECCS, to be modestly emissions negative beyond 2040 (and 2035 for advanced economies) » disclosing both the expected total of low carbon generation (TWh) and the contribution of different technologies » establishing how any non-generation energy activities, including sales of third-party electricity, heat and natural gas, will be decarbonised. 5. Align CapEx plans to a 1.5 °C scenario by: » not investing in any new coal generation » ensuring that any new natural gas generation will be net zero by 2040 (2035 in advanced economies) » disclosing any planned and actual investments in CCS/CCUS and committing to deploy CCS/CCUS to abate emissions from any residual fossil fuel generation still running beyond 2040 (2035 in advanced economies) » disclosing a five-year CapEx budget for renewable deployments » where relevant, disclosing a five-year network infrastructure budget.

Sector: Oil and gas [27]	
Key challenges	**Summary of key sector-specific actions**
» must be transitioned out of global energy systems to meet the Paris Agreement's temperature goal » global energy transition must begin immediately to avoid catastrophic global heating and be coordinated to maintain and strengthen energy security and social stability and ensure a just transition for affected workers and communities	1. Reduce operational emissions to net zero by adopting and disclosing: » the consumption of 'green' energy » action plans and targets for verified methane emissions » zero routine flaring by 2030 » contribution of CCS/CCUS to operational emissions targets. 2. Reduce Scope 3 (category 11) emissions/fossil fuel sales by: » decreasing own production (total annual oil and gas production in both medium- and long-term targets) » decreasing oil/liquids/gas production (annual oil production in both medium- and long-term targets); if the decline rate is not aligned (at or below the level implied by the 1.5 °C pathway), supplemental operational and CapEx disclosure is required. 3. Netting off ('neutralising') residual gross emissions using: » CCS/CCUS, BECCS and direct air capture (conduct and publish study providing costs, timings and investment returns) » offsets (with costs in $ per tonne and total, type, mix and provider) » actions by a third party/supply chain (describe the intended actions and supplier/customer mix). 4. Increase sales of lower-carbon energy. Invest in adding 'green' production (annual energy production in both medium- and long-term targets [TJ], split self-built generation (CapEx) and PPAs [in TJ], all 'green' production should meet taxonomy criteria).

Note. BF-BOF = Blast furnace-blast oxygen furnace; CO_2 = carbon dioxide; SAF = sustainable aviation fuels; GHG = greenhouse gas; DRI = direct reduced iron; EAF = electric arc furnace; CCS = carbon capture and storage; CCUS = carbon capture, utilisation and storage; IEA = International Energy Agency; NZE = net zero by 2050 scenario; $GtCO_2e$ = gigatonne CO_2 equivalent emissions; TWh = terawatt-hour; BAU = business as usual; BECCS = bioenergy with carbon capture and storage; capital expenditure = CapEx; TJ = terajoule; PPA = power purchase agreements.

For additional relevant sector-related frameworks and standards, please see Appendix B

PRINCIPLE FOUR:
Ensure investment commitments (capital expenditures) are aligned with targets

Management priorities are judged based on where companies are currently investing their capital. Delivering on the targets and decarbonisation strategy set out in principles one and two will require aligning a company's capital investment strategy. Based on the recommendations of the IEA NZE [2] report, this will require rapidly decreasing investments in carbon intensive (particularly fossil fuel) infrastructure/assets and increasing 'green/low carbon' investments.

Measuring the alignment of capital investment strategies is complex, and further granular and quantitative guidance is an area for future development, especially at the sector level. However, certain parameters already exist for specific sectors. Indicator six of the CA100+ Net Zero Company Benchmark [12] is a helpful reference for companies seeking guidance around what to disclose regarding capital allocation and alignment with their climate targets. Additionally, the provisional Climate Accounting and Audit Indicator methodology of the CA100+ Net Zero Company Benchmark provides valuable information for financial statement disclosures.

While the benchmark provides overarching guidance for CapEx commitments, it does not set out guidance for what constitutes an ambitious CapEx amount in quantitative or proportional terms. Investors may currently assess CapEx figures on a case-by-case basis supplemented by sector-specific guidance such as the CA100+ GSS workstream papers to determine whether CapEx plans are ambitious or aligned with a net zero commitment. Comparing these capital assessments against peers is also helpful for assessing levels of ambition.

Table 4 summarises capital allocation expectations, acquisition and divestment expectations and useful financial statement disclosures.

Table 4. Summary of investor expectations for principle four

4.1	**Use the International Energy Agency's net zero by 2050 (NZE) scenario or a comparable, credible 1.5 °C pathway with a limited overshoot pathway to determine appropriate capital expenditure (CapEx) and disclose methodology.** CapEx plans should be consistent with broader net zero strategies and avoid investments inconsistent with the company's science-based short-, medium- and long-term net zero targets and the quantitative disclosures provided in principle two. Capital allocations should include all operations and assets, considering partial interests in assets. A 1.5 °C pathway may not exist for every sector; however, companies should start by stating that their capital allocation strategy is aligned with their emissions targets and net zero by 2050.
4.2	**Describe and, ideally, quantify the transition plan actions set out in principle two, key assumptions and estimates of climate change in financial statements and notes** or provide sensitivity analyses using such assumptions and estimates, particularly on future-orientated information that is not covered by accounting standards (e.g., estimates of the different decarbonisation actions described in principle two, including the useful life of assets, current and future estimates of: key input/output commodities, carbon taxes, carrying values, costs and effectiveness of carbon capture technologies, percentage shares of CapEx invested in carbon-intensive assets and the year in which capital will peak, and change in risk exposure in a low-carbon economy). Where investment in new fossil fuel projects is made, quantify what assumptions justify this investment.
4.3	**Disclose a forward-orientated CapEx budget** (at least three years) (e.g., specify upstream and exploration elements and report declining CapEx in assets being phased out and investments in low-carbon technologies). If targeted production declines are inconsistent with net zero, itemise discrepancies and provide additional disclosure on break-even costs for new and existing projects (e.g., investments in bioenergy with carbon capture and storage and other negative emissions technologies measures should also be specified). Sector-specific guidance for CapEx plans can be found in principle three, and further guidance on sectors is provided in Appendix B.
4.4	**Overarching capital allocation strategy, acquisitions and disposals and CapEx should be aligned with net zero.** Companies should not make acquisitions that compromise their commitments to net zero, and disposals of legacy fossil fuel assets should be to parties that intend to operate those assets in a manner consistent with net zero. Disclosure may include details of the operating plan, commitments to a just transition, closure provisions and rundown plans.

More details on the references used to develop these standards can be found in Appendix A

PRINCIPLE FIVE:
Commit to annual transparent disclosure and monitoring with external verification

Investors want to see consistent, annual reporting on progress, although they acknowledge that some elements of transition plans may take longer than a year to demonstrate changes. Disclosure requirements for climate risks and opportunities have grown significantly in recent years; however, gaps and inconsistencies exist. There is a burgeoning volume of disclosure templates, frameworks and requests from the market, as well as areas where standards are constantly evolving (e.g., methane, Scope 3 emissions and company emissions footprints). Additionally, investors are interested in the independent assurance of sustainability information, which provides comfort that reported information is accurate, transparent and reliable.

Table 5 summarises investor expectations over annual reporting and independent verification/review for key data.

Table 5. Summary of investor expectations for principle five

5.1	**Climate disclosures should be produced annually following the Task Force on Climate-Related Financial Disclosures' guidance and include transparent monitoring and disclosure of progress** towards short-, medium- and long-term (including net zero) targets.
5.2	**Decarbonisation targets should be independently verified or reviewed for alignment with net zero pathway** (e.g., by Science Based Targets initiative, Transition Pathway Initiative as part of the Climate Action 100+ benchmark or independent review by another verifier with relevant expertise) and are preferred by investors seeking confidence in disclosure. Details behind the target should be disclosed publicly.
5.3	**Gross greenhouse gas emissions (Scopes 1, 2 and 3) and crucial climate-related information should be reported and assured (e.g., by an independent greenhouse gas or environmental auditor).** At a minimum, underlying climate-related information should be disclosed and sufficiently verifiable by external stakeholders. Examples of key metrics that should be assured include scope 1, 2 and/or 3 emissions and reporting boundaries, gross vs net emissions, key performance indicators, performance against targets and key performance indicators, capital expenditures, emissions intensity denominator metrics or other quantifiable actions.
5.4	**If the company is a fossil fuel producer, the expected peak and decline in fossil fuel production and price forecasts should be disclosed alongside the company's diversification plans** (i.e., the growth pathway for renewables or alternative fuels products).

More details on the references used to develop these standards can be found in Appendix A

CONCLUSION

For the goals of the Paris Agreement to be achieved, companies must plan and deliver ambitious decarbonisation across all industries. This is particularly true in emissions intensive sectors such as those engaged by investors in CA100+. However, there is a long way to go if emissions are to be cut by 50% globally by 2030 and to reach net zero by 2050 to keep the planet on a trajectory towards limiting global warming to 1.5 °C.

This paper aims to help those companies preparing climate transition plans and investors engaging with these plans by summarising and consolidating existing guidance into a set of investor expectations. It is hoped that this also extends the thinking about what comprises a credible company climate transition plan, complementing other work that has recently been released or is due to be released, including publications by the GFANZ, SBTi, Climate Bonds Initiative, CA100+ and ClimateWorks Australia.

Feedback on this report

The IGCC invites feedback on the overarching principles and specific expectations provided in this report. It is also anticipated that other parties will release similar and/or complementary guidance or analyses of this topic, which will add further rigour and detail to the expectations of company transition plans. The IGCC may explore re-releasing this paper following an update based on feedback and incorporating new guidance and standards in the future.

Please email secretariat@igcc.org.au with any feedback or requests for engaging with the content of this report.

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GLOSSARY

1.5 °C	A global temperature increase of only 1.5 °C with low or no overshoot (equivalent to the Intergovernmental Panel on Climate Change's special report on 1.5 °C pathway P1 or net zero emissions by 2050).
abatement	A carbon (or equivalent) reduction within the reporting entity's value chain.
assurance	Obtaining assurance that the information, data or processes are accurate and the review process has been conducted by an independent, credible party (e.g., Science Based Targets initiative or Transition Pathway Initiative).
green revenue	Company revenue exposure to products and services that deliver environmental solutions, defined under the European Union's taxonomy for sustainable activities, the FTSE Green Revenues Index and other classification systems.
independent verification	A credible, independent party provides a review to ensure investors that information is accurate; does not require an explicit certification scheme.
net zero by 2050	A global temperature increase of only 1.5 °C with low or no overshoot (equivalent to the Intergovernmental Panel on Climate Change's special report on 1.5 °C pathway P1 or net zero emissions by 2050).
net zero emissions	The state where greenhouse gas emissions have been reduced to as close to zero as possible and the residual emissions have been effectively offset through lasting carbon sequestration methods.
offset	A carbon (or equivalent) reduction or removal outside the reporting entity's value chain.
science-based	Informed by the latest independent climate science.

LIST OF ABBREVIATIONS

AGM	annual general meeting
AUM	assets under management
CA100+	Climate Action 100+
CapEx	capital expenditure
CCS/CCUS	carbon capture and storage; carbon capture, utilisation and storage
CIFF	Children's Investment Fund Foundation
COP26	2021 United Nations Climate Change Conference
GFANZ	Glasgow Financial Alliance for Net Zero
IEA	International Energy Agency
IGCC	Investor Group on Climate Change
IPCC	Intergovernmental Panel on Climate Change
NZE	IEA's net zero by 2050 scenario
SBTi	Science-Based Targets initiative
TCFD	Task Force on Climate-Related Financial Disclosures

APPENDICES

Appendix A: Summary of transition plan principles and alignment with public frameworks and guidance

The transition plan principles and requirements set out throughout this paper have been reviewed against public frameworks and guidance to ensure consistency. Explanatory notes have been extracted from the relevant papers and tabled against each requirement.

No.	Requirements	Relevant frameworks and guidance supporting requirements	Requirements gaps or explanatory notes
1	**Set comprehensive, science-based quantitative targets across all material emissions scopes**		
1.1	Net zero ambition date should be set relative to the most granular, ambitious, science-based 1.5 °C decarbonisation pathways available for the sector. Material Scope 3 emissions should be included in net zero commitments.	SBTi Criteria and Recommendations v5 [28]	Companies are encouraged to develop long-term targets up to 2050 that must be consistent with the level of decarbonisation required to keep global temperature increase to 1.5 °C. Targets must assume a linear absolute reduction, linear intensity reduction, or intensity convergence between the most recent year and 2050.
		SBTi Net Zero Standard [18]	Corporate net zero is defined as reducing Scopes 1, 2 and 3 emissions to zero or to a residual level that is consistent with reaching net zero emissions at the global or sector level under eligible 1.5 °C-aligned pathways; and neutralising any residual emissions at the net zero target year and any GHG emissions released into the atmosphere thereafter.
		Children's Investment Fund Foundation (CIFF) Say on Climate - Climate Action Plans [15]	Emissions must be reduced by 50% by 2030. Companies should set a validated science-based 1.5 °C aligned 2050 target to guide their transition planning.
		Climate Bonds Initiative (CBI) Transition Finance for Transforming Companies [14]	Requires aligning with a common sectoral decarbonisation pathway compatible with keeping global warming below 2 °C and ideally 1.5 °C and halving global emissions by 2030. Companies in sectors with greater decarbonisation potential should front load emissions reductions as much as possible.
		CA100+ Net Zero Company Benchmark [12]	The company has set an ambition to achieve net zero GHG emissions by 2050 or sooner. The company's last disclosed carbon intensity or its short-, medium- or long-term targeted carbon intensity OR the company's expected carbon intensity derived from their long-term GHG target is aligned with or below the relevant sector trajectory needed to achieve the Paris Agreement goal of limiting global temperature increase to 1.5 °C with low or no overshoot in 2050.
		Australian Council of Superannuation Investors (ACSI) Governance Guidelines 2021 [30]	Align corporate strategy to the Paris Agreement and the objective of net zero emissions by 2050.
		Glasgow Financial Alliance for Net Zero (GFANZ) Progress report 2021 [8]	Explicitly state the ambition of the transition plan in terms of net zero date, interim targets, and the pathway used to develop the net zero transition plan.
		CDP climate transition plan: discussion paper [43]	Support a strategy for the transition that needs to occur for an organization to pivot towards a net zero future, i.e., halving greenhouse gas (GHG) emissions by 2030 and reaching net zero by 2050 at the latest, thereby limiting global warming to 1.5 °C.

No.	Requirements	Relevant frameworks and guidance supporting requirements	Requirements gaps or explanatory notes
1	**Set comprehensive, science-based quantitative targets across all material emissions scopes**		
1.2	Targets should cover at least 95% of Scope 1 and 2 emissions (additional disclosure should include sites covered by this target).	SBTi Criteria and Recommendations v5 [28]	Companies may exclude up to 5% of Scope 1 and 2 emissions combined in the boundary of the inventory and target.
		SBTi Net Zero Standard [18]	Near- and long-term targets must cover at least 95% of company-wide Scope 1 and 2 emissions.
		CA100+ Net Zero Company Benchmark [12]	Short-, medium- and long-term targets cover at least 95% of its total Scope 1 and 2 emissions.
		GHG protocol: A Corporate Accounting and Reporting Standard [29]	Apply a materiality threshold. The standard considers this a subjective judgement, though by 'rule of thumb' 5% is considered aligned.
		CDP climate transition plan: discussion paper [43]	The plan covers the whole organization i.e., any exclusions from the plan must not be material to the company and/or the environment (ensuring coverage of double materiality principle on exclusions).
		CBI Transition Finance for Transforming Companies [14]	Material Scope 1, 2 and 3 emissions should be included. No specification of materiality threshold.
1.3	Companies should set separate short-, medium- and long-term targets that are consistent with a net zero pathway (see principle three for sector-specific requirements) and covers all material emissions. Targets should be measured as a reduction in ctual emissions relative to emissions in a historical base year (not avoided emissions relative to a 'business as usual' projection). The years 2030 and 2050 have become key dates following the Intergovernmental Panel on Climate Change's special report on global warming of 1.5 °C [1]. However, the company may specify different dates, depending on the sector's pathway to net zero.	SBTi Criteria and Recommendations v5 [28]	Targets must cover a minimum of 5 years and maximum of 15 years. Avoided emissions fall under a separate accounting system from corporate inventories and do not count toward science-based targets.
		SBTi Net Zero standard [18]	Set near- (5-10 years) and long-term (no later than 2050) targets in line with 1.5 °C pathways. Avoided emissions occur outside of the product's life cycle and therefore do not count as a reduction of a company's Scope 1, 2 and 3 inventory.
		TCFD Guidance on Climate-related Metrics, Targets, and Transition Plans [10]	Time horizons should be defined and consistent with key dates. Tracked by climate-related organisations or regulators, and medium- and long-term targets should have interim targets. 2030 and 2050 have become key target dates following the publication of the Special Report on Global Warming of 1.5°C by the IPCC.
		CIFF Say on Climate - Climate Action Plans [15]	A long-term target (beyond 10 years) without a short-term plan (5 years) is inadequate. Short-term targets required: 5 year and 5–10-year plan.
		CBI Transition Finance for Transforming Companies [14]	Paris-aligned targets should address short- (to 2025), medium- (to 2030), and long-term (to 2050). Set company specific KPIs that align as early as possible with that pathway and address all material emissions (Scope 1, 2 and 3).
		CA100+ Net Zero Company Benchmark [12]	Indicators 2-4 set out requirements for short-, medium- and long-term targets. Targets must identify a base year, a target year and a percentage reduction.
		ACSI Governance Guidelines 2021 [30]	The company should set short-, medium- and long-term emissions reduction targets aligned to Paris Agreement.
		CDP climate transition plan: discussion paper [43]	Set five–ten-year near-term science-based targets (SBTs), and then long-term SBTs for 2050 at the latest.
		GFANZ Progress report 2021 [8]	Describe short-, medium- and long-term decarbonisation targets for the firm and individual business lines (if relevant).

No.	Requirements	Relevant frameworks and guidance supporting requirements	Requirements gaps or explanatory notes
1	**Set comprehensive, science-based quantitative targets across all material emissions scopes**		
1.4	Targets should be set for the firm's most material Scope 3 emissions and be explicit about which emissions the target applies to. See Appendix C for Scope 3 applicability and calculation guidance by sector [19]. Fossil fuel producers, in particular, should set short, medium- and long-term targets that apply to Scope 3 emissions from product end users.	SBTi Criteria and Recommendations v5 [28]	SBTi requires Scope 3 targets to be set if Scope 3 emissions are more than 40% of total emissions. Emission reduction targets and/or supplier or customer engagement targets must collectively cover at least two-thirds of Scope 3 emissions. Companies involved in the sale or distribution of fossil fuels must set near- and long-term Scope 3 targets for the use of sold products consistent with the level of decarbonisation required to keep global temperature increase to 1.5 °C.
		SBTi Net Zero Standard [18]	If a company's relevant Scope 3 emissions are 40% or more of total Scope 1, 2 and 3 emissions, Scope 3 must be included in the near-term science-based targets. All companies involved in the sale or distribution of fossil fuels shall set Scope 3 targets for the use of sold products, irrespective of the share of these emissions compared to the total Scopes 1, 2 and 3 emissions of the company.
		CA100+ Net Zero Company Benchmark [12]	Scope 3 targets must be set for specific sectors, each sector has specific Scope 3 categories for which a target must be set.
		Institutional Investors Group on Climate Change (IIGCC) Net Zero Standard for Oil and Gas [27]	A net zero ambition should be comprehensive, covering all energy related activities across all divisions, regions, equity stakes, and material emissions (it should include Scope 3 use of sold products and methane).
		CBI Transition Finance for Transforming Companies [14]	Scope 1, 2 and 3 emissions should be addressed.
		CIFF Say on Climate - Climate Action Plans [15]	Plan should include average absolute Scope 1-3 emissions reduction of 7-8% pa to 2030.
		Assessing Low-Carbon Transition Initiative (ACT Initiative) Framework [31]	All significant sources of direct and indirect emissions (i.e., Scopes 1, 2 and 3).
1.5	Targets should specify whether emissions are accounted under the operational, financial or equity share approach. Companies should avoid omitting any emissions by employing one approach over another in their target calculation, and if they do, they should disclose why. The approach should cover the larger share of emissions.	SBTi Criteria and Recommendations v5 [28]	Organisational boundaries should be consistent with the company's financial accounting and reporting procedures.
		GHG protocol A Corporate Accounting and Reporting Standard [29]	Recommends adopting an approach best suited to the company's business activities and GHG accounting and reporting requirements. While companies may choose to report emissions within the boundary of either operational or financial control, companies should make a good faith effort to avoid omitting emissions and reporting within a boundary that best represents the business' activities.
		ACT Initiative Framework [31]	May encompass all operations of a company and its entire value chain. Follows a "levers of change" approach.
		CDP climate transition plan: discussion paper [43]	The plan covers the whole organization i.e., any exclusions from the plan must not be material to the company and/or the environment (ensuring coverage of double materiality principle on exclusions).
		CBI Transition Finance for Transforming Companies [14]	Boundary of operational control defined in either financial or operational terms.
		SBTi Net Zero Standard [18]	Select a single approach of either operational control, financial control, or equity share. Emissions inventory must cover all seven GHGs or classes of GHGs covered by the UNFCCC.

No.	Requirements	Relevant frameworks and guidance supporting requirements	Requirements gaps or explanatory notes
1	**Set comprehensive, science-based quantitative targets across all material emissions scopes**		
1.6	Setting either absolute or intensity science-based targets is acceptable. However, companies should disclose what intensity targets mean in absolute terms, and targets should align with net zero by 2050 or sooner in absolute terms. Investors prefer independently verified targets, including those by the Transition Pathway Initiative or Science Based Targets initiative, to provide credibility.	SBTi Criteria and Recommendations v5 [28]; SBTi Net Zero Standard [18]	Absolute and intensity targets must be consistent with an approved 1.5 °C pathway. Targets to actively source renewable electricity may be used in replacement of Scope 2 targets: 80% renewable electricity procurement by 2025 and 100% by 2030. Sector-specific guidance for Scope 1, 2 and 3 target setting are provided. Additional sector-specific pathways and guidance papers are emerging however do not yet cover all major sectors.
		CA100+ Net Zero Company Benchmark [12]	A GHG emissions target must contain a percentage reduction (in terms of either absolute GHG emissions or GHG intensity) using TPI's methodology.
		GHG protocol A Corporate Accounting and Reporting Standard [29]	When setting intensity targets, the comparative metric should be carefully selected and to facilitate transparency, companies using an intensity target should also report the absolute emissions.
		CIFF Say on Climate – Climate Action Plans [15]	Average absolute Scope 1-3 emissions reduction of 7-8% p.a. to 2030.
		CBI Transition Finance for Transforming Companies [14]	Select sector-specific transition pathway aligned with Paris Agreement temperature goals. Set company specific KPIs that align as early as possible with that pathway and address all material emissions (Scope 1, 2 and 3). External reporting and independent verification on the KPIs and strategy to deliver.
1.7	Target baselines are representative of the business and usually the most recent year (a multi-year average may be used). Targets should be set against the most recent base year unless significantly affected by COVID-19, in which case, the base year of 2019 is recommended or a three-year average, as described by the Greenhouse Gas Protocol. If the relevance of the target is compromised by a material change in the company's structure, base year inventory or projections/assumptions, the target should be re-baselined with a clear explanation of the reason and method (e.g., divestment of high emitting assets, acquisitions, mergers, changes in goods or service offerings or the discovery of calculation errors).	SBTi Criteria and Recommendations v5 [28]	The choice of base year must be no earlier than 2015. Targets should be recalculated to reflect significant changes that compromise relevance and consistency of the existing target. Targets must be reviewed (and recalculated if necessary) every 5 years, if Scope 3 pass the 40% threshold of aggregate emissions, or if there are significant changes (e.g., boundary changes, company structure/activities, adjustments to inventory, changes to projections).
		GHG protocol A Corporate Accounting and Reporting Standard [29]	Most companies select a single year as their base year. If a single year's data is not representative, a multi-year average may be used. Targets should be recalculated to reflect significant changes that compromise relevance and consistency of the target. Companies may also use a rolling base year.
		TCFD Guidance on Climate-related Metrics, Targets, and Transition Plans [10]	Targets should be reviewed at least every five years and updated if necessary.
		SBTi Net Zero Standard [18]	Base year emissions should be representative of a company's typical GHG profile, and must be no earlier than 2015.

No.	Requirements	Relevant frameworks and guidance supporting requirements	Requirements gaps or explanatory notes
2	**Outline a strategy to deliver targets, identifying enablers and quantifiable impacts**		
2.1	There are milestones, actions and performance outcomes at each step within the business (and across the value chain), and the assumptions driving each element are disclosed and aligned with sector-specific requirements as per principle three. a. Specific actions and individual contributions to the emission target should be clearly stated. The total contribution of individual actions should account for 75% of medium-term and 50% of long-term reduction . Actions to close the gap or reasons for the gap between the total identified actions and the emissions target should be stated (e.g., disclosure of pilot studies). b. A less granular road map is sufficient for the long-term target period, and actions should account for at least 50% of the long-term reduction. Qualitative narratives should accompany emissions that do not yet have solutions or options being considered. c. Companies should take technically possible and feasible actions first within the value chain in the short and medium term, such as retrofits, energy efficiency measures and switching to renewable electricity (e.g., setting 100% renewable energy Scope 2 targets). The basis for which actions have been chosen should be stated and be appropriate for the sector pathway set out in principle three. d. Performance outcomes of key actions should be regularly reported for investors to track progress against commitments.	TCFD Guidance on Climate-related Metrics, Targets, and Transition Plans [10]	The transition plan should be actionable and linked to specific initiatives that are based in science, including near-term initiatives that allow for accountability. A transition plan should articulate specific initiatives and actions the organisation will undertake to effectively execute the transition plan, including regular milestones.
		CA100+ Net Zero Company Benchmark [12]	A company must have a decarbonisation strategy that explains how it intends to meet its long- and medium-term GHG reduction targets that includes a set of actions to be taken over the targeted time frame and quantifies key elements of the strategy.
		CIFF Say on Climate - Climate Action Plans [15]	Strategy to be aligned with plan.
		ACSI Governance Guidelines 2021 [30]	In addition to quantitative metrics, targets may including undertake planned actions, partnerships, research and development, or investment to address risks material to the company.
		CBI Transition Finance for Transforming Companies [14]	Set the strategy and plan to deliver on Paris-aligned KPIs. Strategic objectives, orientations and policies should be disclosed, with particular emphasis on how the short-, medium- and long-term milestones reflected in the selected KPIs will be reached. Aim for 3-5 year intervals of disclosure recognising that less detail will be possible towards 2050. Where options are unclear or none appear to be available, research and development plans should be articulated.
		CDP climate transition plan: discussion paper [43]	The plan should have verifiable and quantifiable key performance indicators (KPIs) which: measure the success of an organization's climate transition; and b. are t racked regularly.
		International Financial Reporting Standards (IFRS) prototype climate-related disclosures requirements [32]	Disclose plans to achieve any climate-related targets, advancements in R&D, new technologies, direct adaptation and mitigation efforts.
		Institutional Investors Group on Climate Change (IIGCC) Net Zero Standard for Oil and Gas [27]	Companies should ensure that the total of all quantified actions accounts for at least 75% of the medium-term reduction and at least 50% of the long-term reduction.

No.	Requirements	Relevant frameworks and guidance supporting requirements	Requirements gaps or explanatory notes
2	**Outline a strategy to deliver targets, identifying enablers and quantifiable impacts**		
2.2	Quantitative Scope 3 abatement targets are preferred. However, system change targets, such as supplier/customer engagement targets and frameworks, research and development targets or a clear plan for supply chain engagement, are alternatives for companies that cannot set quantitative targets in the short term. This is not appropriate for targets related to fossil fuel extraction, sales and distribution—quantitative targets linked to phasing out of fossil fuels should be set for these sectors.	SBTi Criteria and Recommendations v5 [28]	Engagement targets must cover relevant and credible upstream or downstream categories. Targets should describe the percentage of emissions covered (or if not available, the percentage of annual procurement spend). Targets must be fulfilled within 5Y. The suppliers/customers shall have science-based emission reduction targets in line with SBTi resources. Fossil fuel sale or distribution companies (more than 50% of revenue from fossil fuels) are not eligible.
		CA100+ Net Zero Company Benchmark [12]	Types of Scope 3 targets are undefined; however, GHG emissions targets should encompass Scope 3, when applicable for specific sectors. Follows TPI methodology.
		SBTi Net Zero Standard [18]	Near-term: at least 67% of Scope 3 emissions must also be covered; physical intensity contraction, economic intensity or engagement targets; well below 2 °C. Long-term: 90% of Scope 3 emissions must be covered; physical intensity contraction or economic intensity; 1.5 °C.
		CIFF Say on Climate - Climate Action Plans [15]	Average absolute Scope 1-3 emissions reduction of 7-8% pa to 2030.
		CBI Transition Finance for Transforming Companies [14]	Upstream scope 3 emissions embedded in purchased goods or services should be addressed in the selected KPIs, as the company has a choice over who it purchases from and therefore associated embedded emissions in those inputs. For downstream scope 3 emissions, whether and how these are addressed in the KPIs depends in large part on whether the activity of the company is 'stranded', and the company needs to transition away from it or not.
		TCFD Proposed Guidance on Climate-related Metrics, Targets, and Transition Plans [10]	Scope 3 GHG emissions are a critical component of overall GHG emissions. Some companies, such as financial organizations or auto manufacturers, may focus on reducing Scope 3 GHG emissions.
		WWF asset owner guide to oil & gas producers [35]	O&G: Adopt a time-bound, climate science-based and absolute greenhouse gas emission reduction target that covers scope 1 to 3 emissions.

No.	Requirements	Relevant frameworks and guidance supporting requirements	Requirements gaps or explanatory notes
2	**Outline a strategy to deliver targets, identifying enablers and quantifiable impacts**		
2.3	Offsets should follow a mitigation hierarchy that prioritises eliminating emissions within the value chain. If no alternatives exist, offsets should be used as a last resort to neutralise residual emissions estimated by a credible sector-specific 1.5 °C pathway.	SBTi Criteria and Recommendations v5 [28]	SBTi Criteria and Recommendations does not permit the use of offsets to contribute towards near-term emissions reduction targets. Carbon credits may only be considered for neutralising residual emissions or to finance additional climate mitigation beyond targets.
		TCFD Guidance on Climate-related metrics, targets and transition plans [10]	Disclosure over the extent that GHG reduction targets are to be met with direct Scope 1, 2, and 3 reductions relative to offsets. The transition plan addresses the relative contribution of reductions, removals, and offsets for achieving GHG emissions targets.
		Climate Bonds Initiative Transition Finance for Transforming Companies Discussion Paper [14]	For all companies, offsets should not be used to delay decarbonisation of the underlying activity, but if they are used, they should be clearly and separately identifiable as additional actions on top of efforts to directly reduce emissions and follow the sectoral green transition pathway.
		WWF Forest Carbon Credits: Separating the "good" from the merely "good enough" [33]	Does not specify requirements of companies but sets out what may constitute a real or credible emissions reduction/removal from the forest sector, and key risks and considerations.
		GHG protocol A Corporate Accounting and Reporting Standard [29]	Companies should report their internal emissions separate from offsets to meet targets. Offsets should be credible and avoid double-counting.
		CIFF Say on Climate - Climate Action Plans [15]	End deforestation, credible use of offsetting only if strictly necessary.
		SBTi Net Zero Standard [18]	Carbon credits do not count as reductions towards near- or long-term targets. Companies should only account for reductions that occur within their operations and value chain. Companies should reduce value chain emissions ahead of neutralisation and compensation activities. Companies with forest, land, or agriculture emissions should set separate targets to address land-based emissions and carbon removals.

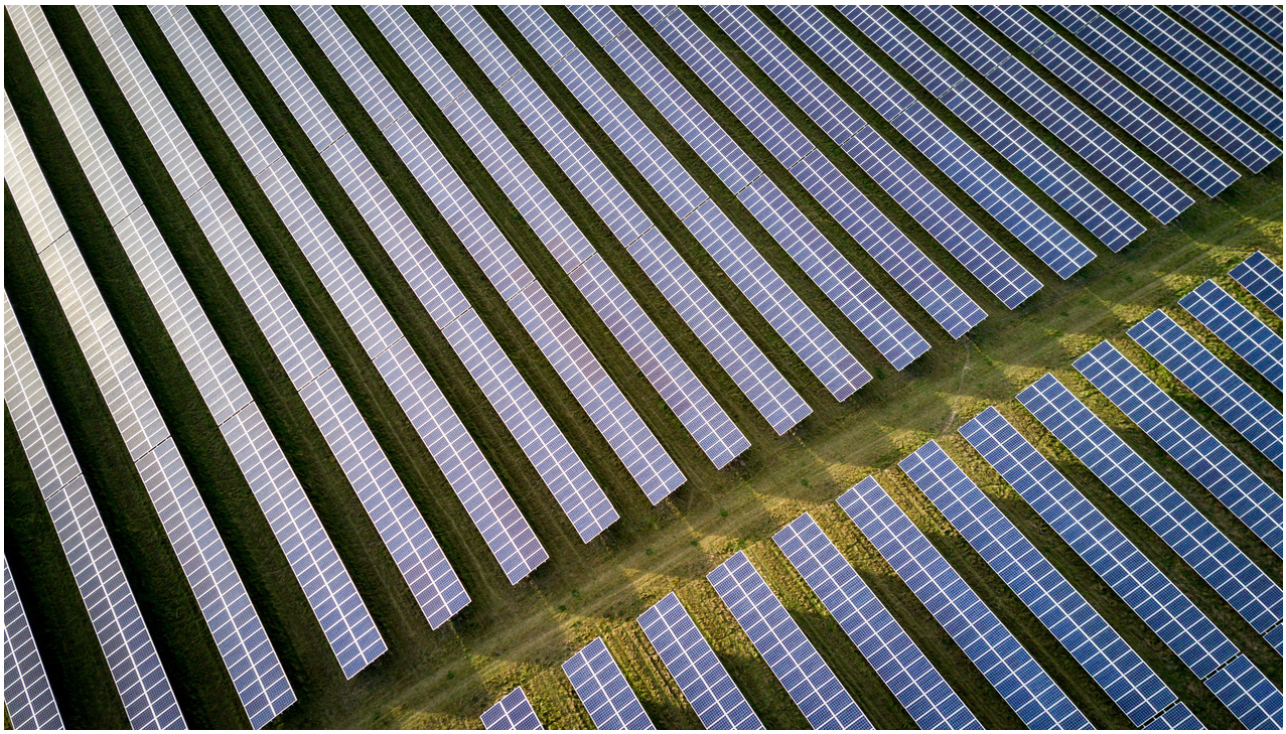
No.	Requirements	Relevant frameworks and guidance supporting requirements	Requirements gaps or explanatory notes
2	**Outline a strategy to deliver targets, identifying enablers and quantifiable impacts**		
2.4	If offsets are part of the transition plan, the company should disclose: a. the proportion of the target consisting of offsets b. which emissions have been offset and why the emissions are not possible to abate c. the proportion of offsets from nature-based solutions and carbon capture and storage (CCS) and carbon capture, utilisation and storage (CCUS) or other technology-based solutions d. the average price paid for offsets and assumptions about regulations, offset availabilities, prices, permanency and impacts over the transition plan's time frame e. the intended time frame for using offsets (e.g., how offsets will be used at specific times) f. what criteria the company will use to assess the credibility of offsets for attributes such as offset types, scheme providers, storage mechanisms, permanence and additionality g. whether the company plans to generate offsets from its own operations or value chain, and if relevant, how double-counting of emissions reductions will be avoided.	GFANZ Progress report 2021 [8]	Describe the usage of carbon credits and offsets with reference to emerging industry guidance (e.g., type of credits used, price applied, verification). Credits and offsets should be disclosed separately from gross emissions figures.
		IFRS prototype climate-related disclosures requirements [32]	Disclose assumptions about the use of carbon offsets in achieving the target, including minimum quality or certification thresholds for the offsets. Disclose the extent that mitigation efforts rely on offsetting strategies and the factors affecting the choice of any offsetting strategy.

No.	Requirements	Relevant frameworks and guidance supporting requirements	Requirements gaps or explanatory notes
2	**Outline a strategy to deliver targets, identifying enablers and quantifiable impacts**		
2.5	Negative emissions technologies (e.g., bioenergy with carbon capture and storage or direct air capture) should be limited to a small proportion of overall emissions reductions unless there are no alternative abatement options. Some sectors are likely to require CCS/CCUS (for more information about sector pathways, see principle three). Companies should disclose why these technologies have been used, the current and future availability of CCS/CCUS (e.g., assess the company's required technical and cost trajectories of CCS/CCUS against actual trajectories), the external drivers and barriers, the time frame for current actions required to develop future technologies, the underlying assumptions and contingency planning in the event of carbon capture shortfalls.	SBTi Net Zero Standard [18]	Companies should invest in NETs to reduce emissions outside the value chain to contribute to societal net zero.
		ACT Initiative Framework [31]	Low-carbon budget is not to be exceeded.
		Asia Investment Group on Climate Change – Carbon Capture and Storage in the decisive decade for decarbonisation [34]	Deployment of CCS should be supported by detailed disclosure of expected contribution of CCS to carbon emissions reduction targets. Relevant feasibility studies and contingency planning in the event of shortfall to carbon captured through CCS project deployed at asset level should be conducted to justify the Scope and scale of CCS strategy to support the company's decarbonisation.
2.6	Set and disclose separate goals and targets for 'green' or 'low-carbon' initiatives and their expected contributions towards greenhouse gas targets. Companies should disclose the share of 'green revenues' in overall sales and the nature of these products and services.	CA100+ Net Zero Company Benchmark [12]	The company's decarbonisation (target delivery) strategy specifies the role of 'green revenues' from low-carbon products and services. A. The company already generates 'green revenues' and discloses their share in overall sales. B. The company has set a target to increase the share of green revenues in its overall sales.
		Institutional Investors Group on Climate Change (IIGCC) Net Zero Standard for Oil and Gas [27]	Companies should disclose the total contribution of "green" energy sales towards their medium- and long-term targets and specify the "green" energy they intend to produce (where the definition of "green" references the relevant regional taxonomy.
		WWF asset owner guide to oil & gas producers [35]	Oil and gas producers require a diversification strategy towards zero carbon technologies.

No.	Requirements	Relevant frameworks and guidance supporting requirements	Requirements gaps or explanatory notes
3	**Set sector-specific commitments and actions aligned with 1.5 °C decarbonisation pathways**		

No.	Requirements	Relevant frameworks and guidance supporting requirements	Requirements gaps or explanatory notes
4	**Ensure investment commitments (capital expenditures) are aligned with targets**		
4.1	Use the International Energy Agency's net zero by 2050 (NZE) scenario or a comparable, credible 1.5 °C pathway with a limited overshoot pathway to determine appropriate capital expenditure (CapEx) and disclose methodology. CapEx plans should be consistent with broader net zero strategies and avoid investments inconsistent with the company's science-based short-, medium- and long-term net zero targets and the quantitative disclosures provided in principle two. Capital allocations should include all operations and assets, considering partial interests in assets. A 1.5 °C pathway may not exist for every sector; however, companies should start by stating that their capital allocation strategy is aligned with their emissions targets and net zero by 2050.	CA100+ Net Zero Company Benchmark [12]	The company commits to align its capital expenditure plans with the Paris Agreement's objective of limiting global warming to 1.5 °C and to phase out investment in unabated carbon-intensive assets or products. CA100+ alignment assessments by CTI (utilities, and oil and gas) and 2DII (utilities and autos) also assess capital expenditure alignment and the methodology is published on the CA100+ website.
		CIFF Say on Climate – Climate Action Plans [15]	Plan should contain necessary CapEx commitments.
		CDP climate transition plan: discussion paper [43]	As part of its strategy to achieve net zero, an organization should outline time-bound financial planning details.
		WWF asset owner guide to oil & gas producers [35]	Oil & gas producers should ultimately bring capital expenditure for oil & gas projects to virtually zero – starting with those projects most vulnerable from carbon risk, cost risk and other ESG risks. Oil & gas producers should immediately end capital expenditure in oil sands/extra heavy oil, Arctic oil & gas, shale oil & gas, deepwater oil, and LNG, as well as in exploration.
		SBTi Financial Sector Science Based Targets Guidance v1.1 [36]	Capital management plans to end capital expenditure for new high carbon projects, increase capital expenditure for low-carbon projects, and a clearly articulated timeline for the closure of existing high carbon assets. This could include cash returns through buybacks or dividends.
		ACSI Governance Guidelines 2021 [30]	Corporate strategy should be aligned with the Paris Agreement and net zero by 2050. These standards should be integrated into capital-allocation decisions and financial reporting.
		CBI Transition Finance for Transforming Companies [14]	The financing plan should address the needs and commitments for any CAPEX, OPEX, M&A activities and R&D expenditures necessary for the delivery of the transition strategy, in order that capital stock, working capital and overall business streams are aligned with the company specific KPIs. For some companies, capital allocation plans that support a repositioning of the capital stock will be critical. For others, operating expenditure may be more significant, including costs of retraining and redeploying staff or decommissioning stranded assets, or staff costs to operationalise low-carbon production practices.

No.	Requirements	Relevant frameworks and guidance supporting requirements	Requirements gaps or explanatory notes
4	**Ensure investment commitments (capital expenditures) are aligned with targets**		
4.2	Describe and, ideally, quantify the transition plan actions set out in principle two, key assumptions and estimates of climate change in financial statements and notes or provide sensitivity analyses using such assumptions and estimates, particularly on future-orientated information that is not covered by accounting standards (e.g., estimates of the different decarbonisation actions described in principle two, including the useful life of assets, current and future estimates of: key input/output commodities, carbon taxes, carrying values, costs and effectiveness of carbon capture technologies, percentage shares of CapEx invested in carbon-intensive assets and the year in which capital will peak, and change in risk exposure in a low-carbon economy). Where investment in new fossil fuel projects is made, quantify what assumptions justify this investment.	CA100+ Net Zero Company Benchmark [12]	The audited financial statements and notes thereto incorporate material climate-related matters and the material impacts of the global drive to net zero GHG emissions by 2050 (or sooner). The financial statements use, or disclose a sensitivity to, assumptions and estimates that are aligned with achieving net zero GHG emissions by 2050 (or sooner). The audit report identifies that the assumptions and estimates that the company used were aligned with achieving net zero GHG emissions by 2050 (or sooner) or provides a sensitivity analysis on the potential implications.



No.	Requirements	Relevant frameworks and guidance supporting requirements	Requirements gaps or explanatory notes
4	**Ensure investment commitments (capital expenditures) are aligned with targets**		
	Disclose a forward-orientated CapEx budget (at least three years) (e.g., specify upstream and exploration elements and report declining CapEx in assets being phased out and investments in low-carbon technologies). If targeted production declines are inconsistent with net zero, itemise discrepancies and provide additional disclosure on break-even costs for new and existing projects (e.g., investments in bioenergy with carbon capture and storage and other negative emissions technologies measures should also be specified). Sector-specific guidance for CapEx plans can be found in principle three, and further guidance on sectors is provided in Appendix B.	TCFD Guidance on Climate-related Metrics, Targets, and Transition Plans [10] TCFD Final Report (2017) [11]	Transition plan clearly articulates investments and other financial implications in supporting financial plans and budgets. Climate-related targets outline amount of expenditure or capital investment deployed toward climate risks and opportunities and how expenditure or capital investment supports the decarbonisation strategy. Disclose the impact of any material climate-related risks or opportunities on financial position (e.g., assets and liabilities). The TCFD guidance recommends when disclosing business-relevant time horizons that companies think about disclosing financial implications, strategic thinking, operational plans and capital planning in a more granular way over the short term, and at a broader level beyond 5 years.
		CBI Transition Finance for Transforming Companies [14]	The methodology should detail how the company evaluates the alignment of capital expenditure decisions, projects and plans with its selected KPIs. It should also disclosure the % share of aligned capital expenditures and detail the year in which capital expenditures in carbon-intensive assets will peak.
		IFRS prototype climate-related disclosures requirements [32]	Disclose the impact of significant climate-related risks and opportunities on its financial position, financial performance and cash flows at the reporting period end, and the anticipated effects over the short, medium and long term. Disclose how the financial position may change over time in line with its strategy to address significant climate-related risks and opportunities (including capital allocation and funding plans, major acquisitions or divestments etc). Disclose how climate-related factors have affected judgements made or estimation uncertainty in financial statements.
		GFANZ Progress report 2021 [8]	Describe the size and nature of current and future low-carbon capital investments (capital allocation alignment).
		ACT Initiative Framework [31]	Company plans should be disclosed, including the carbon-intensive nature of its investments and products.
		CA100+ Net Zero Company Benchmark [12]	The company discloses the methodology and criteria it uses to assess the alignment of its capital expenditure plans with decarbonisation goals, including key assumptions and KPIs. The methodology should also quantify key outcomes, including the percentage share of its capital expenditures that is invested in carbon-intensive assets or products, and the year in which capital expenditures in such assets will peak.
4.3		TCFD Guidance on Climate-related Metrics, Targets, and Transition Plans [10]	Disclosure over amount of expenditure or capital investment deployed toward climate risks and opportunities.
		WWF asset owner guide to oil & gas producers [35]	Continuing exploration to find new oil & gas reserves is irrelevant in a 1.5°C compliant transition and should be stopped. This would suggest there is little room left climate-wise for any new oil & gas project in addition to ongoing investments in the existing projects, and that new projects will have a particularly high risk of ending up stranded.
		CBI Transition Finance for Transforming Companies [14]	The financing plan methodology should detail how the company evaluates the alignment of capital expenditure decisions, projects and plans with its selected KPIs. It should also disclose the % share of aligned capital expenditures and detail the year in which capital expenditures in carbon intensive assets will peak.

No.	Requirements	Relevant frameworks and guidance supporting requirements	Requirements gaps or explanatory notes
4	**Ensure investment commitments (capital expenditures) are aligned with targets**		
4.4	Overarching capital allocation strategy, acquisitions and disposals and CapEx should be aligned with net zero. Companies should not make acquisitions that compromise their commitments to net zero, and disposals of legacy fossil fuel assets should be to parties that intend to operate those assets in a manner consistent with net zero. Disclosure may include details of the operating plan, commitments to a just transition, closure provisions and run down plans.		Guidance is this area is limited and further information is expected during 2022.

No.	Requirements	Relevant frameworks and guidance supporting requirements	Requirements gaps or explanatory notes
5	**Commit to annual transparent disclosure and monitoring with external verification**		
5.1	Climate disclosures should be produced annually following the Task Force on Climate-Related Financial Disclosures' guidance and include transparent monitoring and disclosure of progress towards short-, medium- and long-term (including net zero) targets.	CA100+ Net Zero Company Benchmark [12]	Indicator 10 – The company has committed to implement the recommendations of the Task Force on Climate-Related Financial Disclosures (TCFD).
		SBTi Net Zero standard [18]; SBTi Criteria and Recommendations v5 [28]	CThe company shall publicly report its company-wide GHG emissions inventory and progress against published targets on an annual basis.
		CBI Transition Finance for Transforming Companies [14]	Annual reporting of independently verified progress in terms of action taken and performance against targets.
		TCFD Guidance on Climate-related Metrics, Targets, and Transition Plans [10]	Organisations should report publicly or to stakeholders their initial transition plans and significant updates to the plans. In addition, organisations should report progress against their transition plans annually and include a comparison of completed actions to planned actions in the prior reporting period.
		CDP climate transition plan: discussion paper [43]	The plan should be succinctly integrated into an organization's existing mainstream filings (in annual financial reporting/sustainability reporting/overall business strategy); serving the purpose of being an accountability mechanism.
		CIFF Say on Climate – Climate Action Plans [15]	Annual performance reporting to shareholders.
		GFANZ Progress Report 2021 [8]	Disclose progress annually with transparency allowing stakeholders to understand and compare the impact of activities.
		ACSI Governance guidelines 2021 [30]	Reporting annually on performance against targets and adopt TCFD reporting framework.
5.2	Decarbonisation targets should be independently verified or reviewed for alignment with net zero pathways (e.g., by Science Based Targets initiative, Transition Pathway Initiative as part of the Climate Action 100+ benchmark or independent review by another verifier with relevant expertise) and are preferred by investors seeking confidence in disclosure. Details behind the target should be disclosed publicly.	SBTi Net Zero standard [18]	Through SBTi companies can commit to net zero, which includes setting validated near-and long-term science-based targets consistent with limiting temperature rise to 1.5 °C.
		CA100+ Net Zero Company Benchmark [12]	Through the CA100+ benchmark, targets can be verified against a 1.5 °C pathway (if available for the sector), assessed by TPI.
		TCFD Proposed Guidance on Climate-related Metrics, Targets, and Transition Plans [10]	Sustainability reporting is currently voluntary, and third-party independent verification is still only an emerging area. While costly, independent assurance improves accuracy and credibility however it is currently lacking a standardised framework to assure against. TCFD guidance does not state a recommendation for independent verification but does require information can be sufficiently verified by external stakeholders.
		CBI Transition Finance for Transforming Companies [14]	The publicly disclosed information should be supported by a verification assurance report from an independent, external verifier with relevant expertise, such as an auditor or environmental consultant.

No.	Requirements	Relevant frameworks and guidance supporting requirements	Requirements gaps or explanatory notes
5	**Commit to annual transparent disclosure and monitoring with external verification**		
5.3	Gross greenhouse gas emissions (Scopes 1, 2 and 3) and crucial climate-related information should be reported and assured (e.g., by an independent greenhouse gas or environmental auditor). At a minimum, underlying climate-related information should be disclosed and sufficiently verifiable by external stakeholders. Examples of key metrics that should be assured include scope 1, 2 and/or 3 emissions and reporting boundaries, gross vs net emissions, key performance indicators, performance against targets and key performance indicators, capital expenditures, emissions intensity denominator metrics or other quantifiable actions.	ACT Initiative Framework [31]	The data required for the assessment shall be verified or verifiable.
		National Greenhouse and Energy Reporting (NGER) scheme [37]	Companies and facilities that meet reporting thresholds under the National Greenhouse and Energy Reporting Act 2007 (Cth) must report and obtain third-party assurance regarding Scopes 1 and 2 emissions data. However, this expectation extends to capture Scope 3 emissions and emissions consistent with the company's representative reporting boundary, which may reflect other geographies or operations (see principle one for reporting boundary requirements).
		Clean Energy Regulator – Corporate Emissions Reduction Transparency (pilot) [42]	The CERT provides a framework for Australian NGERs reporting companies to present scope 1 and 2 emissions reduction progress that has been verified by the Clean Energy Regulator. This includes a limited number of eligible carbon units and certificates.
		Parliament of Australia Chapter 6 Sustainability reporting: background and current status [38]	Notes the benefits of independent verification and assurance.
		Corporate Sustainability Reporting Directive (CSRD) amendment to the Non-financial Reporting Directive (NFRD) [39]	In the European Union, the law requires certain companies to audit (obtain assurance) over reported environmental information after the adoption of the proposal for a CSRD.
		CIFF Say on Climate - Climate Action Plans [15]	Independent auditing of emissions.
		CBI Transition Finance for Transforming Companies [14]	External reporting and independent verification on the KPIs and strategy. The publicly disclosed information should be supported by a verification assurance report from an independent, external verifier with relevant expertise, such as an auditor or environmental consultant.
		TPI State of Transition Report 2021 [40]	Companies are assessed as Yes if operational (Scope 1 and/or 2) GHG emissions have been independently verified by a third party.
		CDP climate transition plan: discussion paper [43]	A climate transition plan should be accompanied by an annual Scope 1, 2 and 3 emissions. inventory that is complete, accurate, transparent, consistent, relevant, and verified by a third-party.
		SBTi Net Zero Standard [18]	Scope 1, 2, and 3 emissions data should be accurate and verifiable. SBTi provides independent assessment and approval of companies' targets.
5.4	If the company is a fossil fuel producer, the expected peak and decline in fossil fuel production and price forecasts should be disclosed alongside the company's diversification plans (i.e., the growth pathway for renewables or alternative fuels products).	CIFF Say on Climate - Climate Action Plans [15]	Phase out fossil fuel use and production, no financing of new supply.
		CBI Transition Finance for Transforming Companies [14]	Disclose the % share of aligned capital expenditures and detail the year in which capital expenditures in carbon-intensive assets will peak.

Appendix B: Additional sector-specific guidance

Below is a compiled list of additional public sector-specific guidance available to support principle three and the guidance previously referenced.

Sector	Sector guidance
Oil and gas	» Institutional Investors Group on Climate Change (IIGCC) Net Zero z Standard for Oil and Gas » World Benchmarking Alliance - Oil and gas benchmark » ACT Oil and Gas sector methodology » IFRS technical protocols for disclosure requirements » WWF asset owner guide to oil & gas producers
Power and utilities	» IIGCC Global Sector Strategies - Electric utilities » SBTi Power guidance » World Benchmarking Alliance - Electric utilities benchmark » ACT Electric Utility sector methodology » ClimateWorks Decarbonisation Futures » IFRS technical protocols for disclosure requirements
Steel	» IIGCC Global Sector Strategies - Steel » CDP - Steeling for net zero » ClimateWorks Decarbonisation Futures » IFRS technical protocols for disclosure requirements » Mission Possible sectoral focus: steel
Food, beverage and forestry	» Ceres & Principles for Responsible Investment Global Sector Strategies - Food and beverage » WBCSD - Disclosure in a time of system transformation: Climate-related financial disclosure for food, agriculture and forest products companies » CDP - No wood for the trees » ACT Retail sector methodology » ClimateWorks Decarbonisation Futures » IFRS technical protocols for disclosure requirements
Transport	» World Benchmarking Alliance - Automotive benchmark » SBTi Transport guidance; SBTi Aviation guidance » ACT Auto and ACT Transport sector methodology » ClimateWorks Decarbonisation Futures » IFRS technical protocols for disclosure requirements
Mining	» TPI Carbon Performance Assessment in the Diversified Mining Sector: Discussion paper » CDP - Digging deep. Which miners are facing up to the low-carbon challenge? » Energy Transition Hub - From mining to making. Australia's future in zero emissions metal » ClimateWorks Decarbonisation Futures » IFRS technical protocols for disclosure requirements
Cement	» ACT Cement sector methodology » IFRS technical protocols for disclosure requirements » Mission Possible sectoral focus: cement

Appendix C: Scope 3 applicability by sector

Scope 3 calculation guidance can be found at the Greenhouse Gas Protocol, Corporate Value Chain (Scope 3) Accounting and Reporting Standard [41].

Scope 3 applicability is determined on a sector level and has been based on the CA100+ benchmark methodology[5] for Scope 3 applicability. It has been determined based on consultation with climate experts, investor signatories and investor networks. The classification system outlined, which is in accordance with the Greenhouse Gas Protocol.

Cluster	Sector	Scope 3 applicable?
Energy	Oil and gas	Yes (use of sold products)
	Oil and gas distribution	Yes (use of sold products)
	Electric utilities	Utilities w/ oil and gas distribution businesses (use of sold products
	Coal mining	Yes (use of sold products)
Transport	Autos	Yes (use of sold products)
	Airlines	No
	Shipping	No
	Other transport	Yes (use of sold products)
Industrials	Aluminium	No
	Cement	No
	Steel	No
	Chemicals	Yes (purchased goods and services and use of sold products)
	Paper	No
	Diversified Mining	Yes (processing of sold products; for coal manufacturers, also use of sold products)
	Other industrials	On a case-by-case basis (non-electricity use of sold product)
Consumer goods and services	Consumer goods and services	Yes (purchased goods and services)

5 https://www.climateaction100.org/progress/net-zero-company-benchmark/frequently-asked-questions/

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