IIGCC

Investor Expectations of Corporate Transition Plans: From A to Zero

Foreword

Investor Expectations of Corporate Transition Plans: From A to Zero

Increasingly investors are committing to aligning their portfolios with the Paris Agreement's objective of limiting the global average temperature increase to 1.5 degrees, consistent with their obligation to deliver long-term performance. The most widely-used framework to deliver these commitments is the Net Zero Investment Framework (NZIF). NZIF encourages portfolio decarbonisation by emissions reductions associated with assets held. Therefore to implement NZIF, investors need confidence that net zero pledges made by these assets are credible.

Global initiatives like Climate Action 100+ have spurred the most emissions-intensive companies to set ambitious emissions targets, with Bloomberg reporting that more than two thirds of the world's heaviest emitters have now set a net zero target, driven in part by investor engagement. However, Climate Action 100+ focusses on only 159 listed companies: investors typically hold hundreds, if not thousands, of companies within their portfolios. Making progress on climate change will require these companies to take action, too. Investors will need to measure the alignment of emissions targets set by these companies and assess the credibility of their transition plans to deliver and track progress.

To meet this need IIGCC has developed this corporate transition plan guidance. It aims to define the key components of a credible transition plan, relevant to companies of different sizes and applicable across a range of sectors and geographies. It is explicitly designed to map onto the requirements of investors implementing NZIF - assessing corporates on the metrics investors will use to track progress at portfolio level. Fully aligning corporate and investor assessment frameworks should lead to more effective engagement activity, streamline information flow and, ultimately, optimise capital allocation during the transition.

This guidance also supports the launch of IIGCC's Net Zero Engagement Initiative (NZEI). NZEI aims to broaden the scope for investor engagement beyond the CA100+ company list, focussing primarily on European companies. It aims to provide an opportunity for investors to scale and accelerate engagement across their portfolios and meet NZIF's engagement goals. As part of NZEI investors wrote collectively to companies, setting out clear expectations on transition plans and a timeframe for demonstrating leadership. This guidance aims to inform those expectations and show how investors can measure alignment and track progress.

This guidance will also have a broader use. By clearly articulating the data requested by investors and setting out how these requests interrelate with emerging frameworks such as the Transition Plan Taskforce (TPT) and others, it is designed to be useful to companies looking to develop and articulate their transition strategies. This guidance also signals how investor requests and tools may evolve. We hope the concepts and topics outlined in this framework will be reflected in other frameworks, harmonising guidance and helping to raise ambition generally.

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Executive summary

Through initiatives such as Paris Aligned Asset Owners and Net Zero Asset Managers, investors globally have committed to align their portfolios with the Paris Agreement's objective of limiting the global average temperature increase to 1.5 degrees. Investors are now increasingly focused on delivering on this commitment. Consistent with the principles established in the Net Zero Investment Framework (NZIF), they aim to support real world emissions reductions by encouraging decarbonisation at the underlying assets they hold [1].

To deliver on this net zero commitment, investors need confidence that the net zero pledges made by the assets they hold are credible. Initiatives like the Climate Action 100+ [3] have spurred companies to set ambitious emissions targets, but claims of alignment and plans to deliver need to be assessed. There is also growing recognition that real world emissions reductions cannot be achieved without aligning corporate engagement activities and scaling climate solutions investment. Investors also need adequate data to assess transition risks and track progress consistently.

In recent years the concept of a corporate "transition plan" has developed: a document that sets out how a company intends to navigate the transition to a low carbon economy and captures all relevant disclosure. **This paper defines the key components of a credible transition plan, consistent with the requirements of investors implementing NZIF.** It is a sector neutral framework designed to cover both high and low impact companies. It provides guidance **both to companies preparing transition plans and to investors intending to assess the disclosure.** Both corporate and investor frameworks need to be aligned to streamline information flow and optimise capital allocation.

The five key components of a credible corporate transition plan are:
1. Comprehensive, net zero aligned emissions targets.
2. A credible strategy to deliver those targets.
3. Demonstrable engagement to support the achievement of targets.
4. The contribution to "climate solutions".
5. Supporting emissions and accounting disclosure.

This paper explains the rationale for each component, plus the supporting sub-components and metrics that enhance credibility and enable progress to be tracked. It aims to incorporate much of the good work that has already been done on these topics , explicitly highlighting how each sub-component and metric corresponds to those within existing frameworks.

Building on that work, this guidance seeks to go further in several areas. Supporting the growing data and engagement needs of investors implementing NZIF requires new historic emissions performance and climate solutions criteria not currently covered in the CA100+ Net Zero Company Benchmark. Engagers are increasingly looking to benchmark aspects of strategy, engagement, and climate solutions similarly to how overall emissions targets are currently assessed. Consequently, this guidance suggests disclosure in areas such as operational emissions, planned fossil fuel production capacity and procurement strategy that could ultimately be tested for alignment. Finally, this guidance also suggests how current gaps in assessment approaches may be addressed.

Much work still needs to be done: the methodologies needed to perform the alignment tests described above have yet to be formally established. Ways of assessing target alignment that better reflect the shape of the emissions pathway are under development; credible ways to disclose and assess climate solutions for most sectors have also yet to be established. By setting out both the rationale for the existing guidance and the direction of travel, this paper should enable companies to anticipate some of these developments and strengthen their plans accordingly.

[1] This paper reviewed frameworks produced by: ACT [13], CA100+ [3], CBI [17], CDP [14], CIFF [11], EFRAG [6], GFANZ [4], IGCC [2], TCFD [19], TPI [15], TPT [20], UN HLEG [12]

Exhibit 1: Key components of a corporate transition plan – how they can be disclosed and assessed and how they correspond to the CA100+ Company Benchmark and NZIF corporate framework

Key Component (Link to section/table)	Sub-component (link to relevant section)	Considerations for those preparing transition plans		Considerations for users of transition plan		Corresponds to:	
				Suggested binary metrics to test disclosure	Alignment	NZIF Corp AC*	CA 100+ CB Indicators
1.Comprehensive aligned emissions targets (Section1 / Exhibit 9)	a) Comprehensive 1.5°C aligned commitment	Cover all material emissions scopes/ gases/operations		2: "comprehensive", alignment to 1.5°C	–	❶	❶
	b) Short, med. & long-term targets	Set short (<2026), medium (2026-36) and long-term targets (2050)		3: presence of S-T, M-T & L-T targets	☑	❷	❷❸❹
	c) Absolute and intensity	Conversion of intensity into absolute emissions (and vice versa)		1: specify both	☑	G	③
2. Credible strategy to deliver the targets (Section 2/ Exhibit 12)	a) Quantified decarbonization actions	Disclose quantified actions for targets. State econ/tech feasibility		2: quantified actions, feasibility	–	❺	❺
	b) Tackling operational emissions**	Set medium and long-term scope 1&2 targets and strategy		2: targets, strategy	☑	–	–
	c) Taking sector-specific actions**	Set additional targets as appropriate for sector		1 per additional/subsidiary target	☑	–	–
	d) Aligning capital allocation	State alignment, future fossil fuel and decarbonization spend		1 per additional/subsidiary target	☑	❻	❻
	e) Setting out neutralization strategy	Contribution of offsets, CCUS, etc. to targets		4: reliance on NBS/TBS KPIs and strategy	☑	G	⑤
	f) Underlying historic performance	Historic emissions and any adjustments for M&A and offsets		2: emissions, adjustments	☑	❸	⑪
	g) Governance structure	Board-level responsibility for targets linked to remuneration		2: C-suite responsibility, pay	–	❽	❽
3. Demonstrable engagement commitments to support the achievement of targets (Section 3/ Exhibit 18)	a) Value chain engagement	% of aligned suppliers, procurement $, customers and revenue		3: % suppliers/customers aligned	–	–	–
	b) Climate policy engagement	Align direct and indirect lobbying and annual monitoring review		3: commitment, disclosure, action	–	❼	❼
	c) Financing and investment	Alignment of financing partners and investments		2: bank/investment alignment	–	–	–
	d) Just transition	Commitment to JT principles; report risks and mitigation strategy		3: pledge, engagement action	–	❾	❾
4. The contribution to Climate Solutions (Section 4/ Exhibit 20)	a) Climate solutions definition	Definition of low carbon used in its financial reporting and KPIs		1: presence of solutions definition	☑	–	–
	b) Investment in solutions	Current and planned investment in low carbon production		2: investment/capacity plans	☑	G	⑥
	c) Low-carbon production	Current and planned low carbon production/revenues		2: production/revenue target	☑	G	⑤
	d) Nature based solutions	Details of investment in offset projects		1: current & future offset investment	–	G	⑤
5. Supporting emissions & accounting disclosure (Section 5/ Exhibit 21)	a) Emissions/energy consumption	Verified Scope 1/2/3 emissions, NBS, TBS, energy consumption		4: S1&2, S3, net/gross, consumption	–	❹	❿
	b) Impact of 1.5°C on accounts	Impact of 1.5°C scenario on balance sheet & assumptions		2: impact and assumptions	–	❿	❿

* NZIF Corporate AC = Listed Equity & Corporate Fixed income Alignment Criteria
** Dependent on sector (see text)

☑ Test of alignment available
☑ Test of alignment being developed
– Test of alignment not available
G Guidance
⑥ Forthcoming in CA100+ V2.0

List of Exhibits

Glossary

ACT	Assessing low-Carbon Transition initiative
BECCS	Bioenergy with Carbon Capture and Storage is a technology-based carbon removal which extracts energy from biomass and captures and stores the carbon released
CCS/ CCUS	Carbon Capture (Utilisation) and Storage refers to a technology and supporting infrastructure designed to capture carbon emissions from a point source and transport it either to be used in products ("utilisation") or stored underground
CDP	Carbon Disclosure Project - a not-for-profit organisation that runs the global disclosure system for environmental reporting
CDR	Carbon Dioxide Removal
DACCS	Direct Air Capture with Carbon Capture and Storage refers to a technology and supporting infrastructure designed to capture ("remove") carbon dioxide directly from the atmosphere and compress it to be injected into geological storage
EFRAG	European Financial Reporting Advisory Group
GFANZ	Global Financial Alliance for Net Zero
GRI	Global Reporting Initiative – an organisation establishing widely-used standards for sustainability reporting
$gCO_2(e)$	Grammes of Carbon Dioxide (equivalent)
IEA	International Energy Agency
IFRS	Not-for-profit, public interest organisation established to develop accounting and sustainability disclosure standards
MPP	Mission Possible Partnership
MJ	MegaJoule
MWh	Megawatt hour
Net Zero	References to net zero in this report refer to climate scenarios consistent with the ambition of the Paris Agreement to limit the rise in global warming to 1.5°C. These scenarios are characterised by a rapid reduction in emissions over the next decade and annual emissions falling to net zero by 2050. Frequently discussed in terms of this 2050 annual emissions target, if the temperature increase is to be restricted to 1.5°C, the emissions pathway is also crucial
NZE	The IEA's (International Energy Agency) Net Zero Emissions by 2050 scenario and report
PAT	Portfolio Alignment Team
REC	Renewable Energy Certificates
RTK	Revenue Tonne Kilometres
SBTi	Science Based Targets initiative drives climate action in the private sector
Scope 1/2/3 emissions	Scope 1: direct emissions from an organisation's activities, or under their control. Scope 2: indirect emissions from electricity (and heat) purchased and used by the organisation. Scope 3: all other indirect emissions from activities of the organisation, occurring from sources that they do not own or control.
TBS/ NBS	Technology or nature-based approaches which either remove emissions from the atmosphere or reduce point source emissions
TCFD	Taskforce on Climate-related Financial Disclosures
tCO_2e	Tonne of carbon dioxide equivalent
tCUe	Tonne copper equivalent
tkm	Tonne kilometre

About this document

This document aims to establish what constitutes a credible corporate transition plan consistent with the needs of institutional investors looking to align their portfolios to the Paris Agreement's objective of limiting the global average temperature increase to 1.5 degrees Celsius. It sets out the key components a transition plan should include and the supporting metrics that investors should use to assess transition risk and track progress. It is a sector-neutral, real-economy framework designed to be applicable to companies of different sizes in both emission intensive sectors and across the economy more broadly.

This document defines a transition plan as how a company intends to navigate the transition to a net zero economy. It is structured around the central imperative of the transition, namely, reducing emissions. Hence its focus on comprehensive emissions targets (component 1) and how companies intend to deliver them (components 2 and 3). Physical risk and nature (biodiversity) are important topics for companies to address and overlap with transition risk, but IIGCC is considering these issues in separate workstreams [5] and therefore they are not discussed here.

This document has two main audiences.

Firstly, it is designed to support the requirements of more than 350 investors, representing USD62 trillion in assets under management, who have committed to net zero globally. Of the 275 who have submitted a net zero target, 160 use the Net Zero Investment Framework (NZIF), making it the most widely utilised net zero methodology for investors. This document sets out how these investors can test the credibility of companies' decarbonisation strategies and the data needed to make these assessments. Such assessments can be used to inform their engagement, voting and broader stewardship activities. Consistent with NZIF's asset class alignment framework, climate solutions is treated as a separate component. The availability of the data outlined will vary across sectors as companies make their own decisions about the extent to which they disclose.

Secondly, it aims to be a useful resource for companies setting out their transition plans. By laying out investor requirements, it signals what companies seeking to align with the expectations of NZIF signatories, should do and disclose. It recognises the proliferation of documents with similar aims over the last 12 months. While it introduces some new components, much of the guidance reflects existing indicators developed for the CA100+ Net Zero Company Benchmark and other real-economy frameworks. This overlap by metric is clearly signalled so companies can see how this framework corresponds and prioritise action accordingly.

It arguably has a third audience. This document also provides guidance as to how investor requests and tools may evolve in some areas. It is hoped that some of the concepts and topics discussed here will be reflected in other frameworks, contributing to helping to raise ambition generally. Concepts developed here have already helped inform IIGCC's recent contribution to EFRAG [6] and UK TPT [7] consultations for example. Importantly they have also been incorporated in IIGCC's submission to the V2.0 consultation for CA100+ Net Zero Company Benchmark and it is anticipated that they will also inform the update of the NZIF implementation guide expected in 2023.

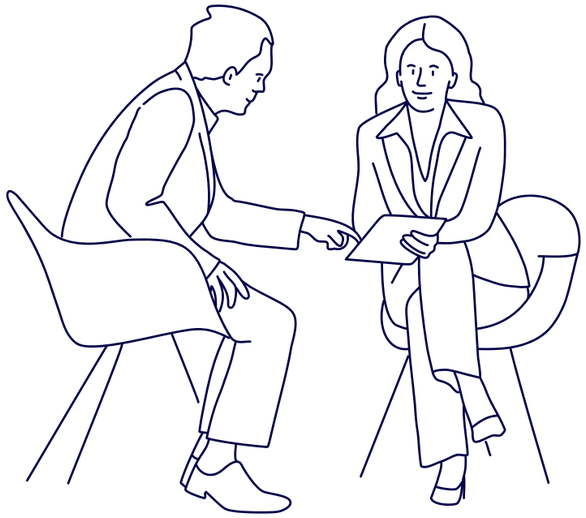
Introducing the Net Zero Investment Framework (NZIF)

The Net Zero Investment Framework (NZIF), first published in March 2021, provides a common set of recommended actions, metrics and methodologies through which investors can maximise their contribution to achieving global net zero global emissions by 2050 or sooner [8].

Its primary objective is to ensure investors can measure and assess asset alignment, overall portfolio trajectory, and increase investment in climate solutions in a way that is consistent with the Paris Agreement's objective of limiting the global average temperature increase to 1.5 degrees (net zero).

It's 'investment strategy' led approach, supported by concrete targets set at portfolio and asset level – combined with smart capital allocation, and engagement and advocacy activity – ensures investors can maximise their impact in driving real-world decarbonisation.

NZIF was designed by investors with regular industry consultation. It is now the most widely utilised net zero methodology for financial institutions, helping them to set targets and devise a net zero investment strategy. Today, it is used by more than 160 investors globally to support the implementation of their net zero commitments and is available to many more who have made a net zero commitment [1].



Design and principles underpinning its development
The main components and actions of the NZIF are set out in Exhibit 2.

Exhibit 2: The main recommended actions, metrics and methodologies of NZIF 1.0

Sets direction and portfolio structure for alignment	Portfolio / fund level	**Governance and Strategy**	
		• Commit to the goal of achieving net zero portfolio emissions by 2050, or sooner, and adopt an investment strategy consistent with the achievement of global net zero emissions by this date • Define beliefs, set investment strategy and mandates/performance objectives for portfolio managers, asset managers, and other relevant personnel	• Undertake climate financial risk assessment in line with TCFD recommendations • Publish a clear action plan, and disclose information on governance, strategy, metrics and targets, and management in relation to achieving alignment to net zero
		Targets and objectives	
		• Set medium-term emissions reduction and climate solutions reference targets to inform strategic asset allocation and monitor impact of strategy	
		Strategic asset allocation	
		• Update capital market assumptions based on scenario analysis • Optimisation with emissions and climate solutions metrics	• Set asset class mix with climate variants • Review constraints to increasing alignment
Shifts alignment of assets to meet portfolio goals	Asset class level	**Asset class alignment**	
		Assess assets and set targets: • Assess assets based on current and forward-looking alignment criteria, and investment in climate solutions • Set goals for increasing % AUM invested in aligned assets • Implement an engagement goal to ensure at least 70% of financed emissions in material sectors are either net zero, aligned to a net zero pathway, or the subject of direct or collective engagement and stewardship actions	**Implement:** • Portfolio construction: Screening, positive and negative weighting, tilted benchmarks to allocate capital to support alignment and invest in climate solutions • Engagement: Criteria based escalating engagement and voting strategy for non-aligned assets; tenant and issuer engagement • Selective divestment: Based on climate-related financial risk; engagement escalation; non-permissible activity thresholds • Investment/management actions for directly owned assets (e.g. real estate)
Influences enabling environment to facilitate alignment	External	**Policy Advocacy**	**Market Engagement**
		• Net zero aligned policy and regulation • Disclosure; shareholder rights • Collective and direct advocacy delivered through meetings, letters, responding to consultations, and media activity, as well as ensuring trade association advocacy is consistent with net zero goals	• Asset manager or client • Market actors including credit rating agencies, auditors, stock exchanges, proxy advisers, investment consultants, and data and service providers

The design of the NZIF is underpinned by five key principles:

1.	**Impact:** The primary objective is achieving real emissions reductions. While different investors have varying scopes for undertaking action, the framework encourages investors to maximise their efforts to achieve the greatest impact possible.
2.	**Rigour:** Alignment should be based on sound evidence and data and be consistent with the best available science on meeting the temperature goals of the Paris Agreement.
3.	**Practicality:** The methods and approaches should be feasible for a range of investors and either build on existing work or be compatible with existing work where possible.
4.	**Accessibility:** Definitions, methodologies and strategies should be clear and easily applied, using publicly available information and assessments where possible.
5.	**Accountability:** Definitions, methodologies and strategies should allow clients, beneficiaries and others to assess whether investors and assets are aligned.

NZIF guidelines have been developed for four asset classes: corporate fixed income, listed equity, sovereign bonds and real estate. Components for infrastructure and private equity have been published for public consultation, with guidance for derivatives is under development.

NZIF sets out a range of actions (portfolio construction, strategic asset allocation, engagement, selective divestment) investors may choose to take to reduce emissions, thereby aligning their portfolio with net zero as well as investing in climate solutions. It recommends prioritising corporate engagement as the most effective way to influence real-world emissions. This requires assessing the current and forward-looking alignment of underlying assets and driving the transition of these assets over time.

NZIF criteria used to assess the alignment of listed equity and corporate fixed income

For listed equity and corporate fixed income, six criteria are used to assess alignment of a transition plan (see Exhibit 3). These criteria broadly cover emissions targets, performance and disclosure (criteria 2, 3 and 4 respectively) and how emissions reductions are going to be delivered (criteria 5 and 6). Four "additional criteria" covering policy engagement, governance, just transition and accounting should also be incorporated in a transition plan where feasible. Lower-impact companies – defined as all those outside sectors assessed by the TPI plus banks and real-estate – are only assessed on criteria 2-4 (emissions targets, performance and disclosure).

Exhibit 3: NZIF listed equity and corporate fixed income alignment criteria

NZIF Alignment Criteria			Definition
Alignment criteria	1.	Ambition	Long-term 2050 goal consistent with achieving net zero globally
	2.	Targets*	Short and medium-term emissions reduction target (scope 1, 2 and material scope 3)
	3.	Emissions performance*	Current emissions intensity performance (scope 1, 2 and material scope 3) relative to science-based net zero pathways
	4.	Disclosure*	Disclosure of scope 1, 2 and material scope 3 emissions
	5.	Decarbonisation strategy	A quantified plan setting out the measures that will be deployed to deliver GHG targets, proportions of revenues that are green and where relevant increases in green revenues
	6.	Capital allocation	A clear demonstration that the capital expenditures of the company are consistent with achieving net zero emissions by 2050
Additional criteria	7.	Climate policy engagement	The company has a Paris-Agreement-aligned climate lobbying position and demonstrates alignment of its direct and indirect lobbying activities
	8.	Climate governance	Clear oversight of net zero transition planning and executive remuneration linked to delivering targets and transition
	9.	Just transition	The company considers the impacts from transitioning to a lower-carbon business model on communities and its workers
	10.	Climate risk and accounts	The company provides disclosures on risks associated with the transition through TCFD Reporting and incorporates such risks into its financial accounts
		Solutions	Assess company revenue associated with activities compliant with EU taxonomy mitigation criteria, from both categories 'substantial mitigation contribution' and 'enabling activities'. Capex may be used where relevant

* Alignment criteria that lower impact companies need to meet

The six criteria are used to classify assets held by investors into five "alignment maturity" categories:
i) Not aligned,
ii) Committed to aligning,
iii) Aligning towards a net zero pathway,
iv) Aligned to a net zero pathway and;
v) Achieving net zero.

Investors implementing NZIF set portfolio coverage targets to increase the percentage of assets under management (AUM) categorised as either aligning towards a net zero pathway, achieving net zero, or aligned to a net zero pathway. Through the stewardship process they will seek to encourage companies to meet these criteria [9]. Lower-impact companies can be considered aligned without meeting criteria 1, 5 or 6.

Exhibit 4: Assessing the alignment maturity using the NZIF listed equity and corporate fixed income alignment criteria

NZIF Alignment Maturity Scale		i) Not aligned	ii) Committed to aligning	iii) Aligning towards a NZ pathway	iv) Aligned to a NZ pathway	v) Achieving net zero
NZIF Corporate alignment criteria ↓						
	At, or close to, net zero emissions					●
3	Emissions performance*				●	
6	Capital allocation alignment				●	
5	Decarbonisation strategy			●		
4	Disclosure*			●		
2	Targets*			●		
1	Ambition		●			

● Additional criteria a company must meet to move to that alignment category

* Alignment criteria that lower impact companies need to meet.

NZIF corporate alignment criteria vs the CA100+ Company Benchmark

The CA100+ Company Benchmark was developed to aid investor engagement with 159 of the most emission-intensive publicly listed companies globally [3]. Its indicators are broadly consistent with NZIF's ten listed equity and corporate fixed income alignment criteria and it is a recommended data source for investors implementing NZIF when assessing the credibility of corporate transition plans.

However, the alignment between CA100+ Company Benchmark and NZIF is not complete. NZIF additionally includes an "Emissions Performance" criteria (3) that tests if the current rate of emission reduction is equal to or exceeds what is required by short and medium term targets (Alignment Criteria 2). Version 2.0 of the benchmark is due for release in 2023 and plans to fill this gap by adding an indicator (in beta form) that would collect this data.

Additionally, NZIF explicitly requests investors increase allocations to "climate solutions" at both the portfolio and asset class levels and set targets accordingly. To do this credibly requires assessing relevant revenue (and/or capex) at the corporate level. Criteria 5 of NZIF's Portfolio Coverage Target states that decarbonisation strategies should contain "measures to be deployed to deliver … proportions of revenues that are green and where relevant increases in green revenues". Again, indicators 5 and 6 of V2.0 of the CA100+ Company Benchmark will encourage relevant company disclosure on this. However for most listed companies, precise definitions of climate solutions have yet to be established. Forthcoming work in this area from IIGCC will seek to develop more detailed guidance, aligned with regional taxonomy definitions.

Another important difference between the two sets of criteria is scope. While the benchmark focusses on the most emissions intensive companies, NZIF's listed equity alignment criteria is designed to apply to a much broader corporate universe. Investor portfolios typically include stakes in hundreds, if not thousands, of publicly listed companies ranging widely in size, emission intensity, domicile and sector. This broader applicability justifies NZIF adopting a tiered approach to assessment, where companies outside emissions intensive sectors are assessed on only a sub-set of criteria.

Corporate transition plan guidance that supports NZIF

This section summarises the corporate transition plan guidance detailed in sections 1 to 5. It sets out at a high level the principles underpinning the guidance and how it can be applied by investors implementing NZIF.

The guidance is based on NZIF listed equity alignment criteria; the CA100+ Company Benchmark; a review of other frameworks mentioned previously, and new metrics developed by IIGCC in conjunction with its members.

Key components of a credible corporate transition plan

At its simplest level, a transition plan should set out how a company intends to navigate the transition to a net zero economy. It should contain comprehensive emissions targets and state how a company intends to deliver them. Recognising that most companies cannot achieve net zero by themselves, it should also set out the key interdependencies; detailing how a company intends to tackle them and support the transition more broadly through engagement.

The essence of a credible transition plan focusses on decarbonisation and can be distilled into three components:
1. Comprehensive, aligned emissions targets.
2. A credible strategy to deliver those targets.
3. Demonstrable engagement commitments to support the achievement of targets.

NZIF makes two further requests that feed into how companies should set out their transition plans. The first is the disclosure of investment in 'climate solutions': low-carbon technologies, infrastructure, offsets, or other activities which that contribute substantially to, and/or enables emissions reductions to support decarbonisation in line with credible 1.5 pathways towards net zero. Not all companies are well positioned to provide climate solutions, but investors increasingly recognise that achieving economy wide emissions reduction will be impossible without accelerating funding of these activities. Some investment strategies explicitly focus on solutions as a growth opportunity. Both perspectives require solutions exposure to be tracked at portfolio level and this can only be done if companies provide the underlying data.

The second request is for good emissions and accounting disclosure that enables investors to calculate their overall portfolio emissions (and commensurate transition risk). Investors want to encourage this disclosure from companies of all types and sizes, irrespective of any commitment to reduce emissions.

Therefore, in addition to the three components above, investors seeking to identify and manage climate-related risks and opportunities within their portfolio also require transition plans to set out:
4. The contribution to climate solutions.
5. Supporting emissions and accounting disclosure.

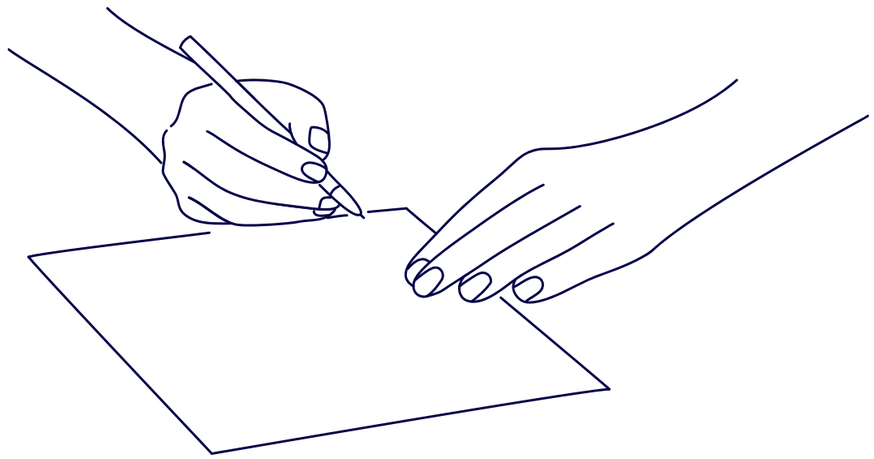
Together these five key components summarise what corporate transition plans should cover both to fulfil its basic requirement (setting out how the company intends to reduce its transition risk by decarbonising) and meet the specific disclosure needs of investors using NZIF.

Supporting sub-components and metrics
Each of these five key components is supported by several sub-components and metrics (see). These more detailed elements define how investors can assess the credibility of companies' transition plans and outline the data used to make these assessments. Areas such as strategy (Key component 2) which involve multiple activities are particularly tough to define and therefore this guidance uses seven sub-indicators (five assessing the strategy itself, two assessing credibility) and 14 metrics. Not all these sub-indicators will be relevant to all companies covered by this guidance. Separately disclosing plans on operational emissions and specific activities (2b and 2c respectively) may only be relevant to companies in some sectors (see text).

Focus on assessing alignment
Arguably the most useful datapoints for investors engaging with companies are the benchmarking of companywide emissions targets provided by independent assessors like SBTi or TPI. However to be credible, emissions targets require a strategy to deliver them. As a result investors are increasingly looking at how strategies to deliver targets can be assessed. Aspects such as operational emissions, planned fossil fuel production capacity, climate solutions investment and procurement strategy could ultimately be tested for alignment against climate scenarios. This guidance focusses on seeking disclosure on these items and others in a form that can potentially be assessed (see sub-indicators with a P in). In some cases the methodology needed to test alignment does not exist (marked as P in) but this guidance suggests how approaches may evolve to fill these gaps in the future.

Principles underpinning the guidance
To make these key components meaningful requires considering them as a series of constituent sub-components and metrics. Selecting and defining these sub-components and metrics involves considerable judgement. The following principles have been used to develop them:

1. **Simple and practical:** The proliferation of climate disclosure frameworks, regulation and data risks inundating both companies (preparers) and investors (users) alike. Much of this guidance focusses exclusively on areas already requested by other frameworks/regulation highlighting the overlap with other frameworks.
2. **Robust, science-based and credible:** The guidance aims to focus on the most pertinent emissions topics as identified by peer reviewed science and recommends that any assessments should be made against publicly available and widely respected modelling.
3. **Strategically flexible:** Different companies will have very different responses to the challenge and opportunities created by the transition. This guidance aims to avoid being prescriptive about which ones they should adopt.
4. **Disclosure vs alignment assessment:** Climate disclosure enables investors to make better-informed investment decisions and therefore improving it is beneficial in its own right. However, the ability to assess "alignment" by testing this disclosure against models is particularly valuable. This guidance introduces a number of additional assessment approaches which should help establish the credibility of transition plans.
5. **Focus on transition risk but seeking impact:** This guidance focusses on transition risk (as measured by value chain emissions) but, consistent with the principles set out in NZIF, companies should aim to decarbonise through actions which reduce real world emissions (have "impact").



What is not included in this guidance
This document exclusively focusses on the actions companies may take to address transition risk consistent with a 1.5°C scenario. Climate change is intensifying physical risks across most regions and sectors, threatening economic prosperity and therefore it is also an urgent issue for investors to address. However, as IIGCC has already published separate work on this topic for investors [10], [5], it is not considered here.

The issue of nature and biodiversity is also not considered here. While this paper recognises the need to integrate considerations of the potential co-benefits and trade-offs of transition on the natural world, the indicators needed to credibly track this are still at a relatively early stage of maturity. IIGCC expects to develop guidance on this topic in due course and is likely to be particularly relevant for companies in the food, agriculture and land-use sectors.

Consistent with investors role as owners, rather than managers, disclosure requests focus on high level actions and strategy, not on detailed operational implementation. For some companies, particularly those in emissions intensive sectors, business strategy and decarbonisation are closely interlinked. For many however, the transition will play only a minor role in financial planning. This framework assumes that companies will continue to provide appropriate financial metrics and guidance for aligned strategies via existing financial reporting documentation.

This guidance vs other corporate transition plan frameworks
Much of the guidance presented here reflects existing indicators developed for the CA100+ Net Zero Company Benchmark and significant work undertaken by other organisations on real-economy frameworks. Throughout the document this overlap is clearly signalled so companies and investors can see how this framework corresponds and prioritise action accordingly.

IGCC established five "basic principles" for a credible plan (targets, strategy, sector-specific actions, capex, and disclosure) that broadly echo the structure of the CA100+ Company Benchmark indicators 1 – 6 [2]. CIFF [11] highlighted eight "essential components" (four of which mirror the CA100+ Company Benchmark), emphasizing the need for rapid action and the importance of aligning targets, strategy and executive compensation. The recent publication of the UN's High-Level Expert Group's 10 point framework also centred around emissions targets and actions, mirroring the structure of the CA100+ Benchmark [12]. ACT has published assessment frameworks for over 10 emissions intensive sectors and a sector-neutral framework that introduced (amongst other things) assessment of value chain engagement [13]. CDP identified eight "elements" of a credible transition plan which additionally included financial planning and scenario analysis [14]. TPI's Management Quality indicator [15] classifies a range of actions by tiers. SBTi and TPI have established the methodologies by which corporate emissions targets are evaluated [16] [15]. In September 2022 CBI set out its proposed framework for assessing transition finance [17].

The work undertaken by the Taskforce on Climate-related Financial Disclosures (TCFD) has been particularly influential. Its initial recommendations report published in 2017 [18] identified four key elements (governance, strategy, risk management, and metrics and targets) and has been widely adopted in company reporting. This work was updated in 2021 [19] to provide additional guidance on transition plans. Much of it was then synthesized by GFANZ [4] and its five "themes" framework. TCFD also underpins the approach adopted by the TPT in the UK [7] [20] which aims to ultimately feed into both domestic and international regulation [21]. However, the European framework (EFRAG [6]) appears to be evolving down a slightly different track and is structured around commitment, strategy and disclosure.

In general these frameworks exhibit a very high degree of commonality with each other overall (see Exhibit 5). Some are broader, aiming to cover topics including nature (biodiversity), physical risk and adaptation for example. There are also some shortfalls which limit their usefulness for investors looking to implement NZIF. For example, many lack a discrete focus climate solutions investment. Many of the disclosure requests focus on attributes that cannot be quantifiably assessed for alignment against external benchmarks, or aggregated to the asset class or portfolio level.

Exhibit 5: IIGCC's Sector Neutral Corporate Transition Plan vs other frameworks

IIGCC Investor Expectations of Corporate Transition Plans		UN High Level Expert Group Recommendations*			UK TPT Disclosure Framework *		GFANZ Expectations for Real-Economy Transition Plans	
1. Comprehensive aligned emissions targets	a) Comprehensive, 1.5°C aligned commitment	1, 4			1.1	Does not specify alignment or 1.5°C	4.1	
	b) Short, med. & long-term targets	2, 4			4.3	Specifies interim but not short-term targets	4.4	
	c) Absolute and intensity	4			4.3		4.4	
2. Credible strategy to deliver the targets	a) Quantified decarbonization actions	4			2.1	Does not firmly specify that disclosure on actions to reduce emissions are quantified	4.2	
	b) Tackling operational emissions	5	Does not specify separate targets for Scope 1 & 2		4.3		4.4	
	c) Taking sector-specific actions	5	Specification of additional targets for fossil fuel activities and separate methane targets but does not specify SDA			(Will be specified in TPT's sector work)	4.4	Relevant breakdowns "where applicable" but does not specify SDA alignment
	d) Aligning capital allocation	4, 5			1.2/ 2.4	Does not specify disclosure of "fossil fuel intensive" capex or alignment	4.4	
	e) Setting out neutralization strategy	3, 4			4.4		4.4	Specifies emission targets should exclude offsets. Cost/co-benefit disclosure missing
	f) Underlying historic performance		Specifies demonstrating progress by hitting interim targets (vs trajectory) and no adjustment for underlying			Does not specify disclosure enabling the tracking of underlying emissions reductions	4.4	Does not specify progress on underlying basis or measurement of alignment
	g) Governance structure	4			5.1/ 5.4		4.5	
3. Demonstrable engagement commitments to support the achievement of targets	a) Value chain engagement	4			3.1		4.3	
	b) Climate policy engagement	4, 6			3.3	Does not specify a commitment to positive lobbying	4.3	
	c) Financiers and investments		Does not specify disclosure on investments or financing partners			Does not specify disclosure on investments or financing partners		Does not specify disclosure on investments or financing partners
	d) Just transition	4, 7, 9			1.1	Does not specify disclosure on how Just Transition impact can be mitigated	4.1	
4. The contribution to climate solutions	a) Climate solutions definition		Does not specify climate solutions definition			Does not specify climate solutions (opportunities) definition, investment, or production disclosure	4.2	
	b) Investment in solutions	5	Specifies a fully funded transition toward renewable energy and procurement but not investment / output				4	
	c) Low-carbon production						4.2/4.4	
	d) Nature based solutions	4			4.4		2,4	Specifies emission targets should exclude offsets. Cost/co-benefit disclosure missing
5. Supporting emissions & accounting disclosure	a) Emissions/energy consumption	8	Does not specify energy consumption		4.3	Does not specify energy consumption	2	Does not specify energy consumption
	b) Impact of 1.5°C on accounts		Does not specify disclosure on the impact of 1.5°C on accounts			Does not specify disclosure on the impact of 1.5°C on accounts	2	

● Full Alignment
● Partial Alignment
○ No matching indicators

* Based on consultation document. Framework not finalised at the date of publication. TPT additionally specifies disclosure on internal policy environment (indicator 2.3), governance, business and financial metrics and targets (indicators 4.1 & 4.2) which is not reflected in the IIGCC framework

How investors implementing NZIF can use this guidance

This guidance sets out the key components of a credible corporate transition plan, consistent with the listed equity and corporate fixed income alignment criteria set out in the NZIF. It is a sector neutral framework designed to cover the whole of an investors portfolio including both high and lower impact companies. Many of the disclosure requests focus on attributes that can be quantifiably assessed for alignment against external benchmarks and aggregated to the asset class or portfolio level. This data is designed to be used to inform investor's engagement, voting and broader stewardship activities as well as assess their transition risk and track progress of portfolio decarbonisation.

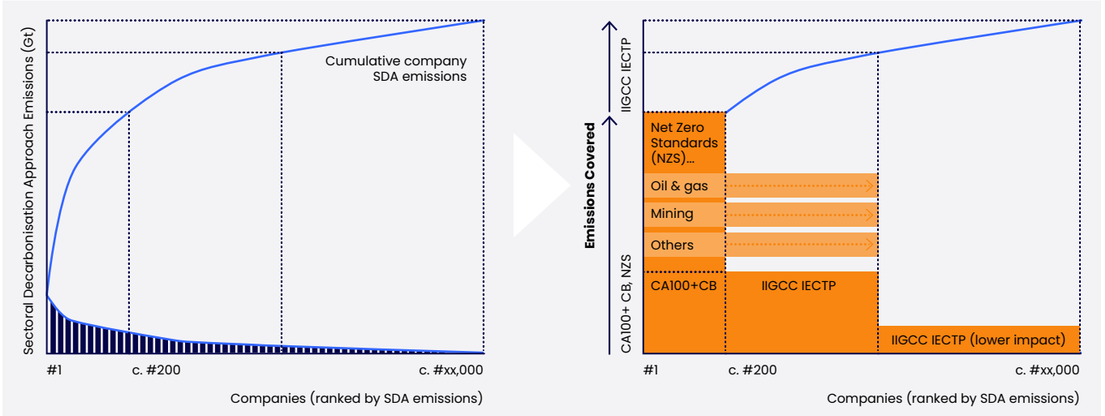
How the guidance relates to existing CA100+ Company Benchmark
Ranking companies by their emissions within the relevant SDA (sectoral decarbonisation approach) boundary, the assessments provided by the CA100+ Company Benchmark cover a substantial proportion of portfolio emissions but relatively few (159) companies.

Net zero standards are designed primarily to complement the CA100+ Company Benchmark by providing a more detailed assessment of the transition plans of companies in high emitting sectors covered by SBTi or TPI target setting methodologies (see [22]). NZIF currently determines these high impact sectors consistent with TPI's segmentation. Ultimately net zero standards can be used to assess all companies in a high emitting sector, including those currently outside focus of the CA100+ Company Benchmark. As the number of net zero standards increases, it is likely that the overwhelming majority of portfolio emissions will be covered by detailed, sector specific frameworks. However it will take time to develop net zero standards for all emission intensive sectors.

The primary aim of this guidance is to broaden the assessment of transition plans consistent with the NZIF listed equity and corporate fixed income alignment criteria beyond the current focus of the CA100+ Company Benchmark. It can also be used to assess companies in emissions intensive sectors where Net Zero Standards do not currently exist.

Beyond these high impact sectors there is also a "long tail" of lower impact companies. A full assessment for all these companies is not practical and, given they are likely to be less emissions intensive, may not be necessary. Consistent with the approach adopted by the NZIF listed equity alignment criteria, this guidance suggests that lower impact companies are assessed on a subset of sub-components.

Exhibit 6: Schematic showing the coverage of CA100+ and IIGCC corporate disclosure frameworks



The development of this guidance has also informed IIGCC's input into the CA100+ v2.0 consultation in the area of historic emissions performance, absolute emissions and climate solutions. The v2.0 is likely to reflect this feedback and be used for public assessments for the first time later in 2023.

[2] High Impact Sectors are: Electricity Utilities, Oil & Gas, Oil & Gas Distribution, Coal Mining, Autos, Airlines, Shipping, Aluminium, Cement, Pulp & Paper and Steel. See pg 26 NZIF for corresponding GICS Sector names and sub industries [24]

Mapping sub-components onto NZIF's alignment maturity scale
The sub-components set out in also can be explicitly used to allocate a company to NZIF's alignment maturity scale (see Exhibit 4). Exhibit 7 sets out the transition plan guidance sub-components that map onto NZIF's six listed equity and corporate fixed income alignment criteria. Grey text indicates alignment criteria that lower impact companies do not need to meet.

Exhibit 7: Assessing alignment maturity using the Investor Expectations of Corporate Transition Plans (IECTP) sub-components

NZIF Alignment Maturity Scale →	i) Not aligned	ii) Committed to aligning	iii) Aligning towards a NZ pathway	iv) Aligned to a NZ pathway	v) Achieving net zero
NZIF Corporate AC/Investor Expectations of Corporate Transition Plans sub-components (If the corporate has ...) ↓**					
	Emissions at, or close to, net zero				●
3 / 2f	Aligned emissions performance*			●	
6 / 2d	Aligned capital allocation			●	
5 / 2a	Quantified main decarbonisation actions		●		
4 / 5a	Disclosed emissions*		●		
2 / 1b	Set short, med. & long-term emissions targets*		●		
1 / 1a	Made a comprehensive 1.5°C aligned commitment	●			

● Additional criteria a company must meet to move to that alignment category

* Alignment criteria that lower impact companies need to meet.
** Corporate AC = Listed Equity and Corporate Fixed Income Alignment Criteria.

As the NZIF is updated over time via member and stakeholder engagement, the criteria to assess the alignment maturity of both high and lower impact companies may evolve and be combined with an evaluation of the alignment of the emissions targets using Cumulative Benchmark Divergence (CBD) approach set out on page 26.

Underpinning the requests of the Net Zero Engagement Initiative (NZEI)
This guidance supports the launch of IIGCC's NZEI which aims to broaden the scope for investor engagement beyond the CA100+ company list. It aims to provide a forum for investors to scale and accelerate engagement across portfolios and meet NZIF's engagement goals. As part of NZEI investors wrote to companies, setting out four clear expectations on transition plans and a timeframe for demonstrating leadership. These expectations and the links to corresponding NZIF Corporate Alignment Criteria and IECTP are set out in Exhibit 8.

Exhibit 8: The Expectations set out by the Net Zero Engagement Initiative (NZEI)

Letter #	**Criteria**	**Description**	NZIF Corp AC	IECTP sub-component
1	**Comprehensive net zero commitment**	Is there a comprehensive commitment to reducing emissions to net zero by 2050 or sooner, covering all relevant business areas and all material Greenhouse Gas (GHG) emissions scopes (1, 2 and 3)?	1	1a
2	**Aligned GHG targets**	Is there short, medium and long-term GHG targets aligned with the relevant emission pathway and consistent with 1.5°C degrees?	2	1b
3	**Emissions performance tracked**	Are GHG emissions specifying scopes 1, 2 and 3 (breaking out material Scope 3 categories) and enabling investors to track underlying decarbonisation progress against GHG targets?	3, 4	5a, 2f
4	**Credible decarbonisation strategy**	Disclose and quantify the principal actions that you will take to deliver the emissions targets (see point 2) including setting out capital expenditure plans and investment in climate solutions where relevant?	5, 6	2a, 2d, 4b

Corporate transition plan by component

The following sections describe the rationale for each key component in turn. Summary tables set out what data investors (users) will expect companies (preparers) to disclose within their transition plan and how that disclosure can be assessed for alignment. Each component is broken down into sub-components and mapped against both the relevant NZIF listed equity alignment criteria and other frameworks to enable investors and companies to understand the overlap.

1 Comprehensive, aligned emissions targets

Decarbonisation consistent with the Paris Agreements objectives of limiting global warming to 1.5°C requires rapid and substantive changes across large swathes of the economy, particularly in emissions intensive sectors. These changes create "transition risks" (and opportunities) for individual companies. Transition risks include demand shifts, legal action, reputational damage, and policy changes, all of which could ultimately result in material financial impacts [23].

While not perfect, annual emissions are typically considered a good proxy for these transition risks. Therefore, a credible transition plan should start with a commitment to reduce emissions. This commitment is more than an act of public goodwill from a company; it demonstrates to investors and other stakeholders that it has identified its transition risks, their financial implications, and has a plan to address them.

Comprehensive

For companies intending to get to net zero, this commitment should be comprehensive. It should cover all activities, regions and gases. Critically it should cover not just the emissions it generates directly (scope 1), and those it is responsible for indirectly as a result of the energy it purchases (scope 2), but also those in its value chain (scope 3). Companies sometimes suggest that either because they do not have a direct (legal) responsibility for value chain emissions or a limited ability to influence them directly, they need not address them. However, they may still pose a transition risk with financial implications which they would have an obligation to reduce44. Methodologies to set and assess targets relative to a 1.5°C scenario are now established for most emission intensive sectors (see Exhibit 10). These methodologies serve as a guide as to the minimum scope of emissions that should be covered: a comprehensive commitment often requires broader coverage[3].

Exhibit 9: Component 1 - Comprehensive, aligned emissions targets

Sub-Component	Considerations for preparer		Considerations for user: Disclosure test	Considerations for user: Alignment test	Equivalent in other frameworks*: NZIF	CA100+ CB	CDP	EFRAG	TPI	SBTi	ACT	IFRS	GRI
a) Has the company made a comprehensive commitment to reduce emissions consistent with a 1.5°C scenario?	• Comprehensive is defined as all material GHGs, emission scopes, regions, and covering the whole organization. Do they cover scope 3 or at least the categories deemed relevant by TPI/SBTi and IIGCC/CA100+ SDA+ analysis (see Exhibit 10 & 14) • Are the scenarios consistent with 1.5°C low/no overshoot include IPCC C1 and IEA NZE		• Can be assessed using two binary metrics on comprehensiveness and explicit mention of 1.5°C scenario	• None	1	1	C3.1	EI-1a	MQ Q3				
b) Has the company set short, medium and long-term targets on the same comprehensive basis?	• Are the emissions targets set on the same comprehensive basis as above with separate short (<2026), medium (2026-2036) and long term (i.e. 2050) targets		• Presence of compatible targets can be assessed as three binary metrics	• Three binary metrics comparing company target with sectoral pathway • Single cumulative benchmark divergence metric measuring alignment of company pathway in %	2	2 3 4	C4.1-4.3	EI-3	CP, MQ Q7/13	1.5°C	GEI1-3	Para 23	
c) indicates absolute and intensity	• Where a company sets company-wide emissions intensity targets, has it converted them to absolute (within an indicative range) and intensity (if originally set on an absolute basis)		• Presence of converted compatible targets can be tested as binary metrics	• Absolute targets can potentially be separately benchmarked	G	③	C4.1a-b	EI-3b		1.5°C			

Full coverage
Partial coverage

Sources: NZIF [24] , CA100+ [3], CDP [25] , EFRAG [6], TPI [15], SBTi [16], ACT [26], IFRS [21], GRI [27]

[3] In some cases (e.g. Power) the emissions and activity boundaries adopted by assessment methodologies are restricted by the data available and the need to ensure consistency with emissions budgets used in the sectoral decarbonisation approach (SDA). Companies in emissions intensive sectors should adopt an "SDA+" approach: where activities straddle multiple SDAs they should consider setting additional targets and where elements of those targets can be separately assessed, subsidiary targets should be set (see section 2c and Exhibit 14 for more details).

Exhibit 10: Coverage and methodology of tools assessing the alignment of "real-economy" company targets with 1.5°C

Cluster	Sector	TPI		SBTi		
		Emissions Scope	Intensity Denominator	Pathway		Guidance
				Near-term	Long-term	
Energy**	Power	1 (gen only)	Electricity generation (tCO_2/MWh)	☑	☑	☑
	Oil and Gas	1, 2, 3 (Cat 11)	Primary energy supply (gCO_2e/MJ)	☑	☑	–
Transport**	Automobiles	3 (cat 11)	Emissions per kilometre* (gCO_2/km)	☑	–	☑
	Airlines	1	Revenue tonne kilometre (gCO_2/RTK)	☑	☑	☑
	Shipping	1	Per tonne kilometre (gCO_2/tkm)	☑	☑	☑
Industrials and Materials **	Cement	1	Cementitious product (tCO_2/t)	☑	☑	☑
	Diversified Mining	1, 2, 3 (cat 10,11)	Copper equivalent (tCO_2/tCUe)			
	Steel	1, 2	Crude steel production (tCO_2/t)	☑	☑	☑**
	Aluminium	1, 2	Aluminium production (tCO_2/t)	–	–	–
	Pulp and Paper	1, 2	Pulp, paper, paper board production (tCO_2/t)	–	–	–
	Chemicals			☑	☑	☑
Others	Apparel and Footwear			☑	–	☑
	Buildings**			☑	☑	☑
	Financial Institutions			☑	☑	☑
	Forest, Land and Agriculture			☑	☑	☑
	ICT			–	–	☑
	Cross- Sector Pathway ***			☑	☑	☑

☑ 1.5°C pathway / guidance available
☑ 1.5°C pathway / guidance planned: date known
– 1.5°C pathway / guidance planned: no timeline available

* New vehicle sales
** Uses cross-sector pathway (an update of road and rail transport guidance will be provided in the future (date TBC) which will include pathways for use phase emissions from newly manufactured vehicles)
*** Uses absolute emissions

Aligned

These commitments should also be "aligned". Broadly speaking this means they should imply decarbonisation consistent with a climate benchmark. The importance of target alignment within a transition plan cannot be overstated. These climate benchmarks are derived from absolute emissions budgets and can be sector based or sector neutral; they represent the emissions intensity or rate of decarbonisation the average company in that sector needs to achieve to avoid breeching the relevant global climate target. Therefore, for investors seeking to limit climate change and committed to decarbonise their portfolios, alignment to a benchmark is a critical consideration.

Alignment provides an excellent indication of relative transition risks and opportunities. Ceteris paribus, a company with emissions intensity below the relevant benchmark is likely to have less exposure to sharp declines in fossil fuel demand, the financial impacts of higher carbon taxes or legal action. It is also likely to have greater exposure to rapid growth in low carbon production.

The climate benchmark adopted by NZIF is consistent with the Paris Agreement's objectives of limiting the increase in global temperatures above pre-industrial levels to 1.5°C. This is consistent with C1 scenario set out in the recent IPCC AR6 report [28] and the IEA's NZE [29]. The CA100+ [3] and the UN convened Net Zero Asset Owner Alliance (NZAOA) set a similar level of ambition [30].

Justification for retaining this level of ambition is clear. Both the IPCC SR1.5 and AR6 reports highlight the significant physical and socio-economic impacts from global temperatures rising beyond this point [31], [32]. While it concedes that the chances of restricting emissions within a 1.5°C budget are slim it is still possible with urgent action.

External organisations like SBTi and TPI typically evaluate alignment by plotting the emissions intensity implied by the company target and comparing it to a sector benchmark (see Exhibit 11a). The CA100+ Company Benchmark utilises TPI data to assess alignment as a binary indicator at three time points (short, medium and long-term). This intensity approach has the advantage of enabling underlying rates of decarbonisation to be tracked through growth cycles and/or changes in market share.

However, there are different ways to test alignment and no approach is perfect. For example, an exclusive focus on intensity does not indicate the reduction in absolute emissions. Given that reductions in cumulative absolute emissions over time determine climate change, this metric is considered more closely aligned to climate science. Nor does the point-in-time approach capture the overall divergence of the pathway against a benchmark: all other things being equal, a company that aims to reach net zero but back-ends its reductions has greater transition risk than one taking early action. Converting to a binary aligned/non-aligned score also fails to differentiate between companies taking no action and those that only just fall short of a benchmark.

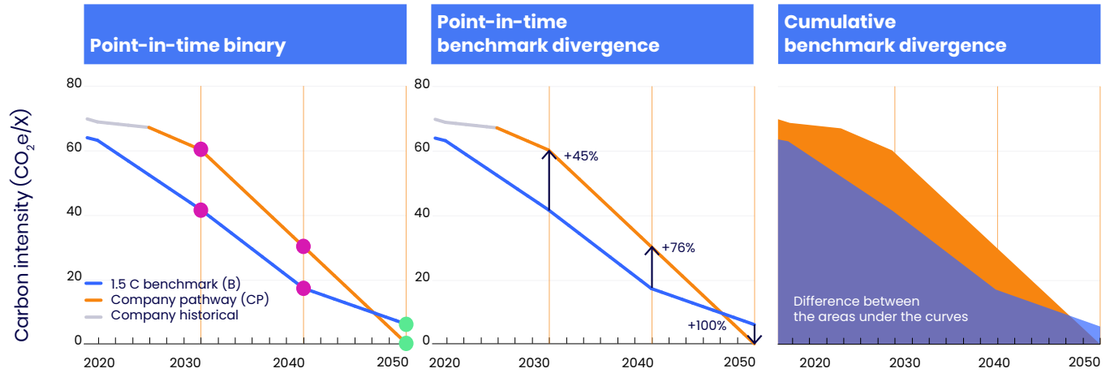
These issues are particularly critical in a 1.5°C scenario which requires rapid absolute emissions reductions between now and 2030. Investors wishing to understand whether company targets are sufficient to address transition risk in this scenario need to know the expected implications of intensity targets on absolute emissions. NZIF specifies portfolio reference targets can be set in absolute or intensity terms but should be based on net zero pathways that will meet required absolute emissions reductions (see Targets and Objectives [24]) and absolute emissions should be tracked at portfolio and asset level (Criteria 3 Note 15). A sub-indicator specifying that medium term emissions targets should indicate the absolute reduction is likely to be included in v2.0 of the CA100+ company benchmark.

[4] Absolute emissions are not a perfect metric– performance can be heavily skewed by economic cycles or M&A for example – but they do provide a closer link to emissions budgets and are preferable to some investors.

For this reason, companies setting targets on an intensity basis should also state how they expect their medium and long-term targets to convert to absolute emissions. The close link between absolute emissions and activity growth, which is difficult to predict over long periods, mean companies can be reluctant to do this. Setting this in a range, an approach established in the NZS O&G [22], consistent with NZIF's target-setting guidance can address this. Consistent with NZIF's guidance, the Standard also focuses on setting the emissions reduction targets based on the absolute emissions reductions needed to achieve global net zero emissions by 2050. SBTi has developed a sector-neutral methodology to assess the alignment of absolute emissions targets based on the implied rate of contraction and it is likely that further sector specific absolute methodologies will be developed in time.

In addition to the absolute and intensity debate the concept of "alignment" itself is likely to evolve. One approach is a variation of the benchmark divergence metric (BDM) approach described by PAT [33] which IIGCC is currently developing. Binary testing at specific points in time as currently used in the CA100+ Company benchmark (see Exhibit 11a). Calculating the area implied by a company emission intensity pathway and that of the benchmark allows investors to assess performance across the entire pathway and quantify the overall level of divergence (see Exhibit 11c). This option can be used to identify whether a company is taking action sufficiently early and its relative performance to its benchmark and peers. IIGCC is likely to bring forward further work on this topic in the near term.

Exhibit 11: The potential evolution of alignment assessments a) point-in-time binary approach (CA100+), b) point-in-time Benchmark Divergence Metric (BDM), c) Cumulative BDM



	2030	2040	2050
Point-in-time binary	✗	✗	☑
Point-in-time benchmark divergence	+45%	+76%	-100%
Cumulative benchmark divergence	2014-2050: +27%		

	Point-in-time binary	Point-in-time benchmark divergence	Cumulative benchmark divergence
Pros	• Simple to compute and communicate	• Captures relative performance	• Captures relative performance • A more accurate measure of performance over pathway
Cons	• Binary output does not capture relative performance • Time points may not be representative of overall performance	• Time points may not be representative of overall performance • Unstable as B tends to zero	• More complicated to compute and communicate • One step removed from climate impact when using intensity rather than absolute emissions

2 Credible strategy to deliver those targets

Transition strategy is arguably the most complicated transition plan component to define and evaluate. Each company will have a different strategy: they operate in different sectors, start in different positions and have different underlying business objectives. "Strategy" also encapsulates a diverse range of activities (product development, decarbonisation actions, financial planning, financial returns, investment etc) and therefore any attempt to define credibility must be multi-faceted. Any definition should also avoid inadvertently constraining broader strategic flexibility.

This guidance adopts a straightforward definition of strategy as; how a company intends to deliver its emissions targets. It seeks to distil strategy into common elements that all transition plans should cover and focuses on ones that can be tested for alignment. In the template shown in Exhibit 12 strategy covering seven key sub-components; five components (feasible quantified actions, operational emissions, subsidiary targets, capital allocation, neutralising technology) cover action companies should take and two additional elements (emissions performance and governance) address credibility.

Sub-component 2a: Feasible quantified actions to meet targets

Primarily, companies should set out their transition strategy by disclosing the principal actions they intend to take to decarbonise, quantify the emissions reductions expected from each action and the contribution of those actions to the target. This request draws on the approach adopted by CA100+ indicator 5.1 and Net Zero Standard for Oil and Gas and has elicited increasingly useful disclosure for investors (see Exhibit 13). The most recent iteration of the CA100+ Company Benchmark saw over 80 companies (49%) score positively on this indicator. This formulation does not specify or make judgements on what actions companies should take or their reliance on them and thereby preserves strategic flexibility. Companies may not be able to identify all the actions they expect to take today (an "other" category can be used) but the disclosure should ensure that the actions are described clearly, either in the text or in any accompanying graph, and are quantified numerically (even if they are stated as a range).

Ideally, companies should set out how they intend to deliver all their company-wide emissions targets in this way, however particular focus should be paid to the medium-term horizon. The rate of change implied by a 1.5°C scenario makes delivering these targets particularly challenging and companies should have reasonable visibility on how their targets are going to be reached. Most investors would concede that visibility on long-term (i.e. 2050) actions is much lower and hence more difficult to accurately specify.

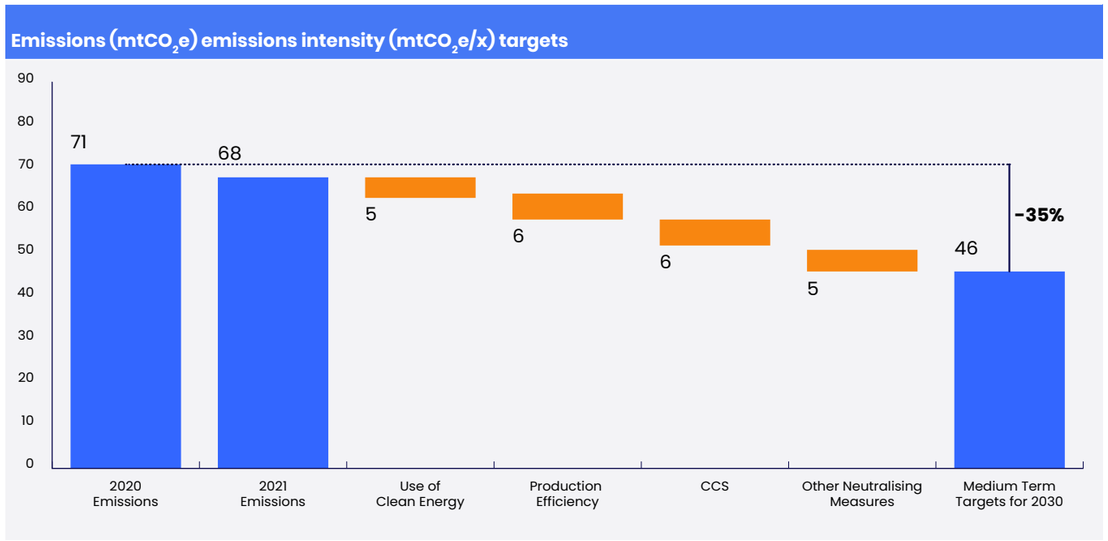
Exhibit 12: Component 2 - credible strategy to deliver those targets

Sub-Component	Considerations for preparer		Considerations for user/assessor: Disclosure test	Considerations for user/assessor: Alignment test	Equivalent in other frameworks*: NZIF	CA100+ CB	CDP	EFRAG	TPI	SBTi	ACT	IFRS	GRI
a) Has the company disclosed quantified actions to deliver the emission targets set out in 1b?	• Is there a clear description and quantification of the main actions the company intends to take reach its main emissions targets • Not all actions need to be specified ("other" can be used) • Is there at least a breakdown of the medium-term target • Is technological/economic feasibility quantified		• Does the company disclose quantified actions accounting for 100% of the reduction in the medium-term target. • Does the company provide some indication of the technical and economic feasibility of their targets	• None	❺	❺	C4.3c	EI-4			GE5.3		
b) Has the company aligned operational emissions targets?*	• Has the company set additional medium and long-term targets for Scope 1 & 2 collectively aligned with a 1.5°C pathway • Has it set out a strategy (similar to 2a) for delivery of the target • Disclosure requests may evolve and include separate Scope 2, transport emissions and energy efficiency targets (see text)		• Can be assessed using two binary scores, one based on the presence of an operational emissions target, the second on quantified actions to deliver. • Additional electricity, transport and energy efficiency targets can be assessed similarly	• A method to assess operational emissions is in development but expected to imply a c45-50% cut in absolute emissions and 35% in intensity by 2030						GE1.1		
c) Has the company set the appropriate aligned additional or subsidiary targets?*	• Has the company set the appropriate additional or subsidiary long-term emissions targets for its sector (see Exhibit 14: "SDA+". Examples of Additional (A) and Subsidiary (S) emissions targets in the Power, Oil & Gas, Steel and Diversified Mining sectors) disclosing base year emissions and medium-term reduction		• Does the Company set out medium and long-term reductions from a stated base year value and how it will deliver those targets	• Subsidiary and additional targets should be assessable against 1.5°C pathways as the methodologies are developed			11.2			Targets excl offsets		
d) Is capital allocation consistent with its decarbonization strategy and 1.5°C commitment?	• Has the company made an explicit commitment to align investment (inc. M&A) with decarbonization strategy and 1.5°C • Has the company disclosed fossil fuel investment plans consistent with the IEA's NZE • Has the company publicly disclosed current and planned future fossil fuel capex • Has the company explicitly stated current and future decarbonization capex and the expected emissions impact		• Does the commitment reference 1.5°C and include M&A • Does the fossil fuel commitment reference production and ending new capacity capex • Does the decarbonization spending reference the expected emissions impact	• Commitments to ramp down fossil fuel production capacity, phase-out dates and low carbon production capacity growth can all be tested against the IEA's NZE	❻	❻							Para 13biii
e) Has the company disclosed any intended use of neutralizing measures (nature and technology-based solutions)?	• Has the company stated the expected total and individual reliance on Offsets, CCUS, BECCS, DACCS and customer actions in main targets • if using offsets (NBS), is the strategy set out clearly with major parameters (see text) quantified • if using technology-based solution, is the strategy be set out clearly with major parameters (see text) quantified		• Do companies disclose the expected total and individual contribution of TBS and NBS (even if zero) with presence assessed using binary scores • The presence of appropriate NBS/TBS strategy disclosure can be tested on a binary basis but should include all listed parameters to score	• Neutralising measures should address residual emissions only and account for <50% of any target • Further work is needed to define sector specific values	G	⑤	11.2	1-3c/26		Targets excl offsets			Para 13biii
f) Is current underlying decarbonization consistent with target & 1.5°C?	• Does the company disclose emissions on boundary consistent with the target (see component 1) and Scope 1&2 (where different) and does the company set out the impact of M&A and offset use to help investors calculate underlying y-o-y change		• Could be tested using two binary metrics, one covering the basic emissions disclosure and the second on disclosure of any adjustments which allows underlying performance to be calculated	• YoY change in emissions can be tested for alignment with a) company target and b) 1.5°C trajectory	❸	⑪	C5.1a/7.9				GE2.1/2		
g) Is appropriate governance in place to deliver the target	• Is there someone at the board level with responsibility for delivering its transition plans • Does the board have remuneration plans linked to target delivery		• Could be tested using two binary Y/N metrics, one covering board level responsibility and the other	• None	❽	❽	C1		MQQ6/15		GE5.1/2/4	Para 21g	

● Full coverage
● Partial coverage

* These sub-components are conditional. Separate operational emissions targets should be set in sectors where the SDA includes Scope 3 : ie Automotive, Diversified Mining and Oil and Gas (see [34]). Subsidiary or additional targets should be set in the Power [35], Oil & Gas [22], Steel [36], Diversified Mining sectors with targets in other sectors likely

Exhibit 13: Communicating a quantified medium-term emissions target



Companies can further enhance the credibility of their disclosure by attempting to quantify both the technological and economic feasibility of reaching their targets. Many have made long-term commitments but admit that delivering them will require technology that is either not yet available or currently prohibitively expensive. By disclosing the share of the target that can be delivered by proven and probable abatement measures (technological feasibility), a company can convey to investors the risk that it misses its targets. Economic feasibility can be assessed using a marginal abatement cost curve (MACC) which ranks actions by their cost and their emissions impact. MACC highlights which actions are the cheapest and thereby establishes a priority order for action. Investors can use this information to both gauge the overall cost of decarbonisation and what policy or technology changes are needed to accelerate decarbonisation.

Sub-component 2b: Aligned operational emissions (Scope 1 & 2) strategy

Companies targeting emission reduction in sectors where the relevant SDA methodology incorporates their Scope 3 (e.g. Oil and Gas, Autos or Mining) typically include their own emissions within these commitments (i.e., Scope 1 & 2). They are directly responsible for emissions from their own energy consumption, and they also have a greater ability to effect reductions. In the case of Oil and Gas, operational emissions may be a small proportion of their value chain emissions but they are substantial in any other context (5.3 $GtCO_2e$ annually).

Setting a separate operational emissions target, with separate medium and long-term components enhances focus on these emissions. Crucially these targets can also be evaluated against climate benchmarks, enabling investors to test of the credibility of the overall strategy. **Companies should additionally disclose the actions they intend to achieve the target** (as shown in Exhibit 13).

A more granular approach to assessing operational targets is likely to evolve in time. General business energy consumption (i.e. excluding emissions intensive energy, transport and industrials sectors) is a significant part of total global demand (9%, [29, p. 196]); therefore pledges to decarbonise that consumption could be a powerful stimulus for necessary changes on the supply side. This approach could be particularly effective in signalling the increased demand for net zero electricity for example. For companies outside high emission sectors, reported electricity consumption emissions (i.e. Scope 2) account for on average 36% of operational emissions and the need for action is particularly urgent: in its NZE the IEA models emissions from electricity generation falling 58% by 2030 (from 2019) and reaching net zero in developed markets by 2035. Therefore to be considered aligned with net zero, arguably companies should set out plans to reduce Scope 2 emissions consistent with this timeline.

[5] Not all sectors need to separately disclose operational emissions targets. Power, airlines, shipping and all industrial and materials companies excluding mining (ie. Steel, Cement, aluminium, paper) are assessed on Scope 1 or Scope 1 & 2 already.
[6] A cross-sector methodology benchmarking operational emissions reductions is currently being developed.

The effectiveness of such a request on Scope 2 emissions may be impacted by reporting issues. The credibility of Scope 2 market-based reporting which companies use to reflect Power Purchasing Agreements (PPA) is severely undermined by the additional inclusion of renewable energy certificates (RECs) [37]. Consequently, this measure is not considered reliable by many investors. It is hoped that fit-for-purpose definition of market-based scope 2 will emerge, one that reflects PPAs but excludes RECs.

Aside from Scope 2, there are other facets of operational emissions that companies could disclose to highlight comprehensiveness of their strategy. After electricity, transport emissions are the next most urgent topic to address. While for most businesses these are small, for some (e.g. fleet operators) they can be significant. Finally, the NZE also consistently emphasizes the importance of a significant acceleration of energy efficiency measures, particularly in the building sector, to reduce energy demand. In the current pricing environment businesses are likely to be hugely incentivised to do this , but progress here substantially accelerates the reduction in emissions and the cost of transition.

Sub-component 2c: Sector specific actions

Typically, companies set and are assessed on targets which include emission scope boundaries consistent with the sectoral decarbonisation approach (SDA). These can be assessed by organisations like TPI and SBTi (see Exhibit 10). The TPI assessments provide the foundational test of "alignment" that populates CA100+ indicators 2 – 4. However, as investor demands and modelling data become more granular there is scope to test other emissions commitments. Such assessments help establish both the comprehensiveness of a transition plan and its credibility. IIGCC/CA100+'s Global Sector Strategies work identified further alignment assessments that could be conducted in the Power utilities [35], Oil and Gas [22], Steel [36] and Diversified Mining sectors (see Exhibit 14). Similar "SDA+" assessments are likely to be applicable to other emission intensive sectors.

[7] Based on reported Scope1 and 2 (location based) CDP data excluding manufacturing, power generation, fossil fuel and transportation services sectors

Exhibit 14: "SDA+". Examples of Additional (A) and Subsidiary (S) emissions targets in the Power, Oil & Gas, Steel and Diversified Mining sectors

Power		**Oil & Gas**		**Steel**		**Diversified Miners** (provisional)	
E^	Comments/Rationale	E^	Comments/Rationale	E^	Comments/Rationale	E^	Comments/Rationale
S3 cat 11 (A)	Many power utilities also sell natural gas which releases significant emissions when used - decarbonisation of this activity follows a slower path than electricity.	S3 cat 11 (upstream, (S)	Integrated oil and gas companies have upstream businesses. A coherent transition requires these activities to reduce alongside broader downstream emission targets.	S1&2 (primary steel, S)	Primary steel manufacturing is very high intensity. Actions to reduce emissions should prioritise this form of manufacturing.	S3 cat 11 (S)	Scope 3 typically accounts for >95% of a miner's lifecycle emissions. Therefore, miners that produce/ sell fossil fuels should separately disclose Scope 3 cat 11 downstream emissions and set targets accordingly.
S3 cat 1 (A)	Producing and transporting the gas used for both heating and electrical power generation can release significant (upstream) emissions. Power companies can be assessed on these emissions.	S1 (methane, S)	A large share of operational emissions in the O&G sector relate to the release of methane. As an O&G companies control their methane emissions, reductions have a direct impact on real-world emissions.	S1&2 (secondary steel, S)	Scrap-EAF production uses electricity. Electricity has to be substantively decarbonised in developed economies by 2035 (a much faster rate than steel).	S3 cat 11 (thermal coal, S)	As metallurgical and thermal coal have different pathways, companies should set separate targets.
S3 cat 3 (S)	It is important to consider the electricity purchased from third parties (including PPAs) and subsequently resold to customers.					S3 cat 4&9 (shipping, A)	Shipping accounts for the overwhelming share of most mining transport emissions and miners are substantial purchasers of capacity. Targets could potentially be benchmarked against IEA's NZE (45% reduction in intensity vs 2019).

E^ Emission scope and category
* See Power utilities [35], Oil & Gas [22], Steel [36] and Diversified Mining

Many of these "SDA+" methodologies have not yet been formally established but they are likely to become part of the tools available to investors in time. They can be broadly segmented into two categories:

Additional (A): emissions targets outside the boundary of the relevant approach that enhance the comprehensiveness of a transition strategy. In some emission intensive sectors, the relevant SDA methodology does not capture all the value chain emissions. Even where Scope 3 is included, it usually only covers one category (Category 11). Other emission categories can be particularly significant. Conglomerates may be exposed to multiple sectors.

It may be possible to additionally assess these other emission categories for alignment. For example, power utilities could be additionally assessed not just on the carbon intensity of the electricity they generate (the boundary of the SDA used by TPI), but also on the electricity they purchase (Scope 3 category 3) and a total energy sold metric which also includes any gas sales (Scope 3 category 11) [35]. The Net Zero Mining Standard workstream is currently evaluating the potential to assess commitments to reduce shipping emissions (a component of Scope 3 category 4 and 9). Mining companies are some of the largest purchasers of shipping capacity globally, hence targets here will help accelerate the transition of the shipping sector. Benchmarking will also enable leading commitments to be recognised.

Therefore, companies in emission intensive sectors where SDA+ assessments are likely to become available should set additional targets covering these emissions. Broadening the emissions boundary covered by a company target demonstrate that it is taking comprehensive action and can help drive engagement with its supply chain (consistent with components 1 and 3a respectively).

Subsidiary (S): emissions targets within the boundary of the approach that enhance the credibility of a transition strategy. In some sectors, separate assessments of emissions within the SDA target can identify if action is being taken on all parts of the business with sufficient urgency. For example, the Net Zero Standard for Oil and Gas (NZS O&G, [22]) asks integrated companies to set additional targets for their upstream businesses and for a separate methane commitment. Subsidiary targets for primary and secondary steel can demonstrate if a steelmaker is taking action with sufficient urgency on both production methods – particularly important given the much quicker decarbonisation path for the electricity used in secondary steel.

Exhibit 15: Scope 3 emissions distribution by category for selected companies and sectors

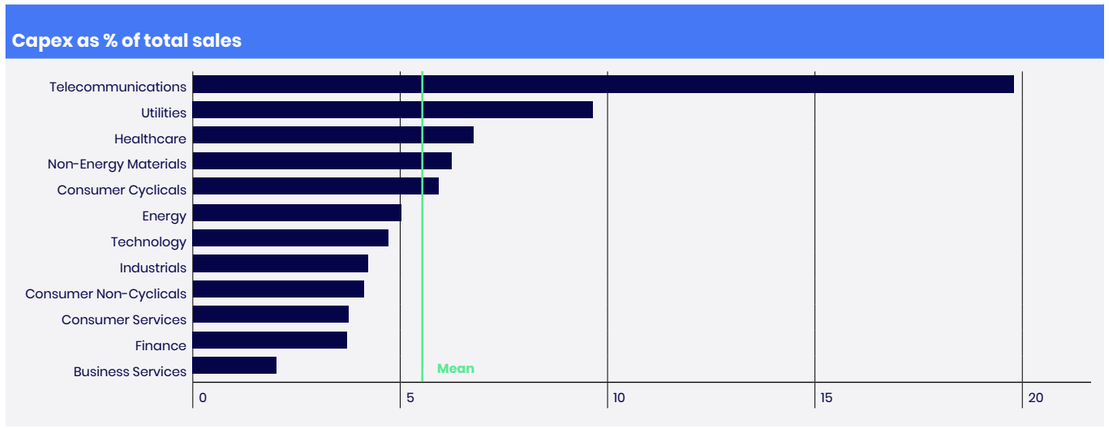
Scope 3 Category	Automotive	Consumer Goods: Food and Beverage	Consumer Goods: Non-Food	Chemicals	Mining: Coal Mining	Mining: Coal Mining & Diversified	Electricity Utilities	ICT: Hardware	ICT: Software	Industrials (Capital Goods)	Oil & Gas	Average
1. Purchased goods and services	16.0	61.2	18.2	26.2	5.8	1.2	5.6	75.4	-	2.6	2.6	8.0
2. Capital goods	0.7	1.2	0.6	1.7	0.4	Neg	1.2	-	18.5	0.1	0.3	0.5
3. Fuel and energy related activities	0.2	1.4	0.3	5.4	Neg	0.3	22.8	-	-	0.2	0.4	2.0
4. Upstream transportation and distribution	0.7	1.6	2.2	0.9	1.0	0.9	0.1	1.9	3.9	0.5	0.5	0.8
5. Waste generated in operations	0.1	0.3	0.2	0.5	0.7	-	Neg	-	-	Neg	Neg	0.1
6. Business travel	Neg	0.2	0.4	0.1	Neg	Neg	Neg	1.3	3.2	Neg	Neg	Neg
7. Employee commuting	0.2	0.2	0.3	0.1	Neg	Neg	Neg	0.8	1.5	Neg	Neg	Neg
8. Upstream leased assets	-	-	0.2	Neg	-	-	-	-	-	Neg	-	Neg
9. Downstream transportation and distribution	0.3	8.0	3.0	1.4	0.3	1.0	Neg	4.0	-	0.5	1.3	1.1
10. Processing of sold products	Neg	8.5	-	39.5	-	73.2	-	-	-	Neg	2.5	17.6
11. Use of sold products	80.4	13.3	70.3	6.1	90.8	23.1	58.5	16.4	-	95.8	90.4	67.4
12. End of life treatment of sold products	1.0	1.6	4.2	14.7	-	Neg	4.5	0.2	-	Neg	0.9	1.4
13. Downstream leased assets	Neg	-	Neg	0.8	Neg	-	-	-	-	-	-	Neg
14. Franchises	0.2	2.3	-	-	Neg	-	-	-	-	-	Neg	0.1
15. Investments	0.1	0.2	Neg	2.3	0.8	0.3	7.0	-	-	Neg	Neg	0.7
16. Other	-	-	-	-	-	-	-	-	72.9	-	-	0.1

- Highest emissions category
- 2nd highest emissions category
- 3rd highest emissions category

Sub-component 2d: Capital investment

Capital investment plans are typically an integral part of any strategy to reduce emissions. While most companies are not capital intensive (capex/sales <5%) many emissions intensive sectors are. Often the measures they need to take to cut their emissions or diversify into new (low carbon) products require up-front investment. This means that how capital is allocated is a very useful forward-looking indicator for investors, highlighting management priorities and long-term planning assumptions.

Exhibit 16: Capital intensity by sector and as an average for EU-listed companies



The wide variation in asset intensity and type also makes it one of the hardest areas of a transition strategy to assess robustly. To be broadly applicable, guidance must remain generic (more detailed disclosure can be requested by sector-specific standards). The approach of the current CA100+ indicator 6.1 which asks companies to commit to align their capex plans with their emissions targets and a 1.5°C scenario works well in this context. It gets to the heart of the issue: companies with a coherent strategy to deliver net zero should be able to commit to aligning capex with that strategy.

The guidance set out here encourages companies adopt a broader definition of capital investment, one that goes beyond capex (i.e. fixed PPE, as used by the CA100+) to encompass merger and acquisition (M&A) activities. Companies seeking to expand fossil fuel production and move into new areas often choose to do so via acquisition of assets or smaller players. Occasional major acquisitions can dwarf organic capex and lead to a significant increase in transition risk. Companies cannot provide forward-looking disclosure on specific M&A plans as this would breach competition law, **but it can commit that its investment strategy (including M&A) is consistent with its decarbonisation objectives. This demonstrates a comprehensive transition plan.**

Specifically, M&A within a net zero commitment raises an interesting question. Investors are increasingly gravitating towards an arguably more sophisticated perspective on corporate divestment strategies: public companies could achieve emissions targets through winding down or retiring their own production rather than simply selling it to third parties, who may be less scrupulous owners. EDF's study on transferred emissions in the US Oil and Gas sector highlighted this problem and set out guidance that could govern divestments [38]. But should the same principal also apply to acquisitions? If an acquisition transferred emissions from a company with no or inadequate emissions targets to one that does – even if it increased its emissions footprint – should it be encouraged? There are a range of investor views here and guidance governing what would be "acceptable" does not exist.

It must be said that there are other ways a company can demonstrate its investment strategy is consistent with any climate ambitions.

However, typically a large element of fossil fuel investment is "maintenance capex", spending on existing assets needed to sustain existing production (see [29, p. 103]). As assets are long-lived and certain levels of spending are required to ensure safe operation, it is difficult to say when spending should end or even how quickly it should fall.

[8] This is covered in more detail in the solutions, see page 40.

What investors are particularly interested in is the element of the capital budget funding new fossil fuel production/capacity. It is this spending that the IEA indicates is not consistent with 1.5°C and is particularly at risk of being stranded. Additional disclosure of current total annual investment in new production, and a budget for future investment in new capacity, clearly shows whether a company's capital investment plans are consistent with net zero. Where relevant this could be supplemented by disclosure on current and future fossil fuel production capacity or public commitments to end investment by a certain date.

Companies should also indicate the total projected investment in any emission-reducing measures alongside the reduction expected as a result of this investment. Some companies, particularly in the mining sector, do this already [39], [40]and for technologies like CCUS or DACCS it is particularly useful. Aside from clearly communicating the substantial investments they are making to reduce emissions it helps gauge how costly it is for these companies to decarbonise.

Sub-component 2e: Neutralising measures

One component of transition plans that investors consistently request enhanced visibility on is the use of "neutralising measures". This guidance defines neutralising measures as technology or nature-based approaches (often abbreviated to TBS or NBS) which either remove emissions from the atmosphere (also known as CDR or negative emissions and which can include DACCS or offsets) or reduce point source emissions (such as CCS). Neutralising measures also include actions which may be taken by customers down the value chain and ultimately reflected in downstream emissions factors as credible carbon accounting methodologies evolve. NZIF guidance specifies that NBS (offsets) are necessary where there are no technologically and/or financially viable alternatives to eliminate emissions, and that investing should be in long-term carbon removals. A sub-indicator on NBS is also likely to be included in v2.0 of the CA100+ Company Benchmark.

There are two reasons for enhanced disclosure of neutralising measures:

1. An established principle of climate science set out in the IPCC's SR1.5 [31] and incorporated in assessment frameworks and guidance [41] [42] [43] [44] is the need for all entities to primarily focus on reducing emissions as opposed to offsetting them to minimise the global risk of overshooting emissions budget. This principle is incorporated in assessment frameworks such NZIF, SBTi, GFANZ and TPI. SBTi's corporate net zero standard specifically excludes the use of offsets in the way it measures corporate targets for example. Investors need this disclosure to understand whether a company is adhering to this principle.
2. The effectiveness of both technology and nature-based solutions, both their potential to deliver genuine, sustainable emissions reductions (offsets particularly) and their cost-effectiveness (CCS/DACCS particularly) remains highly uncertain. In this context, investors consider strategies which rely on these options to be more risky.

In the first instance the disclosure investors are looking for is the overall reliance on neutralising measures within any company emissions targets (short, medium and long-term) and individual contributions of offsets, CCUS, BECCS, DACCS and customer actions. Arguably the principal of focussing on reductions suggests the contribution of neutralising measures should be limited to 50% and that use should be restricted to residual emissions [16]. This is a maximum that most companies should aim to be substantially below. As more detailed (and sector specific) work emerges it is likely that constraints around what forms an acceptable contribution on offsets per sector will become available and for most the acceptable maximum will be substantially lowered.

Given concerns about the effectiveness of offsets, their wider environmental and social impacts, and financial implications, company disclosure should go beyond just stating their contribution to targets. The precise list and value of parameters is not precisely defined currently: work in this area by VCMI [45] and ICVCM [46] is expected to be published in Q1 2023 and is likely to inform IIGCC's perspective. However it is likely to include the number, type, location, provider/certifier, any expected co-benefits, cost and projected cost. This disclosure should be set out in narrative form but contain quantifiable parameters where possible.

Where a company is planning to use neutralising technology a similar approach to disclosure should be adopted. Parameters such as the choice of technology, transport and storage options, projected date of deployment and capacity are useful indicators of the credibility of any company commitments.

[9] Admittedly the boundary between new capacity and maintenance can be somewhat blurry at times (eg. Extension of existing oil fields) but in most cases investments that lead to expansion in capacity can be tracked.

Sub component 2f: Underlying historical emissions performance

Beyond stating the actions it intends to take to deliver on its climate commitments, a company can also demonstrate the credibility of its strategy by disclosing what it has delivered historically. Annual reductions consistent with the trajectory implied by its targets or climate benchmark afford investors greater confidence that those targets will be achieved. Annual disclosure on emissions performance is specifically requested by criteria 3 of the NZIF listed equity alignment criteria and is likely to be included for the first time in v2.0 of the CA100+ company benchmark.

Making this disclosure meaningful does require specifying a few further parameters. Firstly, in an individual year performance can be skewed by any number of factors. Companies should provide disclosure which enables an assessment on an "underlying" basis. For example, stripping out the use of offsets and "one-off" actions like M&A gives investors a better idea of what is achievable in future years and what is being delivered through its own reductions. Second, disclosure should differentiate between reductions to emissions on a boundary consistent with its overall target (which could include Scope 3) and Scope 1 & 2 emissions which are under its control and where it has greater responsibility.

Sub component 2g: Governance

Last but not least, the credibility of a transition strategy can be further enhanced by showing the governance structure is in place to deliver. This issue is specified in indicator 8 of both the CA100+ and NZIF frameworks and is a core part of TCFD. More detailed components are set out in Exhibit 12 but in general companies should ensure there is board-level responsibility for delivery of the plan and the incentivisation to deliver it through explicit climate performance KPIs in the remuneration schemes. These should be transparent, quantitative and linked to the transition strategy. For instance, linking to underlying historical emissions performance (Sub component 2f), testing whether the annual fall in emissions (on an underlying basis) is consistent with the trajectory implied by the short term target or 1.5°C pathway, could be particularly effective in this respect.

3 Demonstrable engagement commitments to support the achievement of targets

For most firms, particularly those outside the manufacturing and power sectors, the overwhelming majority of their transition risk reflects emissions in their value chain (Scope 3). Guidance for component 1 (pg 22) highlighted that a comprehensive transition plan should address these emissions, especially if they fall within the assessment boundary used by third parties to evaluate targets. Guidance for component 2c (Exhibit 10) sets out the need for additional and subsidiary commitments covering specific categories to be benchmarked in some sectors. However Scope 3 emissions are, by definition, outside a company's direct control and in some cases the company has limited ability to influence them. This dependency on third parties to act creates significant execution risk for some companies transition strategies. How can a company be expected to address this risk?

Engagement with these third parties (and more broadly) is the most credible approach in these circumstances, but demonstrating engagement is not straightforward. Input (meaningful dialogue) is hard to measure and outputs (successes/failures) are hard to attribute. For investors seeking to identify the credibility of companies' approach some good work has been done here already. The CA100+ benchmark indicators 7 and 9 codify requests from investors in the areas of Policy Lobbying and Just Transition respectively. GFANZ's forthcoming publication on real-economy transition plans devotes one (of five) themes to "engagement strategy" and sub-segments it into 1) value chain (customers and suppliers) 2) industry peers and 3) government and public sector [4]. The ACT Generic Framework divides engagement into suppliers (upstream), customers (downstream) and policy [26].

This guidance segments engagement into four sub-components (see Exhibit 18) drawing heavily from these frameworks. Supplier and customer metrics are amalgamated into a value chain sub-component, with just transition (engagement with communities and employees) considered within an engagement context and a specific sub-component focussing on financing added.

Sub component 3a: Value chain engagement

It is increasingly recognised that the speed and scale of change required requires whole value chains to transform: suppliers need to identify low-carbon products and customers need to send strong demand signals to provide the stimulus for change. This shift needs to be underpinned by advances in technology, adequate financing, supportive national and international policy and (in some cases) changes in consumer behaviour. Employees and communities that may be adversely affected must be considered to ensure a just transition.

IIGCC's Global Sector Strategies papers on power [35] and steel [36] sought to identify potential interventions across the value chain that would accelerate the decarbonisation of these sectors. The Steel paper highlighted that cost effective and rapid decarbonisation requires action on numerous levers simultaneously. Understanding the interdependencies of the different parts of the supply chain and how the optimal mix of levers varies between regions and sectors is critical. Similar work has been undertaken by MPP in the Steel and Aviation sectors that highlight the need for financing. Recognising that companies have limited ability to influence some parts of their value chain directly, credible, genuine commitments effectively require companies to engage with a range of stakeholders to address decarbonisation barriers.

Exhibit 17: Examples of demonstrable external value chain and policy commitments in the Power and Steel sectors

	Power companies could:	Steel companies could:
Value Chain	• Commit to procuring materials (steel/ concrete) from low-carbon sources and suppliers with accredited 1.5°C transition plans • Joint-fund R&D projects to accelerate the removal of key technological barriers • Establish partnerships and collaborations with players in hard-to-decarbonise industrial, transport and buildings sectors to accelerate their electrification	• Commit to procuring materials (iron ore and met coal) from low-carbon sources and suppliers with accredited 1.5°C transition plans • Convene cross-sector working groups in coordination with major customers and other value chain participants to accelerate material efficiency across the value chain • Engage with customers and recycling processors to establish and support initiatives aiming to increase scrap availability • Work directly with energy and infrastructure providers to secure low carbon power • Joint-fund R&D projects to accelerate the removal of key technological barriers
Policy	• Working via the appropriate national and regional industry bodies, publicly identify policy barriers to accelerate the transition • Ensure its lobbying position and that of trade organisations of which it is a member are aligned to this position	• Working through the appropriate industry body specify the national or regional policy barriers to accelerating transition of the sector. These could include (but should not be limited to): downstream policies designed to encourage material efficiency and enhance scrap availability, carbon taxation including border adjustments and government procurement policy • Ensure its lobbying position and that of trade organisations of which it is a member are aligned to these position

Companies can work with their value chains directly. However, for change of this scale and this complexity, at speed, it may be necessary to establish new groups to accelerate action.

This guidance aims to go further than other frameworks by identifying aspects of value chain engagement that are quantifiable. After use of sold products (category 11), purchased goods (category 1) is the most significant Scope 3 emissions category (see Exhibit 15). Accounting for 8% of total Scope 3 emissions on average, purchased goods in most sectors typically account for more than Scope 1 and 2. Therefore, through their procurement processes companies have the ability to reduce the embedded emissions intensity of the products suppliers sell. Disclosure that sets out the proportion of suppliers with verified decarbonisation commitments and the share of spend they represent can help investors track progress. Some companies are already applying a variation of this approach: Orsted [47] or Apple [48] have sets targets to address all value chain emissions.

In some cases, it should ultimately be possible to test the alignment of procurement strategies. Supply chain data is improving and specific materials like steel, concrete or aluminium for example have established emission benchmarks. Disclosing the current average carbon intensity of the purchased products, broken down by materials and coupled with targets, will enable this spending to be assessed against those benchmarks. Automotive companies such as BMW [49] and Stellantis [50] are already making such commitments.

But engagement should not just focus on upstream emissions. As previously highlighted the downstream value chain can pose significant transition risk and, while arguably companies have less influence on the behaviour of their customers (emissions categories 9-13), verified commitment disclosure (similar to the supplier metrics above) can both help investors track risks and engagement progress. Rio Tinto already collects data on customers in this way and sets targets to grow the number of customers with those commitments.

Specific activities could also be assessed. As already highlighted, work on the mining standard is currently evaluating the potential to assess commitments to reduce shipping emissions (a component of category 4 and 9 emissions in this sector). Benchmarking will enable investors to recognise leading commitments and help accelerate decarbonisation in this slow-moving sector.

Sub component 3b: Climate policy engagement

This guidance draws heavily on CA100+ Company Benchmark indicator 7 and the recently published Global Standard on Responsible Corporate Climate Lobbying [51]. It asks companies to publicly commit to align both direct and indirect (i.e. via trade body membership) lobbying, consistency in coverage (all subsidiaries and geographies), and application. In addition it asks companies to establish annual monitoring review/action process and review (and report on) the impact of lobbying on overall 1.5°C ambition (good, bad and no impact).

Sub component 3c: Financing and investment

Special attention needs to focus on companies financing partners and activities. The role of banks is essential to ensuring that capital allocation is aligned with a 1.5°C pathway. Recent work has identified that while the majority have pledged to align parts of their activities, in almost all cases action currently falls substantially short of what is needed [48]. Collective and individual company engagement with their finance providers could significantly accelerate the transition. In time attention is also likely to focus on category 15 (investment) disclosure. As methods to assess investment portfolios improve, companies should ensure that where their cash is invested is also consistent with decarbonisation [52].

Sub component 3d: Just transition

Finally, companies should also demonstrate they are engaging to deliver a just transition. In many cases there are legal and contractual obligations owed by companies to their employees, local communities and supply chain. Aside from this, evidence suggests that failure to adequately take into account these issues, either in transitioning out of fossil fuels or transitioning into low carbon production and materials, significantly undermines support for the transition and ultimately delays progress [53]. The CA100+ Company benchmark indicator 9 asks companies to acknowledge and commit to adhering to just transition principles. It further asks companies to publish board-level reports outlining their strategy to deal with the expected impact of its transition plan on affordability, jobs (creation and losses), wages and related benefits, training, and communities [3].

Exhibit 18: Component 3 - demonstrable engagement commitments to accelerating the transition*

Sub-Component	Considerations for preparer		Considerations for user/assessor		Equivalent in other frameworks*								
			Disclosure test	Alignment test	NZIF	CA100+ CB	CDP	EFRAG	TPI	SBTi	ACT	IFRS	GRI
a) Is value chain engagement consistent with a 1.5°C ambition?	• Is the strategy for engaging suppliers clearly set out and include current emission intensity and targets for benchmarkable activities where relevant and feasible • Is the % of suppliers and procurement spending aligned to 1.5°C, a target to increase and strategy to deliver disclosed • Is the % of customers and revenue committed to 1.5°C, target to increase and strategy to deliver disclosed		• Supplier strategy could be tested with a binary indicator contingent on disclosing both a coherent strategy AND overall supplier level/ procurement spend alignment. • An additional metric could be used to test the presence of relevant procurement emission targets • Customer strategy could be tested using a binary indicator contingent on disclosing both a coherent strategy AND revenue/procurement alignment	• Alignment tests for most Scope 3 emissions categories are not currently available. However the average current and target intensity of some materials and transport emissions may be possible in time			C12				GE6.1/2/7.1/2		
b) Is climate policy engagement consistent with a 1.5°C ambition?	• Has the company publicly committed to 1.5°C aligned lobbying both direct and indirect (ie via trade body memberships) consistently across all geographies and activities • Has it established annual monitoring review/action process and show actions are consistent with that • Does it review (and report on) the impact of lobbying on overall 1.5°C ambition (good, bad and no impact)		• Policy engagement could be assessed using three separate binary metrics that evaluate the commitment, disclosure and action.	• None	7	7	C12.3		MQ Q13		GE8.1-4		
c) Are financing partners and investment strategy consistent with 1.5°C?	• Does the company disclose if financing partners have public commitments to 1.5°C and (where available) their score on the IIGCC/TPI banking framework [54] • Does the company disclose (when a credible methodology is established) the alignment of investments (both long term and short-term deposits)		• A binary indicator tests disclosure of financing partners climate commitments and banking scores • A binary indicator testing the disclosure of an alignment assessment on the company's investments	• Credible alignment tests for asset portfolios are not currently available but are likely in time									
d) Has the company committed to a Just Transition and is it taking action to deliver it?	• Does the company have a public commitment to adhere to Just transition principles • Does it publish a board level report that both sets out the expected impact of the transition on employee's communities and suppliers and how the company intends to mitigate any negative impacts • Does it demonstrate it is taking the required action		• Just transition could be assessed using three separate binary metrics that evaluate the commitment, evidence of engagement and evidence of action.	• None	9	9							

Full coverage
Partial coverage

4 The contribution to "climate solutions"

The net zero transition will require substantial investment in activities that enable the decarbonisation of the economy. Measuring and reducing financed emissions of a portfolio may indirectly lead to investment in solutions as companies seek to replace emitting technologies, but not at the pace and scale required by the net zero transition. IIGCC's Climate Investment Roadmap suggests the transition is likely to require nearly $130 trillion in investment from now to 2050 in activities that support emissions reductions, with annual investments in clean energy needing to triple from 2020 levels to 2030 [55]. Investors committed to the Paris Aligned Asset Owners initiative in particular are leading the way by setting targets specifically on increasing the proportion of AUM invested in climate solutions by 2030 [56].

The current energy crisis highlights the crucial importance of considering the energy market as a system. Rapid change in one part, be that long term reductions in fossil fuel use or cuts in Russian gas supply, cannot happen without impacting another. In a market where overall demand holds steady, lost supply must be made up elsewhere. The conspicuous underinvestment in (cheaper) low-carbon alternative sources has significantly exacerbated the impact of the surge in energy prices [57].

Investors increasingly recognise the value of this system perspective. To accelerate the transition and mitigate the impact of rising fossil fuel energy costs, many are looking to step up investment in "climate solutions": low-carbon technologies, infrastructure or other activities. Typically, offsets (nature-based solutions), which aim to mitigate the impact of fossil fuels on the climate, are also included in this definition. Some investment strategies explicitly focus on solutions as a growth opportunity. The second (of two) NZIF alignment objectives is "increasing investment in the range of climate solutions"; signatories are asked to increase allocations to climate solutions and set targets accordingly.

For these reasons climate solutions disclosure is an increasingly vital component of any transition plan. However, unlike emissions, there is no established economy-wide definition or way of directly measuring the impact. The "avoided emissions" concept tries to capture the impact of a particular solutions activity by looking at the emissions it might have displaced relative to a theoretical baseline. However, the credibility of the concept has been widely questioned [58], [37].

NZIF asks investors to set portfolio targets to increase allocation to climate solutions based on a percentage of revenues or capex from AUM in line with investment trajectories consistent with a net zero pathway. Portfolio Coverage Target Criteria 5 also states that a decarbonisation strategy should contain the "proportions of revenues that are green and where relevant increases in green revenues". This guidance evaluates climate solutions separately and does not suggest they are counted against reported emissions.

Aside from the measurement issues above, investors also recognise that there is no obligation on companies to invest in climate solutions. Not all companies are well positioned to diversify into low-carbon production therefore, this guidance evaluates climate solutions separately within the context of an overall transition plan. This is also consistent with the new decarbonisation and climate solutions metrics being considered as a part of the CA100+ Company Benchmark Version 2.0.

Sub component 4a: Climate solutions definition

The first challenge is defining climate solutions. While the development of regional taxonomies is generally helping, appropriate operational metrics are not available for most economic sectors and as they vary by sector, cannot be easily aggregated. Capex is more easily aggregated but is also hard to segment consistently. Fortunately for key sectors leading the transition like Power, Oil and Gas, Automotive, and Mining, low carbon climate solutions investment can be relatively easily defined. This guidance asks companies to clearly set out the definitions which they are using to enable company disclosures to be tested for consistency against appropriate taxonomies.

Sub component 4b: Investment in solutions

This guidance suggests companies predominantly use operational and financial metrics to communicate their climate solutions strategy. Rather than revenue which, while broadly available, is a more volatile metric which may not directly incentivise solutions investment, it focusses on investments in low-carbon production capacity which can be measured using both capex and capacity. This approach is designed to pick up companies investing in areas which are needed to drive the system level change spoken about above.

Exhibit 20: Component 4 - The contribution to Climate Solutions

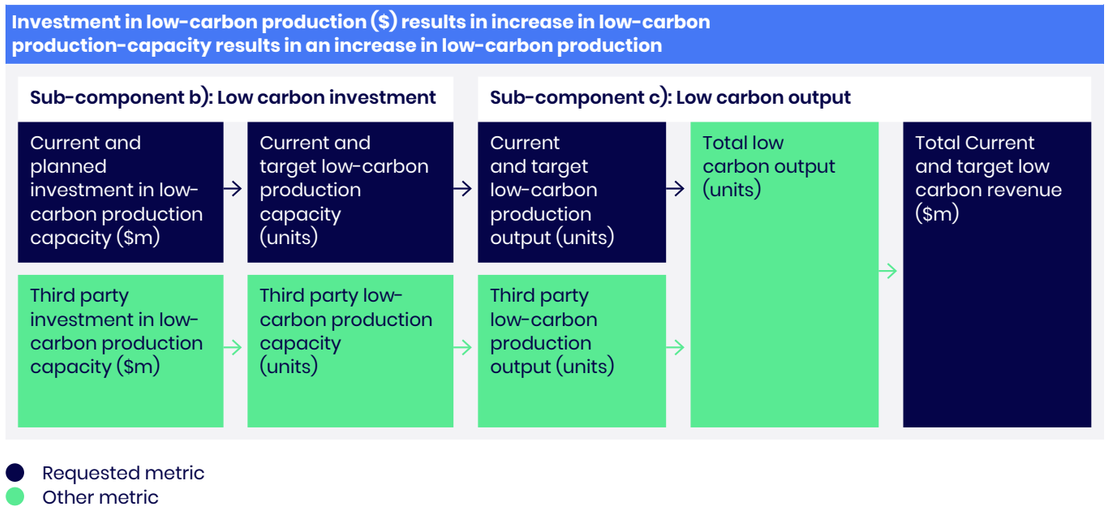
Sub-Component	Considerations for preparer		Considerations for user/assessor: Disclosure test	Considerations for user/assessor: Alignment test	Equivalent in other frameworks*								
					NZIF	CA100+ CB	CDP	EFRAG	TPI	SBTi	ACT	IFRS	GRI
a) Has the company established a definition of low carbon that it is using throughout its reporting and is that definition is consistent with the 1.5°C objective?	• Does the company clearly set out the definition of low-carbon used in its financial reporting and KPIs. Does the definition state emission intensity thresholds and refer to local/regional taxonomies where relevant highlighting any inconsistencies as appropriate		• Presence of a definition can be assessed as a binary indicator	• Disclosed definitions can be compared to the EU taxonomy for alignment (although unabated natural gas should be excluded) and compliance assessed as a binary indicator			C4.5						
b) Is the investment in low carbon production (for sectors where this can be defined readily) disclosed and is it consistent with a 1.5°C scenario?	• Does the company state current and planned future investment in low carbon production • Does the company state current and target low carbon production capacity		• Presence of disclosure should be assessed as two binary indicators	• Growth in low carbon investment can be assessed against the IEA's NZE for a limited number of products • Growth in low carbon production capacity can potentially be assessed against the IEA NZE	T & O	⑥	C4.2a				GE2.3		
c) Is the growth in low-carbon production disclosed and consistent with a 1.5°C scenario?	• Does the company state the current and planned production of low carbon output • Does the company state current and planned low carbon ("green") revenues		• Presence of disclosure can be assessed as two binary indicators	• Low-carbon production growth can be tested against the IEA NZE	T & O	⑤					GE4.3		
d) Is the company investing in nature-based solutions?	• (See 2e) Does the company state its investment in offset projects, type, amount, certification mechanism, storage medium and targets		• Presence of adequate disclosure can be assessed as a binary indicator			⑤		EI-12					

● Full coverage
● Partial coverage

Sub component 4c: Low-carbon production

Additionally, companies could state current investment in low carbon production and set a future budget to show how that level of investment is changing. Critically, the level of growth or resulting capacity can be potentially benchmarked against 1.5°C scenarios such as the IEA NZE in some cases.

Exhibit 19: Climate solutions metrics requested by the guidance



Sub component 4d: Nature-based solutions

This sub-component tests for the same disclosure as provided in the nature-based elements of 2e (investment in offset projects, type, amount, certification mechanism, storage medium and targets). It is included here consistent with the approach adopted by NZIF to separately evaluate climate solutions.

5 Supporting emissions and accounting disclosure

Components 1 – 3 advise out how a company should set out a credible forward-looking plan to navigate the transition to a low carbon economy. Component 4 covered climate solutions, looking at the disclosure companies should provide and how it could be assessed for alignment with 1.5°C scenario. However, investors using NZIF also need basic disclosure about current emissions and energy consumption to benchmark their investments and help understand their current aggregate portfolio transition risk. Investors want to encourage this disclosure from companies of all types and sizes, irrespective of any commitment to reduce emissions.

Sub component 5a: Emissions and energy consumption disclosure

Scope 1 & 2 data is provided by most large companies now. CDP has over 3,319 companies reporting Scope 1 & 2 data in its database (52% of the total). This typically distinguishes between location and market-based reporting for Scope 2 and methane is broken out separately where relevant.

However, the story is very different for Scope 3. Just 46.5% of 6,393 CDP companies fully disclose Scope 3 and the data can be unreliable even when reported. Typically, not all categories are covered and sometimes the data can be a significant underestimate (given the difficulties this data should be independently and externally verified). Improvements in disclosure requirements in the US (SEC is expected to publish guidance in Q1 2023) might narrow this gap but the absence of reliable Scope 3 data across the portfolio is likely to remain a problem for some time. Without it investors cannot confidently measure the current transition risk for most stocks in their portfolios, let alone estimate the aggregate portfolio position or future transition risk.

Offsets and neutralising measures is another area where current disclosure is inconsistent. The distorting impact of RECs on Scope 2 market-based estimates was previously highlighted. Companies should clearly report the use of offsets and technology-based solutions to enable investors to understand trends in both net and gross emissions.

In addition to emissions disclosure, energy consumption disclosure is also useful. For example, pairing fuel and electricity consumption data with Scope 1 and 2 emissions data respectively allows emissions intensity of energy consumed to be calculated, a metric that can be benchmarked against final energy demand in a 1.5°C scenario (see [29]). Most companies disclose overall energy consumption already, but segmenting transport energy consumption could help benchmark the transition to low carbon for businesses with large fleets. For those with a large real-estate footprint, buildings or energy efficiency data might help investors track progress in these challenges areas.

Sub component 5b: Impact of 1.5°C on accounts

Finally, investors are also keen to see how a transition consistent with 1.5°C would impact a company's financial accounts [59]. An accelerated transition could impact the valuation of fossil fuel-related assets on the balance sheet which could have knock on effects on the profit and loss statement. While this rapid transition scenario is arguably not the most realistic today (hence unlikely to be the central assumption used in accounts preparation) quantifying the financial impact is valuable to investors assessing transition risk.

Exhibit 21: Component 5 (supporting emissions and accounting disclosure)

Sub-Component	Considerations for preparer		Considerations for user/assessor: Disclosure test	Considerations for user/assessor: Alignment test	Equivalent in other frameworks*								
					NZIF	CA100+ CB	CDP	EFRAG	TPI	SBTi	ACT	IFRS	GRI
a) Does the company provide the emissions and energy consumption disclosure investors need to assess its transition risks?	• Does the company provide externally and independently verified historic Scope 1 and 2 emissions including Scope 2 by location and market and methane (where relevant) • Does the company provide externally and independently verified Scope 3 emissions by category • Does the company clearly disclose the use of NBS and TBS to enable net and gross emissions to be calculated • Does the company disclose its energy consumption (consistent w/emissions 1 & 2 boundary) and segmented (where relevant)		• Can be tested as four binary indicators covering Scope 1 and 2, Scope 3, net and gross emissions and energy consumption data	• None	4		C6.1/2/3/5, C8.2	E1-5/7/8/9/12	MQ Q5/8/9/12			Para 21a	305-1-3, 3021-2
b) Does the company show the impact of 1.5°C scenario on its accounts?	• Is the impact of a 1.5°C on the balance sheet clearly shown • Is the scenario used and underlying assumptions stated.		• Can be tested as two binary indicators, one on the disclosure of the impact and another on the assumptions	• None		10	C3.5/2	E1-16/7	MQ Q17		GE5.5	Para 14	

Full coverage
Partial coverage

References

[1] PAII, ""Net Zero Investment Framework Implementation Guide"," March 2021. [Online]. Available: https://www.parisalignedinvestment.org/media/2021/03/PAII-Net-Zero-Investment-Framework_Implementation-Guide.pdf. [Accessed 23 August 2022].

[2] CA100+, "Climate Action 100+ Net Zero Company Benchmark v1.1," 1 march 2022. [Online]. Available: https://www.climateaction100.org/wp-content/uploads/2021/10/Climate-Action-100-v1.1-Benchmark-Indicators-Oct21.pdf. [Accessed 25 August 2022].

[3] CA100+, "Climate Action 100+ Net Zero Company Benchmark v1.1," 1 march 2022. [Online]. Available: https://www.climateaction100.org/wp-content/uploads/2021/10/Climate-Action-100-v1.1-Benchmark-Indicators-Oct21.pdf. [Accessed 25 August 2022].

[4] GFANZ, "Introductory Note on Expectations for Real-economy Transition Plans," 2022. [Online]. Available: https://assets.bbhub.io/company/sites/63/2022/06/GFANZ_Introductory-Note-on-Expectations-for-Real-economy-Transition-Plans_June2022.pdf. [Accessed 31 August 2022].

[5] IIGCC, "Working towards a climate resilience investment framework: a discussion paper by IIGCC," September 2022. [Online]. Available: https://www.iigcc.org/download/working-towards-a-climate-resilience-investment-framework-2/?wpdmdl=6394&refresh=63258330255fb1663402800. [Accessed 15 September 2022].

[6] EFRAG , "ESRS E1: Climate change. Exposure draft," April 2022. [Online]. Available: https://www.efrag.org/Assets/Download?assetUrl=%2Fsites%2Fwebpublishing%2FSiteAssets%2FED_ESRS_E1.pdf. [Accessed 12 September 2022].

[7] UKTPT, "A Sector-Neutral Framework for private sector transition plans. Call for evidence," May 2022. [Online]. Available: https://transitiontaskforce.net/wp-content/uploads/2022/05/TPT_Call_for_Evidence.pdf. [Accessed 9 October 2022].

[8] PAII, "Paris Aligned Investment Initiative," 2019. [Online]. Available: https://www.parisalignedinvestment.org/. [Accessed 25 August 2022].

[9] IIGCC, "Net Zero Stewardship Toolkit," April 2022. [Online]. Available: https://www.iigcc.org/download/iigcc-net-zero-stewardship-toolkit/?wpdmdl=5708&refresh=63248c930f3601663339667. [Accessed 12 September 2022].

[10] IIGCC, "Understanding physical climate risks and opportunities," may 2020. [Online]. Available: https://www.iigcc.org/resource/understanding-physical-climate-risks-and-opportunities-a-guide-for-investors/. [Accessed September 2022].

[11] CIFF (Children's Investment Fund Foundation), "Essential components of a corporate climate action plan," July 2021. [Online]. Available: https://sayonclimate.org/climate-action-plans/. [Accessed 12 September 2022].

[12] United Nations' High Level Expert Group on the Net Zero Emissions Commitments of Non State Entities, "Integrity Matters: Net Zero COmmitments by Businesses, Financial Institutions, Cities and Regions," November 2022. [Online]. Available: https://www.un.org/en/climatechange/high-level-expert-group. [Accessed 13 December 2022].

[13] ACT (Assessing low-Carbon Transition), "Sector methodology: Generic (Version 1.1)," April 2021. [Online]. Available: https://actinitiative.org/wp-content/uploads/pdf/act-generic-methodology.pdf. [Accessed 12 September 2022].

[14] CDP , "Climate transition plan: discussion paper," 12 November 2021. [Online]. Available: https://cdn.cdp.net/cdp-production/cms/guidance_docs/pdfs/000/002/840/original/Climate-Transition-Plans.pdf?1636038499. [Accessed 9 October 2022].

[15] TPI (Transition Pathway Initiative), "TPI's methodology report: Management Quality and Carbon Performance (Version 4.0)," November 2021. [Online]. Available: https://www.transitionpathwayinitiative.org/publications/90.pdf?type=Publication. [Accessed 12 September 2022].

[16] SBTi, "Corporate Net Zero Standard. Version 1.0 October 2021," 2021.

[17] CBI (Climate Bonds Initiative), "Transition finance for transforming companies: Tools to assess companies' transitions and their SLBs," 6 September 2022. [Online]. Available: https://www.climatebonds.net/files/files/Transition-Finance-for-Transforming-Companies-6092022%281%29.pdf. [Accessed 13 December 2022].

[18] TCFD (Taskforce on Climate-related Financial Disclosure), "Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures," June 2017. [Online]. Available: https://assets.bbhub.io/company/sites/60/2021/10/FINAL-2017-TCFD-Report.pdf. [Accessed January 2023].

[19] TCFD (Task Force on Climate-related Financial Disclosures), "Guidance on Metrics, Targets and Transition Plans," October 2021. [Online]. Available: https://assets.bbhub.io/company/sites/60/2021/07/2021-Metrics_Targets_Guidance-1.pdf. [Accessed 12 September 2022].

[20] TPT (Transition Plan Taskforce). "Consultation: The transition plan Taskforce Disclosure Framework," November 2022. [Online]. Available: https://transitiontaskforce.net/wp-content/uploads/2022/11/TPT-Disclosure-Framework.pdf. [Accessed 13 December 2022].

[21] IFRS, "Climate Related Disclosures: Exposure Draft," April 2022. [Online]. Available: https://www.ifrs.org/content/dam/ifrs/project/climate-related-disclosures/issb-exposure-draft-2022-2-climate-related-disclosures.pdf. [Accessed 18 September 2022].

[22] IIGCC, "Net Zero Standard for Oil and Gas," 2021. [Online]. Available: https://www.iigcc.org/resource/net-zero-standard-for-oil-and-gas-companies/. [Accessed 23 august 2022].

[23] TCFD, ""Recommendations of the Task Force on Climate-related Financial Disclosures"," undated June 2017. [Online]. Available: https://assets.bbhub.io/company/sites/60/2020/10/FINAL-2017-TCFD-Report-11052018.pdf. [Accessed 23 August 2022].

[24] IIGCC, "Net Zero Investment Framework (NZIF). Implementation Guide," 2021.

[25] CDP, "CDP Climate Change 2022 Questionnaire," 2022. [Online]. Available: https://guidance.cdp.net/en/guidance?cid=30&ctype=theme&idtype=ThemeID&incchild=1&microsite=0&otype=Questionnaire&tags=TAG-646%2CTAG-605%2CTAG-599%2CTAG-600. [Accessed 17 September 2022].

[26] ACT, "Assessing Low Carbon Transition Generic," 2021 April. [Online]. Available: https://actinitiative.org/wp-content/uploads/pdf/act-generic-methodology.pdf. [Accessed 23 August 2022].

[27] GRI , "Consolidated Set of GRI Standards," 30 June 2022. [Online]. Available: https://www.globalreporting.org/how-to-use-the-gri-standards/gri-standards-english-language/. [Accessed 17 September 2022].

[28] IPCC (Intergovernmental Panel on Climate Change), "Climate Change 2022. Mitigation of Climate Change Working Group III Contribution to the Sixth Assessment Report. Summary for Policymakers," May 2022. [Online]. Available: https://www.ipcc.ch/report/ar6/wg3/downloads/report/IPCC_AR6_WGIII_SPM.pdf. [Accessed 12 September 2022].

[29] IEA, "Net Zero by 2050 A Roadmap for the Global Energy Sector," October 2021. [Online]. Available: https://iea.blob.core.windows.net/assets/deebef5d-0c34-4539-9d0c-10b13d840027/NetZeroby2050-ARoadmapfortheGlobalEnergySector_CORR.pdf. [Accessed 31 August 2022].

[30] UNEPFI, "UN-Convened Net Zero Asset Owner Alliance Governance," 31 March 2022. [Online]. Available: https://www.unepfi.org/wordpress/wp-content/uploads/2022/07/NZAOA-Governance-Document_Approved-2022-2.pd. [Accessed 31 August 2022].

[31] IPCC, "Global Warming of 1.5°C An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change," Cambridge University Press, Cambridge, 2018.

[32] IPCC, "Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change," Cambridge University Press. , Cambridge, 2022.

[33] PAT, "Measuring Portfolio Alignment: Technical Considerations," undated. [Online]. Available: https://www.tcfdhub.org/wp-content/uploads/2021/10/PAT_Measuring_Portfolio_Alignment_Technical_Considerations.pdf. [Accessed 23 August 2022].

[34] TPI (Transition Pathway Initiative), "TPI Sectoral Decarbonisation Pathways," February 2022. [Online]. Available: https://www.transitionpathwayinitiative.org/publications/99.pdf?type=Publication. [Accessed 12 September 2022].

[35] CA100+, "Global Sector Strategies: Investor Interventions to Accelerate Net Zero Electric Utilities," 2021. [Online]. Available: https://www.climateaction100.org/approach/global-sector-strategies/electric-utilities/. [Accessed 23 august 2022].

[36] CA100+, "Global Sector Strategies: Investor Interventions to Accelerate Net Zero Steel," 2021. [Online]. Available: https://www.climateaction100.org/approach/global-sector-strategies/steel/. [Accessed 23 August 2022].

[37] WRI, "GHG Protocol Scope 2 Guidance executive Summary," undated. [Online]. Available: https://ghgprotocol.org/sites/default/files/Scope2_ExecSum_Final.pdf. [Accessed 31 august 2022].

[38] EDF, "Transferred Emissions: How Risks in Oil and Gas M&A Could Hamper the Energy Transition," undated. [Online]. Available: https://business.edf.org/files/Transferred-Emissions-How-Oil-Gas-MA-Hamper-Energy-Transition.pdf. [Accessed 31 August 2022].

[39] Rio Tinto, "Rio Tinto to strengthen performance, decarbonise and grow," 20 October 2021. [Online]. Available: https://www.riotinto.com/news/releases/2021/Rio-Tinto-to-strengthen-performance-decarbonise-and-grow. [Accessed 12 September 2022].

[40] BHP, "Operational (Scope 1 and 2) decarbonisation," October 2021. [Online]. Available: https://www.bhp.com/sustainability/climate-change/reducing-our-operational-emissions. [Accessed 12 September 2022].

[41] University of Oxford, "Oxford Offsetting Principles," 2020.

[42] SBTi, "Foundations for science-based net-zero target setting in the corporate sector. Version 1.0," 2020.

[43] VCMI, "Accelerating credible net-zero climate action. Aligning Voluntary Carbon Markets with the 1.5°C Paris Agreement Ambition. A Global Consultation Report of the Voluntary Carbon Markets Integrity Initiative (VCMI)," 2021.

[44] UNEP, "UNEP, Carbon offsets are not our get-out-of-jail free card," 2019.

[45] VCMI (Voluntary Carbon Markets Integrity Initiative), "Provisional Claims Code of Practice," 7 June 2022. [Online]. Available: https://vcmintegrity.org/wp-content/uploads/2022/06/VCMI-Provisional-Claims-Code-of-Practice.pdf. [Accessed 15 September 2022].

[46] ICVCM (Integrity Council for Voluntary Carbon Markets), "Core carbon principles (IPLC public consultation workshop)," 13 September 2022. [Online]. Available: https://icvcm.org/wp-content/uploads/2022/09/IPLC-workshop-deck-English.pdf. [Accessed 15 September 2022].

[47] Orsted, "Ørsted extends its 100% renewable electricity target to all suppliers," 10 08 2022. [Online]. Available: https://orsted.com/en/media/newsroom/news/2022/08/13656483. [Accessed 31 08 2022].

[48] Apple, "Apple commits to be 100 percent carbon neutral for its supply chain and products by 2030," 21 July 2020. [Online]. Available: https://www.apple.com/uk/newsroom/2020/07/apple-commits-to-be-100-percent-carbon-neutral-for-its-supply-chain-and-products-by-2030/. [Accessed 31 August 2022].

[49] BMW , "Sustainability Focused: how BMW protects our environment," 23 November 2021. [Online]. Available: https://www.bmw.com/en/magazine/sustainability/how-bmw-protects-our-environment.html. [Accessed 1 September 2022].

[50] Stellantis, "Dare Forward 2030," 1 March 2022. [Online]. Available: https://www.stellantis.com/en/investors/events/strategic-plan. [Accessed 07 September 2022].

[51] RCLS, "Global Standard on Responsible Corporate Climate Lobbying," 2022. [Online]. Available: https://climate-lobbying.com/wp-content/uploads/2022/03/2022_global-standard-responsible-climate-lobbying_APPENDIX.pdf. [Accessed 31 August 2022].

[52] The Carbon Bankroll, "The Carbon Bankroll: The Climate Impact and Untapped Power of Corporate Cash," 2022. [Online]. Available: https://static1.squarespace.com/static/6281708e8ff18c23842b1d0b/t/6283204b3556a5125ce13b37/1652760661661/The+Carbon+Bankroll+Report+%285-17-2022%29.pdf. [Accessed 31 august 2022].

[53] WBA, "Just Transition Assessment 2021," 1 Novermber 2021. [Online]. Available: https://assets.worldbenchmarkingalliance.org/app/uploads/2021/11/2021_JustTransitionAssessment.pdf. [Accessed 1 September 2022].

[54] TPI (Transition Pathway Initiative), "An investor-led framework of pilot indicators to assess banks on the transition to net zero," July 2022. [Online]. Available: https://www.iigcc.org/media/2022/07/An-investor-led-framework-of-pilot-indicators-to-assess-banks-on-the-transition-to-net-zero-28-July.pdf. [Accessed 12 September 2022].

[55] IIGCC, "Climate Investment Roadmap," April 2022. [Online]. Available: https://www.iigcc.org/media/2022/04/JC0426_IIGCC_Climate-Transition-Report_FINAL.pdf. [Accessed 12 September 2022].

[56] Paris Aligned Asset Owners, "Initial Target disclosures," 2022. [Online]. Available: https://www.parisalignedinvestment.org/media/2022/07/PAAO-Disclosures-010722.pdf. [Accessed 12 September 2022].

[57] IEA, "Record clean energy spending is set to help global energy investment grow by 8% in 2022," 22 June 2022. [Online]. Available: https://www.iea.org/news/record-clean-energy-spending-is-set-to-help-global-energy-investment-grow-by-8-in-2022. [Accessed 1 september 2022].

[58] R. Calel, J. Colmer and A. G. M. Dechezleprêtre, "Do Carbon Offsets Offset Carbon?," CESifo Working Paper No. 9368, October 2021.

[59] Carbon Tracker Initiative, "Flying blind: The glaring absence of climate risks in financial reporting," 16 September 2021. [Online]. Available: https://carbontracker.org/reports/flying-blind-the-glaring-absence-of-climate-risks-in-financial-reporting/. [Accessed 24 January 2023].

[61] SBTI, "SBTI Corporate Net-Zero Standard," undated October 2020. [Online]. Available: https://sciencebasedtargets.org/resources/files/Net-Zero-Standard.pdf. [Accessed 23 August 2022].

[62] Carbone4, "Decoding ADEME's opinion on carbon neutrality," 12 July 2021. [Online]. Available: https://www.carbone4.com/en/decoding-ademe-carbon-neutrality.

[63] CA100+, "Net Zero Standard for Diversified Mining: Roundtable II," 2022. [Online]. Available: https://iigcc.sharepoint.com/Shared%20Documents/Working%20Groups/2.%20Corporate%20Programme/5.%20Transition%20planning%20(DG)/Sectors/Mining/Standard%20Roundtable%20II/CA100+Diversified%20Miner%20Roundtable%20II%20Slides%20-%20Final.pptx?web=1.. [Accessed 23 August 2022].

[64] Ceres, "Ceres-IIGCC's Brief for Investors on the Role of Natural Climate Solutions (NCS) in Corporate Climate Commitments," 2021.

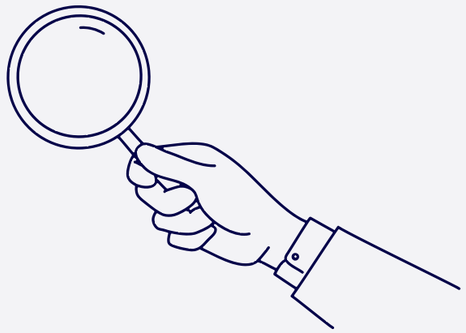
[65] IIGCC-Vivid Economics Offsetting study (TO UPDATE SOURCE), [Online].

[66] TPI, "TPI BLOG - CHANGE NAME WHEN PUBLISHED," [Online].

[67] CDP, "Are Companies Being Transparent in their Transition? 2021 Climate Transition Plan Disclosure," March 2022. [Online]. Available: https://cdn.cdp.net/cdp-production/cms/reports/documents/000/006/127/original/2021_Climate_transition_plan_disclosure_FINAL.pdf?1647432846. [Accessed 31 August 2022].

[68] TPI, "An investor-led framework of pilot indicators to assess banks on the transition to net zero," 2022. [Online]. Available: https://www.iigcc.org/media/2022/07/An-investor-led-framework-of-pilot-indicators-to-assess-banks-on-the-transition-to-net-zero-28-July.pdf. [Accessed 31 August 2022].

[69] IIGCC, "NZIF: IIGCC's Supplementary Guidance on Target Setting," December 2021. [Online]. Available: https://www.iigcc.org/download/net-zero-investment-framework-iigcc-supplementary-target-setting-guidance/?wpdmdl=5224&refresh=632021b50f77b1663050165. [Accessed 15 September 2022].



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