



UN-convened Net-Zero
Asset Owner Alliance

Target- Setting Protocol

Fourth edition

Background
document

April 2024

The Net-Zero Asset Owner Alliance receives ongoing legal advice with regard to antitrust compliance—as such, this publication has undergone a legal review.

Disclaimer

The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Mention of a commercial company or product in this document does not imply endorsement by the United Nations Environment Programme or the authors. The use of information from this document for publicity or advertising is not permitted. Trademark names and symbols are used in an editorial fashion with no intention on infringement of trademark or copyright laws.

The views expressed in this publication are those of the authors and do not necessarily reflect the views of the United Nations Environment Programme. We regret any errors or omissions that may have been unwittingly made.

© Maps, photos and illustrations as specified

Suggested citation: United Nations Environment Programme (2024): UN-convened Net-Zero Asset Owner Alliance: Target-Setting Protocol—Fourth edition

Production: UN Environment Programme Finance Initiative

Acknowledgments

This Target-Setting Protocol was written by the members of the UN-convened Net-Zero Asset Owner Alliance. Contributing members include:

Marise Kok (Aegon), Robin Honeyman (Aegon), Carmel Lev (Aegon), Timothy Gnewuch (Aegon), Helene Drouet (Aema Groupe), Damien Didier (Aema Groupe), Jean Francois Coppenolle (Aema Groupe), Laurien De Bondt (AG insurance), Nathan Rousseaux (AG insurance), Patrick Peura (Allianz), Leyla Javadova (Allianz), Elke Pfeiffer (Allianz), Thomas Liesch (Allianz), Udo Riese (Allianz), Benjamin Langer (Allianz), Michael Heilmann (Allianz), Aoife Finn (Aviva), Scott Elkin (Aviva), Loubna Benkirane (Aviva), Darren Roberts (Aviva), Burak Cakirlar (Aviva), Elizabeth Ortiz (Aviva), Henrietta Stock (Aviva), Sara Brown (Aviva), Agneta Bamanian (Aviva), Thomas Dillon (Aviva), Monica Filkova (Aviva), Bianca Hanscombe (Aviva), Penny Apostolaki (Aviva), Valentin Briesach (AXA), Justin Travalos (AXA), Anne De Clermont (AXA), Erick Decker (AXA), Thomas van Rompaey (AXA), Daniel Bezrodnych (AXA), Juliette Lefebure (AXA), Philippine Lejolly (AXA), Henri de mont-serrat (AXA), Gabriel Mattout (AXA), Benjamin Lecourt (AXA), Martin Guibert (BNP Paribas), Virginie Mathieu (BNP Paribas), Martin Taillandier (BPCE Assurances), Soukaina Despierres (CDC), Anne Faivre (CDC), Laureen Tessier Haygarth (CDC), Sophie Constans (CDC), Rachel Horwat (CDPQ), Vito Dellerba (CDPQ), Bertrand Absolut (CDPQ), Sofia Bartholdy (Church Commissioners for England), Olga Hancock (Church Commissioners for England), Vincent Damas (CNP), Abou Ali Magued (CNP), Elisabeth Michaux (CNP), Paul Laguitton (CNP), Quinn Liu (DanicaPension), Nina Ellen Marie Mattsson (DanicaPension), Tamara Larsen (David Rockefeller Fund), Jacopo Cardinali (Generali), Elisa Vergine (Generali), Andrea Mosca (Generali), Arianna Pierantoni (Generali), Jose Martinez (Gothaer), Quentin Braida (Groupama), Marianne Sliman (Groupama), Querit Tovar (Groupama), Andrea Negri (Intesa Sanpaolo Vita S.p.A.), Moreno Capretti (Intesa Sanpaolo Vita S.p.A.), Laretta Filangieri (Intesa Sanpaolo Vita S.p.A.), Antonella Navarra (Intesa Sanpaolo Vita S.p.A.), Francesco Di Muro (Intesa Sanpaolo Vita S.p.A.), Claudia Musilli (Intesa Sanpaolo Vita S.p.A.), Cristiano Rinaldi (Intesa Sanpaolo Vita S.p.A.), Anil Gürtürk (KENFO), Daniel Beswick (Legal & General), Adrian Chapman (Legal & General), Hannah Hartley (Legal & General), Malcolm Hanna (Legal & General), Matyas Horak (Legal & General), Michael Hegener (MunichRe), Martina Engelmann (MunichRe), Carolin Lölkes (MunichRe), Maya Lang (MunichRe), Viktor Keller (MunichRe), Hitoshi Matsushita (Nippon Life Insurance Company), Alexander Berg (Nordea Life & Pension), Håkon Rykkje (Nordea Life & Pension), Cecilie Theresa Wendt (P+), Anton Kyvsgaard (PFA Pension), Hannah Perregaard (PFA Pension), Matthias Majaliwa Pedersen (PFA Pension), Simon Stig-Gyilling (PFA Pension), Liza Jansen (Prudential), Jonathan Lin (Prudential), Enci Wang (Prudential), Ashmeet Siali (PRI), Rosie Farr (PRI), Bri Simula (QBE), Fredy Beranl (QBE), James Pearson (QBE), Jwalant Patel (QBE),

Sumana Hannan (QBE), Gerald Krückl (R+V), Gunther Wicht (R+V), Joachim Paulusch (R+V), Kathrin Stuckart (R+V), Judith Powell (R+V), Uwe Siegmund (R+V), Marcel Ullrich (R+V), Jenny Murray (Rothesay), Andy McClaren (Rothesay), Mark Arrowsmith (Rothesay), Ben Keeling (Rothesay), David Land (Rothesay), Alix Chabaud (SCOR), Gulnaz MAGAZOVA (SCOR), Junichi Tanaka (Sumitomo Life Insurance Company), Claudia Bolli (Swiss Re), Silvana Guedel (Swiss Re), Ben Weidmann (Swiss Re), Simon Oberholzer (Swiss Re), Yann Kerbrat (Swiss Re), Dario Bryner (Swiss Re), Sam Tuma (Swiss Re), Kathleen Simpson (The Russell Family Foundation), Dariush Karimi (Unipol), Marjorie Breyton (Unipol), Jessica Andrews (UNEP FI), Carolin Gresch (UNEP FI), Claudia Florowski (UNEP FI), Anna Irmisch (UNEP FI), Shahin Kazemzadeh (UNEP FI), Mel Peh (UNEP FI), Eliya Devay (UNEP FI), Remco Fischer (UNEP FI), Oliver Wagg (UNEP FI), Teodora Cakarmis (UNEP FI), Imanol Cazalis (UNIQA), Max Steinberg (UNIQA), Danika O'Neal (UNIQA), Bernadette Blank (UNIQA), Doug Chau (UTAM), Ana Membrado (VidaCaixa), Clotilde Bobineau (VidaCaixa), Andrea Davila (VidaCaixa), Beatrice Stadler (Vita collective Foundation), Jake Barnett (Wespath), Fred Huang (Wespath), Philippe Diaz (WWF), David Knewitz (WWF), Christian Landenberger (WWF), Matthias Kopp (WWF), Michael Valenta (WWF), Leonie Ederlie Fickinger (WWF), Donald Linderyd (WWF), Danielle Brasel (Zurich Insurance Group), Aurelie Pollak (Zurich Insurance Group), Roger Baumann (Zurich Insurance Group), Nicolas Rossetti (Zurich Insurance Group), Matthew Holmes (Zurich Insurance Group).

This Protocol builds on the previous edition of the protocol which can be found [here](#).

Monitoring, Reporting and Verification (MRV) Track

The Monitoring, Reporting and Verification (MRV) Track is responsible for the development of the protocol, which provides the basis for Alliance members to develop, issue and report decarbonisation targets. Members of the MRV track have reviewed large amounts of known, available scientific guidance, commissioned scientific guidance, and available methodologies. This protocol is the result of this process and is published on behalf of the Alliance. It sets out the Alliance's approach to target setting and reporting on progress towards real world emissions reductions in line with established science and members' fiduciary duty.

A range of scientific, academic, and technical experts are engaged in and contribute to the Alliance's work. This Protocol was produced by the technical leads within the Alliance membership with input from global networks, climate scientists, strategic advisors, NGOs, and the public.

The Alliance would also like to express its gratitude to the following members of its advisory bodies:

Strategic advisors

Sue Reid (Global Optimism), Philippe Diaz (WWF), David Knewitz (WWF), Christian Landenberger (WWF), Matthias Kopp (WWF), Michael Valenta (WWF), Leonie Ederlie Fickinger (WWF), Donald Linderyd (WWF)

Scientific Advisory Body

Keywan Riahi (International Institute for Applied Systems Analysis [IIASA]), Bas Ruijven (IIASA), Anders Levermann (Potsdam Institute For Climate Impact Research [PIK]), Kai Lessmann (PIK), Brian O'Hanlon (Rocky Mountain Institute [RMI]), Tamara Grbusic (RMI), Andrea Hinwood (United Nations Environment Programme [UNEP]), Geoffrey Oloo (UNEP), Jian Liu (UNEP), Damien Giurco (University Of Technology, Sydney [UTS]), and Sven Teske (UTS).



Contents

Introduction	1
1. The Alliance’s Theory of Change	2
2. The scientific basis for establishing net-zero targets	9
2.1 Scenario pathways	9
2.2 Real economy progress.....	11
2.3 Just transition	13
3. Background information to engagement targets	16
3.1 Future of investor engagement.....	16
3.2 Comparison of TSP against CA100+ criteria	17
4. Background information to sector targets	19
4.1 Comparison of carbon emission metrics	19
4.3 Financial sector classification.....	27
5. Background information to sub-portfolio targets	33
5.1 Comparison absolute and intensity metrics	33
5.2 Infrastructure.....	36
5.3 Real estate	39
5.3 Sovereign debt.....	45
6. Policy	50
References	53

List of boxes, figures and tables

- B46. Box 1: Resources and Initiatives on Just Transition 13

- B30. Figure I: Modelled mitigation pathways 8
- B32. Figure II: Illustration of scientific and real economy emissions pathway divergence..... 10
- B50. Figure III: CA100+ Criteria 16
- B61. Figure IV: One Earth Climate Model 20
- B64. Figure V: Key Milestones in the pathway to net zero 22
- B78. Figure VI: HoldCo diagram | Source: Net-Zero Asset Owner Alliance Protocol 37
- B83. Figure VII: Comparison of equity share, financial control and operational control approach (PCAF, 2023) 39
- B94. Figure VIII: Building life-cycle stages (PCAF, 2023) 43
- B113. Figure IX: Elements of ASCOR framework structure | Source: ASCOR (2023) 48

- B54. Table I: Comparison of different carbon metrics 18
- B57. Table II: Sector modelling efforts and initiatives applying sector pathway modelling 19
- B67. Table III: Comparison of OECM versus IEA NZ2050 scenario 24
- B70. Table IV: Sector classification 26
- B73. Table V: Comparison absolute metrics and intensity metrics 34
- B74. Table VI: Infrastructure Asset Types in Scope 35
- B86. Table VII: Four different illustrative examples how to account for building-related emissions for different investment types 40
- B88. Table VIII: Target option 1—Carbon intensity 42
- B90. Table IX: Target option 2—Absolute emissions 42
- B101. Table X: Definition of Scope 1, 2 and 3 for Sovereigns 45



Introduction

- B1. The Net-Zero Asset Owner Alliance (the Alliance) is pleased to introduce a practical update to its Target-Setting Protocol (TSP), which has transitioned into a standing document for enhanced efficiency and accessibility. Unlike the previous publication model, which was to publish a revised version annually, these standing documents will undergo regular updates, on an annual basis or less frequently, thus ensuring that the latest information is reflected.
- B2. The revised structure includes two key components:
- Target-Setting Protocol: This document consolidates all pertinent information for Alliance members regarding target setting and reporting requirements (all paragraphs are numbered for reference with T, e.g. *T31*).
 - Background Document: This document serves as a supplementary resource, providing additional insights on content related to target setting, allowing for detailed explanations and discussions not directly reflected in target setting requirements (all paragraphs are numbered for reference with B, e.g. *B2*).

1. The Alliance's Theory of Change

- B3. Climate change is causing growing systemic disruptions to ecosystems, societies, and economies. More and more investors recognise the billowing nature of climate risk, as evidenced by the surge in the number of climate-related pledges and transition plans in the finance industry since 2019. **Asset owners, such as pension funds and insurance companies, invest with long-term time horizons and across a wide range of asset classes, geographies, and economic sectors. As such, they are particularly vulnerable to the risk of climate change—a fact that all members of the Net-Zero Asset Owner Alliance (“the Alliance”) recognise. Through risk recognition, asset owners have also come to appreciate the unique and active role they can play in addressing global warming.**
- B4. Signatories of the Paris Agreement make clear in Article 2.1 that, in order to limit global warming to 1.5°C, it is essential to “make financial flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development”. To achieve this, the right investment incentives are needed to attract a sufficient scale of capital towards a low-carbon economy and to fund decarbonisation of individual companies. **The Alliance believes that for asset owners to influence incentive shifts and contribute to a net-zero transition, three main points of action are necessary—capital allocation strategies, engagement approaches, and field building.** The rest of this chapter will discuss each of these points, their contribution to the Alliance’s theory of change, and how they interact with the Alliance’s Target-Setting Protocol.
- B5. To achieve Paris-aligned reduction of investment portfolio emissions while maximising real-economy outcomes, the Alliance developed its Target-Setting Protocol. The Protocol allows members to employ the combination of approaches that best supports their unique decarbonisation and engagement strategies, and fulfils their fiduciary duty. The combinations revolve around four important levers of influence—portfolio decarbonisation, sector decarbonisation, climate solution investments, and engagement. The protocol’s science-based methodology allows members to set targets best suited to their individual institutions, while also allowing for progress to be measured and aggregated across the Alliance.¹

1 See the Alliance’s progress reports for the latest summary of members’ targets: unepfi.org/net-zero-alliance/resources/

B6. In addition, the Alliance recognises that policy and regulatory action is required to ensure decarbonisation occurs at sufficient pace and thus actively contributes to field building through public discourse. The Alliance has shared its stance on definition and implementation of decarbonisation targets, transparent reporting, and transition plan disclosure.

B7. Moreover, the Alliance believes that for asset owners' decarbonisation strategies to be most successful and effective, they should be applied across the whole investment portfolio; i.e. to both listed and private assets. Thus, to ensure that high-emitting companies develop transition plans regardless of their ownership structure, the Alliance argues for increased focus on private assets and on asset managers investing in them (NZAOA, 2022a).

Capital allocation strategies

B8. Alliance members commit to set individual targets on engagement and at least two of the other three target types. The other target types—portfolio decarbonisation, sector decarbonisation, and climate solution investments—refer to capital allocation strategies. **Defining targets based on capital allocation pushes members to support the transition by laying out plans to invest in ambitious companies/states/climate solution projects, while slowly withdrawing capital from individual companies that are not acting effectively to decarbonise.**

B9. The **climate solutions investment target** measures these “climate-positive” investments or revenue shares of the investment portfolio. The **decarbonisation targets** (sub-portfolio and sector target), on the other hand, focus on reductions in greenhouse gases (GHGs); i.e. reducing the “climate-negative” investment shares.

B10. The capital allocation targets that Alliance members set are usually fully integrated into asset owners' general asset allocation strategies, which can include:

- Strategic asset class allocation: allocation towards asset classes where low-carbon businesses have appropriate risk-return profiles (e.g. renewable power generation in private “alternative investments”), combined with exposure reduction in asset classes that offer insufficient opportunities within the needed risk-return profiles.
- Inter-sector allocation within an asset class: given that some sectors are more carbon intensive than others, investors can optimise long-term capital allocation (with considerations to financing the transition) by increasing holdings in low-carbon sectors while decreasing exposure to high-emitting sectors.
- Intra-sector allocation: this includes overweighting industry leaders in high-emitting sectors (such as steel or cement) that demonstrate superior climate performance (currently and through forward-looking strategies), while underweighting laggards.

- B11. Investors usually combine all approaches to optimise long-term risk-return profile in line with their overall strategy. **While these portfolio decarbonisation approaches do not in and of themselves lead to emissions reduction in the real economy, the two efforts are linked.** To meet long-term obligation of safeguarding investment portfolios, investors will ultimately reallocate capital towards investments with lower carbon intensities in consideration of long-term portfolio risk-return optimisation (and may also invest in high-emitting industries to decarbonise them). In doing so, investors make capital available for the kind of new and promising low-carbon business models that are needed for the transformation of the economy. The scale by which this occurs is largely dependent on the scale and pace of enabling policies and investible technology development.
- B12. To transform the real economy, transitioning the hard-to-abate sectors will be crucial. However, investment in transitioning companies may result in increased portfolio emissions in the short term. This is why the **Alliance’s sector target** establishes sector-specific decarbonisation objectives, which can support sector-specific investment portfolio steering. Via this intra-sector allocation approach, the investor can analyse companies and compare their physical carbon intensity with sector decarbonisation models (for example [IEA Net Zero](#) and [OECM](#)).² This sector-specific analysis can help identify “climate leaders” that align business strategies and activities to science-based decarbonisation pathways. In the context of risk-return optimisation, these leaders will most likely be overweighted compared to their sector peers. Thus, by considering sectoral and country-specific factors, the intra-sector approach can support Alliance members in extending the necessary transition finance to hard-to-abate sectors.
- B13. **Divesting** from high-emitting sectors and investing in low-carbon sectors lowers portfolio-owned emissions but has little effect on real-world decarbonisation. Divestment may have a strong indicative effect to industry and policymakers, especially when coupled with strong public discourse and messaging. Nevertheless, investors give up their voting rights by divesting and thereby lose their influence to support low-carbon strategies at investee companies.
- B14. The Alliance does not consider divestment a separate re-allocation theme. Divestment is an adjustment of the respective investment filter that all investors individually apply; no investor is invested in all companies and may be “divested” from many companies globally. However, divestment might happen when investors divest from companies or sectors due to their specific characteristics (for example if a company’s business model or a whole sector carries significant transition risks). Most importantly, investors will exclude companies from their investment filters in cases where underlying business models do not have a positive financial and economic future in safeguarding the desired portfolio performance. Divestment may also be part of an escalation strategy—a “last resort” when requested changes discussed during engagement have not materialised or when a particular business

² The analysis considers both past decarbonisation trajectory and forward-looking transition planning. The [Transition Pathway Initiative](#) may be one valuable open-source analysis assisting these analyses. In addition to pure KPI driven assessments, individual investees’ decarbonisation strategies, governances, and CAPEX plannings are considered in investment decision-making.

model or associated climate risks are no longer economically viable (e.g. companies misaligned with transition pathways). Although impressive progress has been made in recent years, aligning complex financial portfolios with scientific scenario requirements and assumptions is a highly challenging task. The limited availability of reliable data is a key issue that leads to asymmetrical information and challenges for investment decision-making. The significant increase in climate risk mitigation strategies, regulatory measures, and disclosure requirements are all important and contribute to a better understanding of financial stability.

- B15. On the whole, the likelihood of allocation strategies alone contributing to emissions reductions in the real economy remains uncertain as the empirical evidence is still limited.³ Thus, the Alliance places significant emphasis on engagement in its theory of change, which is further discussed in the next section.

Engagement approaches

- B16. Engagement is one of the most direct mechanisms by which investors can represent their interests and concerns to companies, issuers, policymakers or regulators, and more broadly, the business community. For asset owners specifically, engagement with asset managers is also a critical activity to represent the former's long-term interests to one of their closest stakeholders. The Alliance discusses some of the strengths and weaknesses of each form of engagement (corporate, sectoral, asset manager, and policy) in the paper *The Future of Investor Engagement* (NZAOA 2022b).
- B17. The Alliance's engagement mission is for members' investee companies and asset managers to understand and represent its members' long-term interests of achieving an orderly transition to a net-zero economy. This includes asset managers holding corporate boards accountable for ensuring that management addresses climate risks and opportunities in their day-to-day business. Each Alliance member individually decides—based on their business context and organisational expertise—which forms of engagement are best suited for their respective organisation.
- B18. For investors to successfully address risk and influence change, the first step is differentiating between idiosyncratic risks (for which bilateral engagement has historically been effective) and systemic risks, such as climate change (NZAOA 2023a). Given the systemic nature of climate change, the Alliance's theory of change vis-à-vis engagement topics revolves around supporting the systems change that is needed. The following sections explain how each stream of engagement contributes to the Alliance's theory of change.

³ The Alliance's discussion paper *Understanding the Drivers of Investment Portfolio Decarbonisation* (NZAOA 2023d) sets the foundation for using emissions attribution analysis to discern the main drivers of portfolio decarbonisation.

- B19. **Asset manager engagement:** Because asset managers execute activities on behalf of their asset owner clients,⁴ they are key partners for integrating asset owners' long-term interests in the investment process. Thus, it is critical that asset owners engage their asset managers throughout the selection, appointment, and monitoring (SAM) processes. To support members in their asset manager engagement, the Alliance's Engagement Track develops ready-to-use materials and resources. For example, the track developed Best Practice Guidelines in line with the Alliance members' long-term climate interests (NZAOA 2023a). The Alliance has also published guidance on [climate related proxy voting](#), [policy engagement](#), and [corporate engagement programs](#). Once Alliance members have incorporated their climate targets and stewardship expectations into their SAM processes, the asset managers that follow the Alliance's guidelines will start to win more business. By developing and promoting the use of its resources in this way, the Alliance is supporting a shift towards those asset managers whose activities promote a net-zero transition.
- B20. Other stakeholders (e.g. nongovernmental organisations or academia) are critical to review asset managers' approaches and the extent to which their stewardship policies are congruent with their actions; for example, a climate-aligned proxy-voting policy of an asset manager versus the actual performance on voting. This provides critical research insights for asset owners to then use.
- B21. **Corporate engagement:** Bilateral corporate engagement (possible for shareholders as well as bondholders) is research-, time-, and effort-intensive for both the investee company and the investor. This is why it is often most suitable for idiosyncratic risks at companies with lower volumes of investor inquiries. Given its resource-intensiveness, corporate engagement highlights the importance of developing engagement strategies and voting practices with clear objectives, timelines, and escalation approaches. Engagement that does not lead to desired outcomes is a signal to where efforts need to be allocated next in order to address the systemic hurdles preventing decarbonisation. The Alliance's engagement target asks members to focus on the top portfolio emitters that they can have the most additional impact on and that are critical to the climate transition. Engagement is not the suitable approach if the investee company follows a strategic path that cannot be aligned with the investor's long-term interests. Ultimately, corporate engagement should either lead to desired outcomes or serve to identify the systemic hurdles preventing decarbonisation and indicate where resources should be allocated next (NZAOA 2023b).

4 Freshfields Bruckhaus Deringer (2021). A Legal Framework for Impact. freshfields.com/en-gb/our-thinking/campaigns/a-legal-framework-for-impact/

B22. **Collaborative engagement:** In instances where investee companies are reaching the bounds of what they can achieve based on the current or expected policy and regulatory environment, collaborative engagement within sectors and across value chains can help address some of the hurdles⁵. However, for collaborative engagement to work, companies need to align their own lobbying with their stated climate commitments. The process is also important in that it provides an opportunity for investors to understand the systemic hurdles facing decarbonisation and the types of incentives needed to address these hurdles.

B23. **Policy engagement:** Engagement with companies and sectors relies on promoting voluntary actions that are then rewarded by the market either via cost-cutting, margin-expanding, or revenue-expanding activities. However, there are limits to voluntary actions and economic incentives are necessary to address systemic barriers to decarbonisation. This is why the Alliance's Commitment is based on the expectation that governments will follow through with their own Paris Agreement commitments, and why Alliance members are also encouraged to push governments to do so through policy engagement activities that are aligned with members' net-zero commitments (NZAOA 2023b). In addition, members are encouraged to set an expectation for asset managers to align both their own and investee companies' lobbying activities to their respective climate commitments.

Field building

B24. **Field building** refers to changing the norms and standards in the ecosystem in which asset owners—together with asset managers, investee companies, regulators, and policymakers—are embedded (MacLeod & Park, 2011; Marti et al., 2023). Norms and standards are a precursor to the ambitious climate policies and regulation that are necessary to overcome systemic barriers to decarbonisation. Thus, the Alliance sees that field building contributes in the medium term to a “new normal” for asset owners and other financial institutions, whereby larger financial flows will go towards a sustainable economy and will incrementally increase support to the governmental and societal commitment to fully implement the Paris Agreement.

B25. Asset owners can influence these fields by changing the discourse, delegitimising certain business activities, establishing voluntary standards, and supporting or calling for regulatory and policy changes that may lead to mandatory standards. The very founding of the Alliance and of other financial net-zero alliances has already contributed to changing the ambition levels that are expected. Moreover, the robust target-setting methodology put forward by the Alliance, coupled with the ambitious targets and high-quality content work delivered by its members, has continued to drive field development. In this way, the Alliance's Target-Setting Protocol has changed the baseline ambition level of financial institutions on climate change beyond just the Alliance membership.

5 Collaborative engagement must be undertaken with proper respect for antitrust laws and regulations or applicable regulatory requirements.

B26. Similarly, the expectations towards asset managers increased through the Alliance's key publications on the topic; regulators and policymakers are also more aware of net-zero investor needs thanks to calls to internalise the benefits of decarbonisation through blended finance (NZAOA 2022c) and carbon pricing (NZAOA 2022d). Given that the effectiveness of field building grows as the existing approaches converge over time, the Alliance will continue to work and share expertise with other initiatives and stakeholders.

From theory to implementation

B27. Each Alliance member has its own unique characteristics that must be carefully considered. Asset and liability management (ALM) constraints, regulation, market conditions, risk-return appetite and investment objectives all differ between members and regions. This affects the decarbonisation mechanisms and approaches an individual asset owner can deploy. What is more, aligning complex financial portfolios with scientific scenario requirements and assumptions is a highly challenging task. The **limited availability of reliable data** is a key issue which provides for asymmetrical information and challenges for investment decision-making.

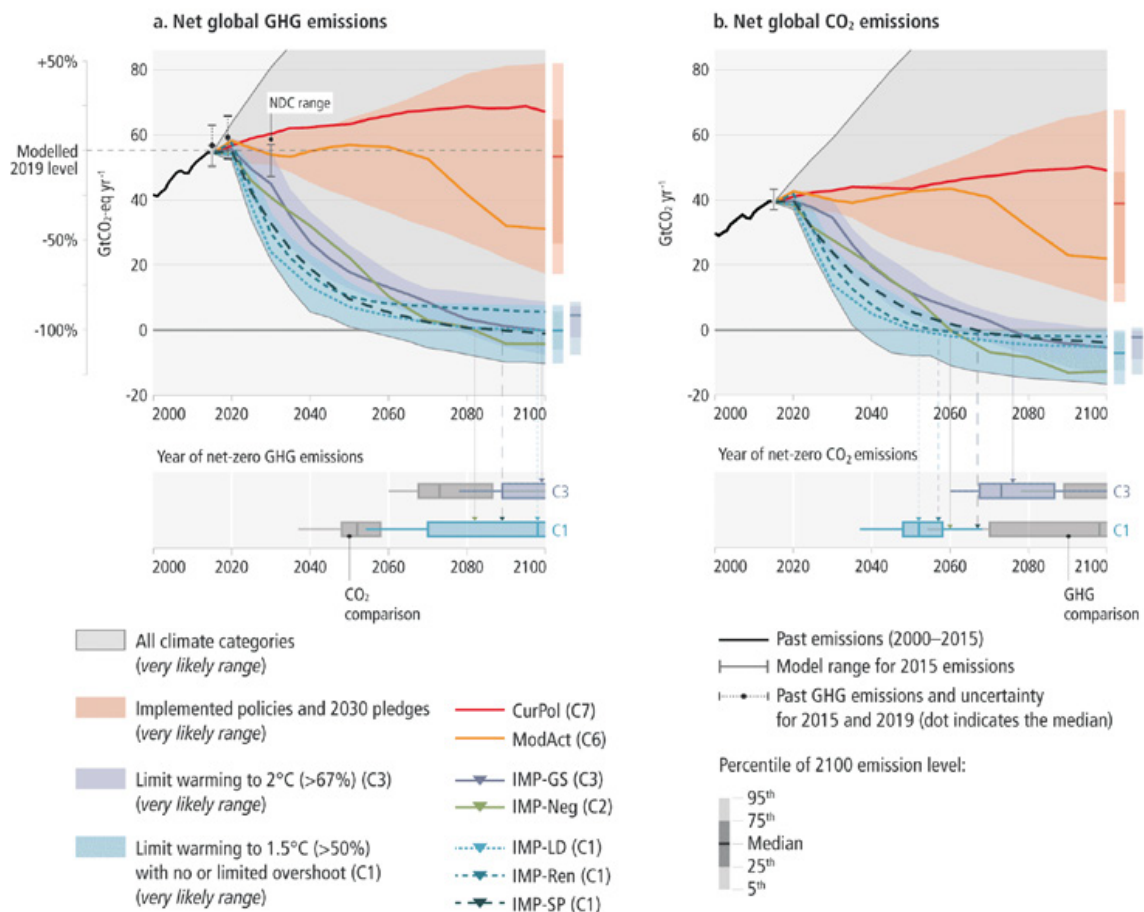
B28. Notwithstanding limitations and constraints, the Alliance's belief is that progress is more important than perfection and climate action cannot wait. Thus, Alliance members shall set targets based on the criteria outlined in this protocol and shall provide an explanation if they cannot do so. Based on the Alliance's theory of change, the Target-Setting Protocol is central to all "three main points of action"—**capital allocation strategies, engagement approaches, and field building**—in that it incorporates capital allocation strategies and engagement approaches in its methodologies, while also contributing to field building by serving as an influential publication in the financial industry. As methodologies and data availability improve, these strategies will be refined and adjusted.

2. The scientific basis for establishing net-zero targets

2.1 Scenario pathways

B29. This chapter sets out the recommended emissions reduction range for Alliance members. The following section explains the assumptions for deriving this range.

Modelled mitigation pathways that limit warming to 1.5°C, and 2°C, involve deep, rapid and sustained emissions reductions.



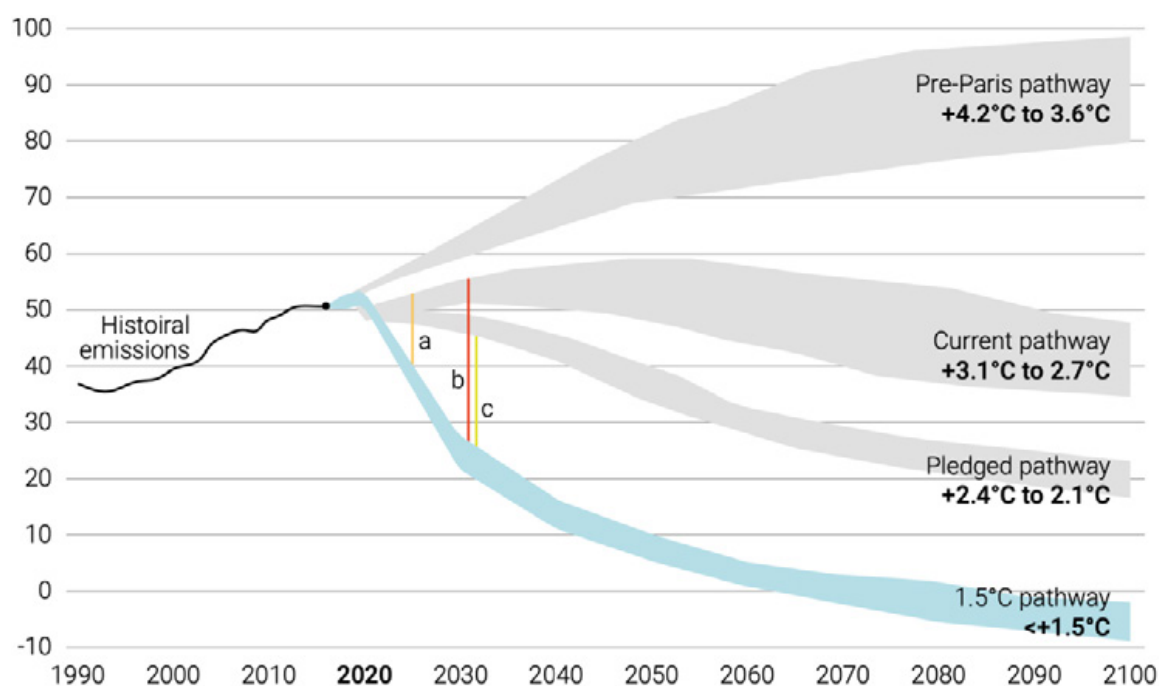
B30. **Figure I:** Modelled mitigation pathways | Source: IPCC 2022

Assumptions

- The Alliance requires use of no and low overshoot scenarios (referred to as C1 pathways in IPCC's AR6): The Alliance is committed to reviewing climate science and the resulting suggested emission reduction ranges with every revision of the Target-Setting Protocol, taking into account latest climate science.
- Carbon dioxide (CO₂) trajectories provide the blueprint for all GHGs; the Alliance's goal is net zero by 2050 for all GHGs, which is more ambitious than the IPCC 1.5°C climate scenarios (which largely see achievement of net zero for other GHGs after 2050). However, due to data reporting practices at present, data are typically reported in carbon dioxide equivalent (CO₂e). Thus, Alliance members will need to set targets on CO₂e. This has the effect of somewhat balancing out the net-zero end date between GHGs given practical constraints for tracking GHG emissions reductions as CO₂e.
- Global pathways are sufficient when portfolios are diversified regionally and by sector.
- If scenarios do provide the needed data for 2015, 2025, 2035, etc., the data are linearly projected. This method is reviewed by the Alliance's Scientific Advisory Body.
- To be less sensitive to the assumptions and narratives of individual scenarios, the Alliance will always rely on the median of a set of scenarios; namely, the C1 scenarios of IPCC's AR6. For the 2025 emission reduction range 2025, the Alliance used IPCC's SR15 scenarios (p1–3) and, in addition, filtered those scenarios that foresaw more than reductions of more than 2 per cent from 2015 to 2020, since the emissions reductions seen during these years were not as scenarios projected (aside from the impacts of the COVID-19 pandemic).
- The Alliance does not consider any high-overshoot pathways to be eligible for the emission reduction calculations and justifications.
- For the 2025 emission reduction range 2025, the Alliance uses the range as stated in the IPCC AR6 full report table on page 95, which takes a rounded, 75/25 percentile approach to the 97 scenarios of the C1 group, resulting in an emissions reduction range from 40–60 per cent.

2.2 Real economy progress

B32. It is important to note that each time an Alliance member adopts its own individual targets following scientific pathways while the global economy does not move as required by science, the gap between the Alliance member's target setting and the real economy widens (see the 2025 gap depicted in Figure II below by line 'a', and the 2030 gap depicted by line 'b'; line 'c' indicates a gap smaller than 'b' but persistent even in a scenario where governments follow through on their pledges).



B33. **Figure II:** Divergence between scientific decarbonisation pathways and the real-economy emissions | Source: the Alliance

B34. This widening 'gap' represents a decoupling of the Alliance members' (or other net-zero committed investors') targets from the real-economy pathway. The Alliance aims to avoid a situation where this would require members to shift allocations from particular economic sectors to bring their portfolios into line with the established target range. As investments are needed to catalyse the transition, this outcome would be highly harmful to the speed of the planetary transition to net zero as the real economy is left behind, hence limiting the real impact on global warming.

B35. Therefore, there is a clear need for governments and policymakers, as well as corporates around the world, to facilitate this transition by moving in line with science and in sync with Alliance members' intended portfolio trajectories, respectively. Without this collective movement from policymakers and the real economy, the Alliance may eventually need to tolerate a 'buffer' or slight lag behind the scientific pathways. If not, members may be faced with a decision to exit the majority of the investible universe, which exposes them to other (investment) risks.

B36. Furthermore, asset owners are not equal in terms of their business mix, regulatory obligations, investment goals, or management approaches. Therefore, a one-size-fits-all approach is not constructive. Alliance members have:

- Different starting points in terms of portfolio carbon emissions;
- Diverse liability constraints;
- Diverse sector allocations that may not reflect the global investment universe and may be geographically concentrated;
- Very different asset class allocations, with pension funds on the one hand seeking diversification and balance across all asset classes, and with insurance companies on the other (which have a different business model) concentrated in fixed income;
- Different investment horizons and portfolio rotation cycles—constraining the ability to keep steady portfolio holdings;
- Different levels of new business and growth;
- Varying investment approaches: active management versus buy-and-hold strategies; high conviction versus index investments; and direct ownership versus fund investments;
- Varying objectives: including that some investors may invest in the decarbonisation of hard-to-abate sectors while others may prefer to avoid such sectors; and
- Diverse operational footprints and hence differences in geographical concentrations in their portfolios; as the Paris Agreement allows different country decarbonisation paths, this will lead to differences in pace of the decarbonisation of economies and thus portfolios.

B37. Nevertheless, we expect that today's efforts by corporate, financial, and policy pioneers will turn into a groundswell over the next years as momentum is building in the real economy. We note that 111 of the systemically important emitters in the CA100+ cohort have set self-described net-zero goals (CA100+ 2021), and that 29 countries have net-zero goals in law and 50 in national policies, which is an indication of the progress possible (Energy and Climate 2024).

B38. We also expect that, by 2025, governments will have further advanced by turning their net-zero pledges into concrete and actionable policies supporting the real-world economy in its transition.⁶ Thus, in the short term, some Alliance members may choose lower-range reduction targets (following an 's' shaped curve, rather than a linear pathway to net zero) to support the transition in the real economy. This choice requires explanation of intention by the member. This approach usually entails investing or seeking to invest in high-emitting companies with the explicit intention of financing their transition. Through engagement or active ownership, the

⁶ The Alliance notes that jurisdictions considering net-zero legislation account for over 50 per cent of global GDP; there is still a need for binding legislative and/or regulatory targets to ensure progress. Alliance welcomes further government action in this respect.

Alliance member **shall** ensure that these companies set out ambitious decarbonisation goals aligned with the relevant sector pathways, coupled with robust transition plans. Alliance members **should** monitor their progress in a transparent fashion.

2.3 Just transition

- B39. A just transition promotes environmentally sustainable economies in a way that is inclusive. It does so by creating decent work opportunities, by reducing inequality, and by leaving no one behind. Just transition involves maximising the social and economic opportunities of climate and environmental action, including the provision of an enabling environment for sustainable enterprises, while minimising and carefully managing challenges (International Labour Organization [ILO] 2015). The concept of just transition was incorporated in the Paris Agreement in 2015 as a way of signalling the importance of minimising any negative repercussions from climate policies and maximising positive social impacts for workers and communities. Building on this base, a work programme on just transition pathways at COP28 acknowledged that: “climate change is a common concern of humankind and that Parties should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights, the right to a clean, healthy and sustainable environment, the right to health, the rights of Indigenous Peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as gender equality, empowerment of women and intergenerational equity” (United Nations Framework Convention on Climate Change [UNFCCC] 2023).
- B40. The concept of a just transition addresses the social risks and impacts on workers, businesses, communities, and consumers, particularly of those most vulnerable. It also incorporates climate justice issues that emerge within and between countries and regions related to climate change. Promoting a just transition is essential to achieve broad-based support for ambitious climate action and to generate benefits both for the environment and the society. As such, a just transition comprises an important aspect of achieving global, net zero GHG emissions.
- B41. Achieving a just transition requires coordinated action from all parties. Financial institutions play a major enabling role in this collective effort. Financing is crucial to expanding green and low-carbon activities, and to helping transform environmentally and socially unsustainable practices and activities (for example, stakeholder engagements, including with local and Indigenous communities). It is also crucial in assisting society to develop resilience and adapt to the physical impacts of climate change and transition pathways. In 2020, more than 161 investors representing USD 10.2 trillion in assets under management endorsed the Principles for Responsible Investment (PRI)-led [Statement of Investor Commitment to Support a Just Transition on Climate Change](#).
- B42. While an Alliance track dedicated to the just transition is presently out of scope, the Just Transition principles should be integrated throughout the Alliance’s objectives. This is because the IPCC’s Shared Socioeconomic Pathways (SSP) show the best way to limit temperature increase to 1.5°C is through a just and inclusive transition.

- B43. A just and inclusive transition is required for all markets. However, the need is particularly acute in emerging markets, which are responsible for fewer historic emissions, but are typically the most vulnerable to climate change. In addition, these markets have fewer resources to transition from their dependence on fossil fuels, while protecting livelihoods and supporting economic development.
- B44. Companies and countries with advanced technological resources and financial means tend to better align their emissions to science-based pathways. A more robust methodology of assessment should ideally increase opportunities for emerging markets to attract capital and investment flows in order to support the transition in the real economy.
- B45. To meet the targets of the Paris Agreement, the financing gap in emerging markets needs to be closed by private and public investment. While innovative financing mechanisms like blended finance and Just Energy Transition Partnerships can help accelerate climate change mitigation in emerging markets, ensuring a timely and equitable transition requires more targeted private capital.
- B46. In light of the above, all Alliance members **shall** steer their portfolios to align with science-based transition pathways to a net-zero economy, with due consideration for societal impacts. In order to support the implementation of the considerations discussed above, Box 1 provides links to useful resources and initiatives.
- B47. **Box 1: Resources and Initiatives on Just Transition**

Government/Intergovernmental

- The ILO: [Guidelines for a just transition towards environmentally sustainable economies and societies for all](#)
- Multiple governments: [COP 26 Just Transition Declaration](#)
- The European Commission: [Just Transition Mechanism: making sure no one is left behind](#)

Business—Background and Expectations

- Just Transition Centre and B Team: [Just Transition: A Business Guide](#)
- World Benchmarking Alliance: [Just Transition Assessment Methodology 2021](#)

Investors

- Multi-stakeholder: [Climate change and the just transition: A guide for investor action](#)
- PRI: [Climate change and the just transition](#)
- PRI: [Statement of Investor Commitment to Support a Just Transition on Climate Change](#)
- LSE: [UK Financing a Just Transition Alliance: Just Zero](#)
- LSE: [Making transition plans just: how to embed the just transition into financial sector net-zero plans](#)
- ILO: [Just Transition Finance Tool for banking and investing activities](#)
- Business & Human Rights Resource Centre: [Investing in renewable energy to power a just transition: Investor Guide](#)
- UNEP FI: [Just Transition Finance: Pathways for Banking and Insurance](#)

Initiatives

There are several initiatives in which signatories can get involved to advance their work on just transition:

- The Council for Inclusive Capitalism, which developed a [Just Energy Transition Framework](#)
- Climate Action 100+, which has begun to [integrate just transition indicators into assessments and are engaging with certain sectors](#)
- [World Benchmarking Alliance](#) which produced the very first just transition assessments for COP26 and which has a multistakeholder method to improving companies' approach to just transition
- Impact Investing Institute, which is behind a [Just Transition Finance Challenge](#) that supports a just transition to net zero in the UK, as well as in other developed and emerging markets
- The [Financing a Just Transition Alliance \(FJTA\)](#), coordinated by the Grantham Research Institute on Climate Change and the Environment Institute, which convenes over 30 investors in the UK.

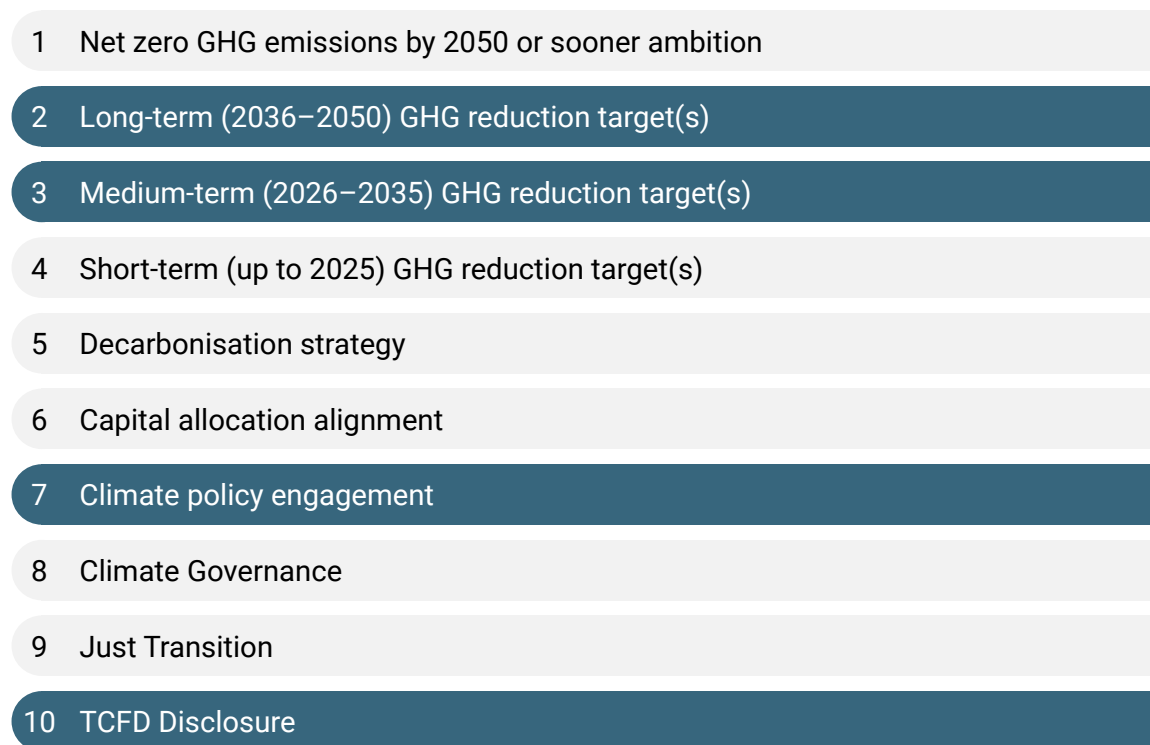
3. Background information to engagement targets

3.1 Future of investor engagement

- B48. Real-world decarbonisation outcomes will not align with the Alliance's ambitions for limiting global warming to 1.5°C if those outcomes are not supported by 1.5°C-aligned economic and policy frameworks. Engaging investees based on the assumption that individual companies or entire sectors would need to cease to exist, while their products still remain economically viable and in demand, is not a practical strategy for success. Instead, engagement with companies and asset managers on net zero must be complemented by support for policies and regulatory frameworks that are conducive to 1.5°C alignment across all geographies and all sectors. Necessary as traditional corporate engagement remains, it is an insufficient stewardship tool for achieving the real-world outcomes desired by the Alliance's ambition.
- B49. The Alliance has published a discussion paper titled [The Future of Investor Engagement: call for systematic stewardship to address systemic climate risk](#) (2022b) in which it details how the financial community can address the limits of corporate engagement. The paper calls on investors to complement their existing engagement efforts by proactively supporting sector and policy engagement that drive real-world decarbonisation in line with their long-term interests. As the paper makes clear, policy engagement is critical to ensure that decarbonisation in line with 1.5°C is feasible for all sectors. Should such an alignment not be possible, investors should focus on how demand for products of carbon-intensive sectors can be substituted in a way that mitigates social risks. Sector engagements, including those conducted through the CA100+ Global Sector Strategies, can help highlight and support policy incentives that enable real-world decarbonisation. This focus can also build on the need for engagement with asset managers, as highlighted by the Alliance's Engagement track. Within corporate engagement, the Alliance strongly opposes companies lobbying in a manner that is detrimental to asset owners' long-term interests or to the interests of society and the wider economy. As detailed in the discussion paper [Aligning Climate Policy Engagement with Net-Zero Commitments](#) (NZAOA, 2023b), the Alliance believes companies need to be made accountable for aligning their lobbying with their stated commitments.

3.2 Comparing TSP with CA100+ criteria

B50. [Climate Action 100+ \(CA100+\)](#) is an important initiative for collaborative investor engagement with investee companies. The Alliance encourages all its members to join the CA100+ group and many Alliance members that are signatories of CA100+ collaborate on sector-specific decarbonisation pathways and support collective investor action. Collaborative engagement enhances investor influence, builds expertise, and improves the efficiency of the engagement process by sharing the workload. CA100+ has released the “Climate Action 100+ Net-Zero Company Benchmark”, which is the CA100+ initiative’s primary tool for assessing focus companies based on the analysis of publicly disclosed information. To ensure that the Alliance members ask of themselves what they ask of others, the Alliance has compared the ten indicators of the CA100+ benchmark framework to its own Target-Setting Protocol. However, it should be stated that a financial institution is different from a real-economy company. As such, some elements of the benchmark do not make for analogous comparison.



B51. **Figure III: CA100+ Criteria** | Source: the Alliance

Indicators 2 and 3: Long-term (2036–2050) and medium-term (2026–2035) GHG reduction target(s)

B52. We recognise that setting medium- and long-term targets plays an important role in achieving the net-zero 2050 target. However, more immediate, short-term targets are necessary to maintain accountability and signal to the broader business and regulatory community that we expect real-world decarbonisation. By committing to set both short-term targets on a five-year cycle and a long-term target in line with IPCC pathways with no or limited overshoot scenarios, the Alliance believes

members are meeting a 1.5°C decarbonisation trajectory. As portfolio targets directly depend on the decarbonisation speed of investee companies, Alliance members need a constant feedback loop from real-world decarbonisation into their target setting. Otherwise, targets might lead to forced divestments from specific sectors before all stewardship efforts and engagement are attempted. For investors, this is fundamentally different from the Scope 1 and 2 emissions of real-world companies where their level of control is substantially higher. Alliance members implicitly make their mid-term targets by having: (i) set a long-term 2050 net-zero target in line with 1.5°C; (ii) set a short-term target to support immediate portfolio steering; and (iii) agreed to align pathways with no or limited overshoot.

Indicator 7: Climate policy engagement

B53. The members of the Alliance strive to align all climate policy engagement with the goal of accelerating the transition to a 1.5°C-aligned future. In this context, Alliance members **should** review their membership and participation in associations and organisations. In order to be transparent, members **should** disclose their respective positions regarding climate policy and **should** publish their memberships of relevant associations and organisations. Furthermore, members should consider taking an advocacy position within organisations that do not align their climate policy advocacy with the Paris Agreement or the goals of the Alliance. Additionally, in instances where members' attempts to persuade organisations to become Paris-aligned are deemed ineffective over a sustained time-bound engagement, they **should** consider cessation of membership.

There may be certain aspects of financial institutions' activities that cannot be evaluated in the same way as companies by the CA100+ benchmark. For example, sovereign wealth funds are legally advised to avoid political positions or lobbying activities. For this reason, they would not be able to engage on policy in the same way that other asset owners can. The same may apply to some (re)insurance activities. An important focus for all Alliance members beyond their own policy engagement activities is the climate advocacy activities of all investee companies. Engagement can help gauge a company's level of Paris-alignment through lobbying and asking for alignment where necessary.

Indicator 10: TCFD Disclosure

B54. Alliance members **shall** commit to following the TCFD recommendations on governance, strategy, risk management, and measurement in their own business operations, reporting, and disclosures.

4. Background information to sector targets

4.1 Comparison of carbon emission metrics

B55. **Table I:** Comparison of different carbon metrics

Intensity: Production-based metrics	The Alliance acknowledges that the lack of data availability or unreliable/weak data for production-based metrics is an issue for asset owners as the data required need to be sourced at the company level. One of the advantages of using production-based metrics for setting sector targets is that these are largely independent of economic variables (such as revenue) and have no market or price volatility. This makes it easy to track real emissions' reductions in isolation and to compare performance between companies. Recommended metrics can be found in TSP T96.
Intensity: Economic-based metrics	Sector metrics based on carbon intensity are easily available but are dependent upon economic variables (such as revenue). Also, they mainly cover Scope 1 and 2 in the sector decarbonisation pathways.
Absolute emissions-based metrics	When using absolute emissions-based targets, asset owners should apply the absolute emissions sector pathways to the companies in their portfolio belonging to a given sector/geography. However, the use of absolute financed emissions metrics to set sector targets could under certain conditions drive unintended consequences, such as the decision to divest from companies that may otherwise be strategic to the transition.

4.2 Sector pathway comparison

B56. The sector targets are being set using scenarios and sector pathways modelled to align with a 1.5°C carbon budget. The modelling approach provides a translation of technology development and technology use into transition and decarbonisation pathways for economic sectors. The two 1.5°C models explored comprise:

- One Earth Climate Model (OECM)
- IEA Net Zero by 2050: A Roadmap for the Global Energy Sector

B57. The two initial models (for which information was provided to the Alliance) have been compared in order to establish a corridor of possible quantitative targets. They will be used to corroborate the portfolio target to make sure portfolio targets and sector targets are aligned and consistent. It is challenging to identify multisector

models that include information at the sector level, with enough granularity for target-setting purposes. The Alliance continues to call upon the scientific community and other providers to continue to advance such modelling.

In addition, the following chart is adapted from the Glasgow Financial Alliance for Net Zero (GFANZ) progress report. The chart provides an overview of a number of initiatives that are seeking to use sector pathway modelling in their work.

B58. **Table II:** Sector modelling efforts and initiatives that apply it⁷

	Modelling efforts			Initiatives applying sector pathway modelling (implementation of 1.5°C pathways in progress)		
	One Earth Climate Model	Network for Greening the Financial System ³	International Energy Agency NZE2050 ⁴	Mission Possible Partnership	Climate Action 100+	Transition Pathway Initiative
Agriculture	✓	✓				
Aluminium	✓	✓		*		*
Cement	✓	✓	✓	*	✓	*
Chemicals	✓	✓	✓	*	*	*
Coal	✓	✓ (covered in Energy)	✓		*	*
Commercial & residential real estate	✓	✓	✓			
Steel (& Iron)	✓	✓	✓	✓	✓	*
Oil & gas	✓	✓ (covered in Energy)	✓		✓	✓
Power generation	✓	✓ (covered in Energy)	✓		✓	
Transport	✓	✓	✓		*	*
Aviation	✓		✓	✓	✓	*
Shipping	✓		✓	✓	✓	*
Trucking	✓	✓	✓	*		
Auto	✓	✓	✓	*	*	*

7 In progress (*) as of 2022

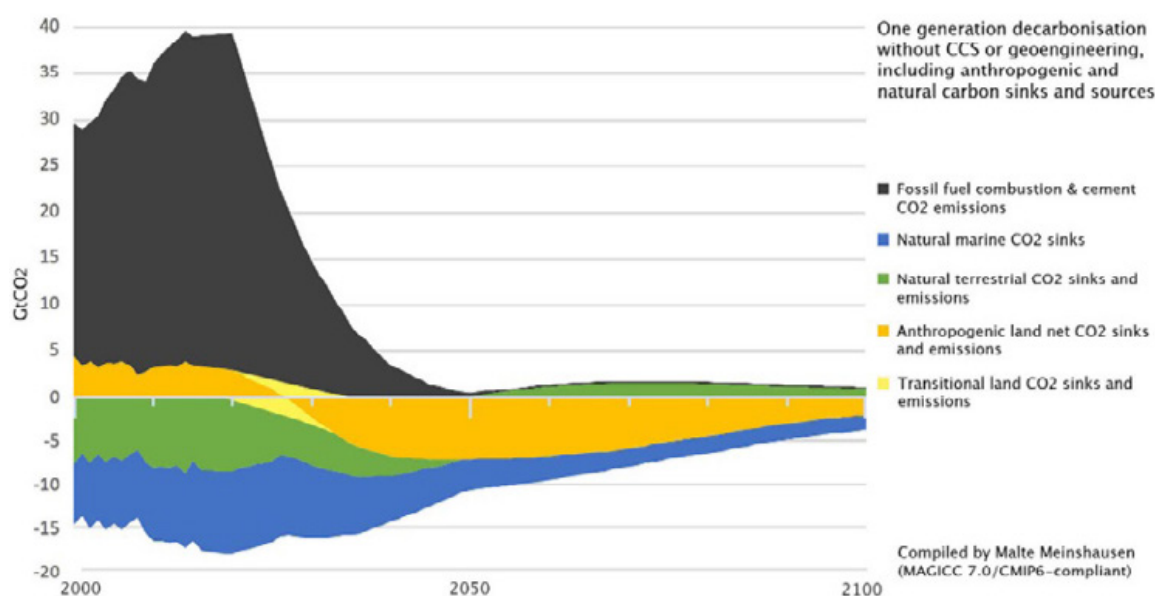
One Earth Climate Model (OECM)

B59. Beginning in Q1 2020 and following a period of consultation with various climate modelling organisations, the Alliance collaborated with the University of Technology Sydney's Institute for Sustainable Futures on its One Earth Climate Model (OECM). OECM has been used as a first reference case against which Alliance members could set sector targets at five-year intervals to 2050 across all economic sectors and geographic regions (including regional data for North America and Europe).

B60. In September 2023, new and updated data have been published. The OECM methodology was expanded in terms of both its geographic spread and its sectoral granularity. The main changes include:

- Higher technical granularity of the chemical and steel sectors
- Data for all individual G20 countries

B61. The 1.5°C scenario is based on the goal of limiting global warming to 1.5°C (drawing on scenarios that underpin the IPCC's Special Report on Global Warming of 1.5°C) and the scientific consensus around the severe risks associated with global warming even at 1.5°C, and which will continue to increase significantly beyond 1.5°C. The scenario aims to achieve a global energy-related CO₂ emissions budget of around 426 Gigatons (Gt), accumulated between 2020 and 2050. The OECM (Teske et al., 2020) shows that the 1.5°C target can be achieved through a rapid transition to 100-per-cent renewables by 2050, with renewables needing to hit 74 per cent of the global power generation mix by 2030 under the model. The shift to renewable energy will need to be coupled with a major conservation effort to increase the resilience of natural ecosystems and boost food security. This includes a moratorium on land conversions by 2030 and nearly 86 GtCO₂ of 'emissions removed' via afforestation and land restoration (shown in gold below the zero line), which pull carbon dioxide out of the atmosphere and store it in trees and the soil.



B62. **Figure IV:** One Earth Climate Model | Source: OECM 2020

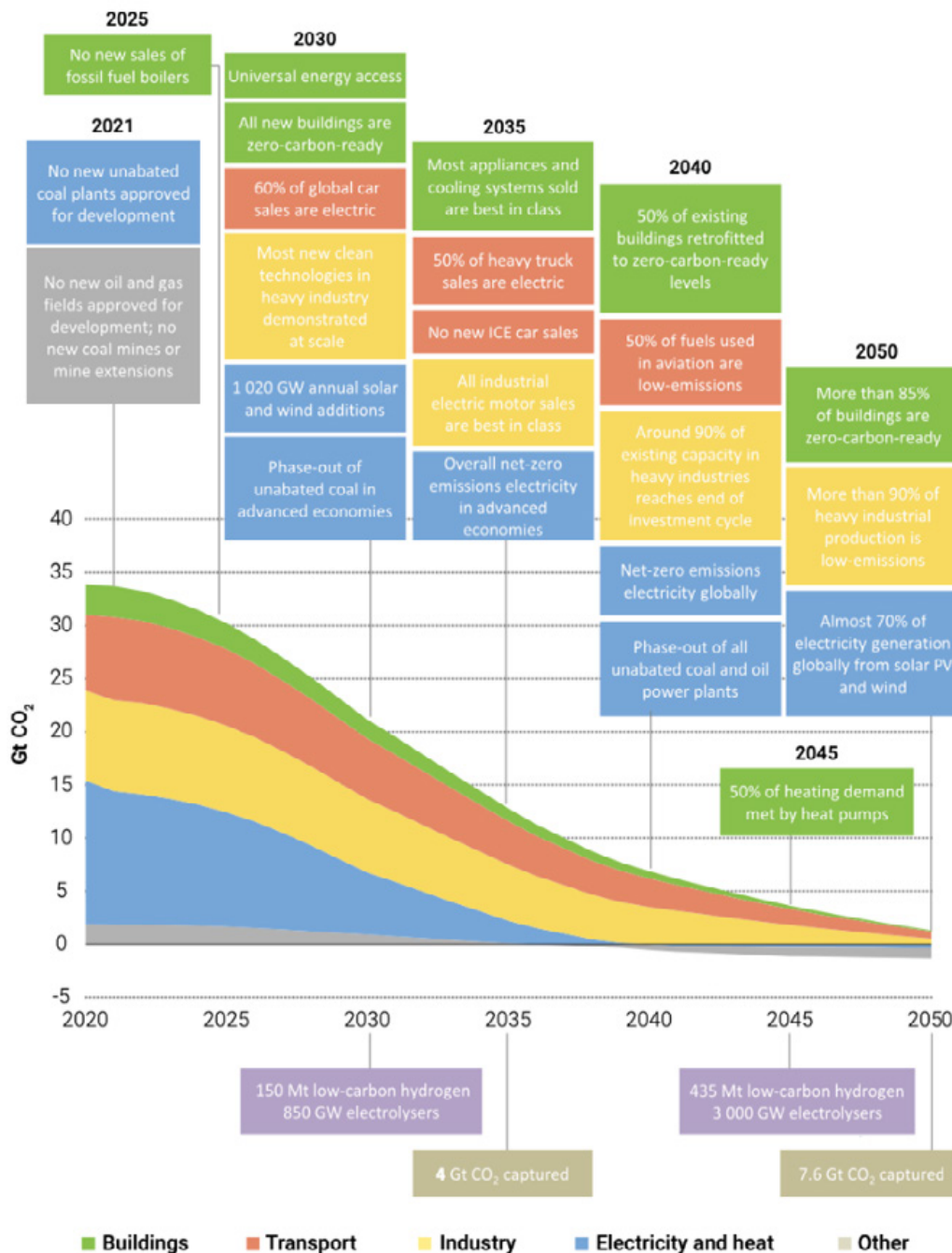
B63. The OECM is based on a modelling cluster that provides sector-specific, five-year targets compatible with a 1.5°C pathway. The model is based on the following assumptions:

- Development of a 100-per-cent renewable energy scenario;
- Decarbonisation of the entire global energy sector within one generation (until 2050);
- Use only of technologies currently available or under development, excluding bioenergy with carbon capture and storage (BECCS), carbon capture and storage (CCS) and nuclear energy. Note that the exclusion of CCS technology from the OECM model used to set sector targets might differ from the approach used by other organisations. OECM also includes methane emissions resulting from the mining and extraction of fossil fuels.

The net-zero pathways derived from OECM have been peer reviewed by a number of climate modelling organisations including the Energy Transition Commission, Exponential Roadmap, the Potsdam Institute for Climate Impact Research, the Science Based Targets Initiative, the Carbon Disclosure Project (CDP), and the environmental non-profit WWF.

The International Energy Agency (IEA): Net Zero by 2050, A Roadmap for the Global Energy Sector

B64. In 2021, the IEA released a special report of how to transition to a net-zero energy system by 2050, while at the same time ensuring stable and affordable energy supplies, providing universal energy access, and enabling robust economic growth. Its report set out a cost-effective and economically productive pathway, resulting in a clean, dynamic, and resilient energy economy dominated by renewables like solar and wind instead of fossil fuels. The report also examined key uncertainties in reaching net zero, such as the roles of bioenergy, carbon capture, and behavioural changes (IEA, 2021). The IEA NZE2050 scenario includes an overall carbon budget of 460GtCO₂ (CO₂-only) for global energy-related and industrial processes only.



B65. **Figure V:** Key Milestones in the pathway to net zero | Source: IEA 2021

Comparison between the IEA Net Zero Roadmap and the OECM 1.5°C sector pathway

To aid Alliance members in their assessment and application, the main differences between the OECM and the IEA NZ are outlined below.

One Earth Climate Model (OECM)

B66. OECM is an SSP 1 scenario as defined by the IPCC: SSP 1 is a scenario in which social, business, and technological innovations result in lower energy demand up to 2050 while living standards rise, especially in the southern hemisphere. A down-

sized energy system enables rapid decarbonisation of energy supply. Afforestation is the only carbon dioxide removal option considered; neither fossil fuels with CCS nor BECCS are used.

OECD avoids a carbon budget overshoot and expands 'natural carbon sinks' (e.g. forest, mangroves, and seaweed) to achieve negative emissions to compensate process emissions that are currently unavoidable (with currently available technologies).

Key features

- Cumulative energy-related CO₂ emissions 2020–2050: 426 GtCO₂. Overall cumulative negative emissions via natural carbon sinks: (-) 94 GtCO₂ (2020–2100). The OECD takes into account 50 GHG gases, including over 30 chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HFCs) as well as black carbon.

Reporting

All GHG emissions are separated:

- Data are split into primary and secondary energy emissions, as well as emissions from end-use activity. Data for 12 industry sectors are in line with the Global Industry Classification Standard (GICS).
- Data are disaggregated by region: Global, OECD North America, OECD Europe (all G20 countries and EU27 (all EU27 member states will be available in Nov. 2024)). The OECD also provides carbon emissions data and product-level intensity data as well as energy-demand data per sector (Teske, 2023).

IEA Net Zero by 2050 scenario

B67.

The energy pathway of IEA Net Zero by 2050 scenario classifies (partly) as an IPCC SSP 2 scenario, which is defined as "a scenario with a broad focus on sustainability including energy intensity, human development, economic convergence and international cooperation, as well as shifts towards sustainable and healthy consumption patterns, low-carbon technology innovation, and well-managed land systems with limited societal acceptability for BECCS". Land-use scenarios and all other non-energy GHGs (including over 30 substances that fall under the Montreal Protocol) are not included.

Key features

The Net Zero Emissions by 2050 Scenario (NZE) is designed to show what is needed across the main sectors by various actors, and by when, for the world to achieve net zero energy-related and industrial-process CO₂ emissions by 2050. Cumulative global energy-related and industrial-process CO₂ emissions between 2020 and 2050 amount to just over 460Gt. The NZE also aims to minimise methane emissions from the energy sector. Alongside, it includes corresponding reductions in GHG emissions from outside the energy sector, consistent with limiting the global temperature rise to 1.5°C without a temperature overshoot (with a 50% probability). Universal access to sustainable energy is also achieved by 2030.

Reporting

The IEA Net Zero by 2050 covers all energy related and industrial process emissions, but does not split between Scope 1, 2 and 3 emissions. It does not specify all regions and industry sub-sectors, nor does it use the GICS categories.

As demonstrated above, a detailed quantitative comparison is not possible; however, key differences are outlined below.

B68.

Table III: Comparison of OECM versus IEA NZ2050 scenario

IEA Net Zero Scenario ⁸	OECM—Energy pathway
Aside from projects already committed as of 2021, no new oil or gas fields, or coal mines or mine extensions should be approved for development after 2021.	Existing oil and gas fields and coal mines are phased out at an average annual decrease rate of at least 8.5%, 3.5%, and 9.5%, respectively. New fossil fuel projects cannot go ahead.
Use of fossil fuel falls from almost 80% of global energy supply in 2021 to just over 20% in 2050. CC(U)S is used after 2030 for coal, gas, and bio energy fuelled plants.	Fossil fuels will account for just under 8% of total energy supply in 2050 (for non-energy use only).
No new investment decisions should be taken for new unabated coal plants, the least efficient coal plants should be phased out by 2030, and any remaining coal plants should be retrofitted with CCUS by 2040.	No new investment in fossil power plants after 2030, and coal power plants—including combined-heat and power (CHP)—will be phased out between 2030 and 2035 in OECD countries, and between 2035 and 2045 in developing countries.
Emissions reductions through to 2030 rely on existing technologies, but, by 2050, 46% of emissions reductions come from technologies that are currently at the demonstration or prototype phase.	Emissions reductions are almost completely driven by the shift to existing renewable energy technology, with some new technological development needed to assist the transition to electric vehicles, biofuels, and hydrogen in the industry and transport sectors.
Carbon Capture, Utilisation and Storage (CCUS) will capture 7,600 Mt CO ₂ per year by 2050. Of this, 5,245 Mt will be from fossil fuels and processes (including power, industry, and hydrogen production), 1,380 Mt from bioenergy (e.g. BECCS), and around 1,500 Mt from DACS technologies. IEA: approx. -120 Gt until 2050 (cumulative); no data for 2100.	BECCS and CCUS are both excluded from the analysis due to their lack of commercial viability. Reforestation begins immediately, and deforestation ends by 2030. Nature-based carbon sinks (forests, mangroves, and seaweed) are used instead of CCS to compensate for process emissions. OECM: -5 GtCO ₂ by 2050/-94 GtCO ₂ (cumulative until 2100).
Hydrogen production will be scaled up to be used as fuel in sectors such as shipping, air travel and heavy industry, with a total of 11 EJ/a produced by 2050.	Renewable generated hydrogen will supply 4% of final energy use (14 EJ/a) by 2050), mainly for industrial process heat.

⁸ Comparison is based on IEA Net-Zero Scenario 2021

Electricity will account for almost 50% of total energy consumption in 2050, and total electricity generation will increase by 250% from 2021. IEA: Total global power generation in 2050: 72,000 TWh.	Electricity will account for around 64% of total energy consumption in 2050. Electricity generation will increase by 206% until 2050, based on 2020 levels. OECM: Total power generation in 2050: 94,515 TWh/a (2020: 26,700 TWh/a), Final electricity demand in 2050 64.988 TWh/a (2020: 22,112 TWh/a)
Almost 90% of global electricity generation in 2050 comes from renewable energy. Solar and wind account for 70%. Two thirds of total energy supply in 2050 is from renewables, with solar accounting for one fifth of total global energy supply.	Renewable energy will generate 100% of electricity. It will also comprise 100% of total energy supply, with solar accounting for one third of this. Any remaining fossil fuels will only be used for non-energy uses, such as the petrochemicals industry.
Solar generation capacity is expected to increase 20-times between now and 2050, and wind capacity by 11 times.	Between 2020 and 2050, solar and wind generation are expected to increase by 35 times and 24 times, respectively.
Annual rate of energy intensity improvements of around 4% per year to 2030.	While the rate differs per region, this report assumes a comparable global average rate of energy-intensity improvements to the IEA.
Total global final energy demand in 2050 is around 17% less than 2020.	Total global energy demand is 11% higher than in 2020.
Bioenergy will be deployed for aviation, shipping, cooking, and replacing natural gas with biomethane to provide heat and electricity. Bioenergy will produce 102,000 PJ/a by 2050.	Sustainable biomass will produce 87 EJ/a in 2050. It will primarily be used for process heat and aviation.
The biggest innovation opportunities are in the areas of advanced battery storage, hydrogen electrolysis, and direct air capture and storage (DACs).	No reliance on “breakthrough” technologies such as BECCS or DACs. Instead, the focus is on technologies that are already market-ready, including technologies that may still evolve and fall in cost over time due to economies of scale.

Source: Alliance's Target-Setting Protocol Annex (with contributions from Dr. Sven Teske)

World Economic Forum's Mission Possible Partnership

B69. The Mission Possible Partnership (MPP) is a coalition of public and private partners working on the industry transition to set heavy industry and mobility sectors on the pathway towards net zero emissions by mid-century. MPP is comprised of four core partners: the Energy Transitions Commission, Rocky Mountain Institute, the We Mean Business coalition, and the World Economic Forum (WEF). It focuses on developing partnerships to deliver key initiatives for enabling industries to achieve net zero CO₂ emissions, including aviation, circular cars, heavy-duty road transport, shipping, aluminium, chemicals, cement and concrete, and iron and steel. Sector pathways will be reviewed when made available to the Alliance.

Sectoral intelligence received from sector participants

- B70. To reality check the top-down sector pathways, the Alliance will also employ a bottom-up approach. This includes, but is not limited to:
- Sector dialogues: As companies converge around intensity-based or CO₂ emissions per production unit, it is possible to begin to identify those who are 'on the mark' and those who fall short. Through sector dialogues, the "climate change sector leaders" will be used for reality checking the net-zero targets.⁹
 - Gap Analysis: Transition Pathway Initiative (TPI) and other initiatives and data providers have collected targets for the high emitting sectors. These data will be used for a gap analysis of where the selected high-emitting sectors are today and will be compared to what science deems necessary to achieve net-zero pathways. The results will feed into sector, company, and policy engagement.
 - Reference to other sector pathways: Where sector pathways are not derived from an economy-wide model, but rather developed per sector, the Alliance will also compare the individual sector pathways. For example, the Science Based Targets initiative has produced a 1.5°C pathway for the power sector. The results from these sector decarbonisation pathways will be compared to the top-down sector pathways 'corridor' derived from OECM and the IEA.

4.3 Financial sector classification

The table outlines a classification of main CO₂-emitting activities, intended as reference. The final selection of codes should align with an institution's sector-specific segmentation and data availability. The list of codes is indicative and asset owners are invited to also consider other codes, such as the PCAF database EXIOBASE.

B71. **Table IV:** Sector classification¹⁰

Oil & gas		
Proposal financial sector—oil & gas		
NACE	B—Mining and quarrying	B6 Extraction of crude petroleum and natural gas
		B9 Support activities for petroleum and natural gas extraction
	C—Manufacturing	C19 Manufacture of coke and refined petroleum products
D—Electricity, gas, steam and air conditioning supply		D35.2 Manufacture of gas; distribution of gaseous fuels through mains
		D35.2.1 Manufacture of gas
BICS— Bloomberg	13—Energy	1310 Oil & Gas

⁹ One Earth Climate Model (OECM) Sector Pathways to Net Zero.

¹⁰ Notes on the table: Activities linked to gas distribution are categorised under 'Gas Utilities', while activities linked to coal are comprised under "Utilities".

GICS—S&P and MSCI	1010—Energy	101010 Energy Equipment & Services
		101020 Oil, Gas & Consumable Fuels
Utilities		
Proposal financial sector—utilities/electric generation and distribution		
NACE	B—Mining and quarrying	B5 Mining of coal and lignite
		B8 Other mining and quarrying
		B9 Mining support service activities
		B9.9 Support activities for other mining and quarrying
	D—Electricity, gas, steam and air conditioning supply	D35.1 Electric power generation, transmission and distribution
		D35.3 Steam and air conditioning supply
E— Water supply; Sewerage, Waste Management and Remediation Activities	E38.2 Waste treatment and disposal	
	E38.21 Treatment and disposal of non-hazardous waste ¹¹	
BICS—Bloomberg	20—Utilities	201010 Electric Utilities
GICS—S&P and MSCI	5510—Utilities	551010 Electric Utilities
		551030 Multi-Utilities
		551050 Independent Power Producers & Energy Traders
	1010—Energy	101020 Oil, Gas & Consumable Fuels
		10102050 Coal & Consumable Fuels
Proposal financial sector—utilities/gas		
NACE	D—Electricity, gas, steam and air conditioning supply	D35.2 Manufacture of gas; distribution of gaseous fuels through mains
		D35.2.2 Distribution of gaseous fuels through mains
		D35.2.3 Trade of gas through mains
BICS—Bloomberg	20—Utilities	201011 Gas and Water Utilities
		20101110 Gas Utilities
GICS—S&P and MSCI	55—Utilities	551020 Gas Utilities

11 Including only activities for disposal of non-hazardous waste by combustion or incineration or other methods, with or without the resulting production of electricity or steam, compost, substitute fuels, biogas, ashes or other by-products for further use etc

Proposal financial sector—utilities/water		
NACE	E—Water supply, sewerage, waste management and remediation activities	E36 Water collection, treatment and supply
BICS— Bloomberg	20—Utilities	201011 Gas and Water Utilities
		20101111 Water Utilities
GICS—S&P and MSCI	55—Utilities	551040 Water Utilities
Transport		
Proposal financial sector—transportation/airlines		
NACE	H—Transporting and storage	H51 Air transport
		H53 Postal and courier activities
	C—Manufacturing	C30 Manufacture of other transport equipment
		C30.3 Manufacture of air and spacecraft and related machinery
BICS— Bloomberg	17—Industrial	171112 Transportation & Logistics
		17111210 Airlines
		17111211 Air Freight
GICS—S&P and MSCI	2030—Transportation	203010 Air Freight & Logistics
		203020 Passenger Airlines
		203050 Transportation Infrastructure
		20305010 Airport Services
Proposal financial sector—transportation/light and heavy road transport		
NACE	H—Transporting and storage	H49 Land transport and transport via pipelines
		H49.1 Passenger rail transport, interurban
		H49.3 Other passenger land transport
		H49.4 Freight transport by road and removal services
	C—Manufacturing	C29 Manufacture of motor vehicles, trailers and semi-trailers
		C30 Manufacture of other transport equipment
BICS - Bloomberg	17—Industrial	171112 Transportation & Logistics
		17111215 Trucking
	11—Consumer Discretionary	111011 Automotive

GICS—S&P and MSCI	20—Industrials	203040 Ground Transportation (New Name)			
		203050 Transportation Infrastructure, 20305020 Highways & Railtracks			
	25—Consumer Discretionary	2510 Automobiles & Components			
Proposal financial sector—transportation/shipping					
NACE	H—Transporting and storage	H50 Water transport			
	C—Manufacturing	C30 Manufacture of other transport equipment C301 Building of ships and boats			
BICS—Bloomberg		17—Industrial	171112 Transportation & Logistics 17111215 Marine Shipping		
	GICS—S&P and MSCI		2030—Transportation	203030 Marine Transportation 203050 Transportation Infrastructure, 20305030 Marine Ports & Services	
Materials					
Proposal financial sector—materials/cement					
NACE	C—Manufacturing	C23.5 Manufacture of cement, lime and plaster C23.5.1 Manufacture of cement C23.5.2 Manufacture of lime and plaster			
		C23.6 Manufacture of articles of concrete, cement and plaster			
		C23.7 Cutting, shaping and finishing of stone			
		C23.9 Manufacture of abrasive products and non-metallic mineral products n.e.c.			
		B—Mining and quarrying	B08 Other mining and quarrying B0811 Quarrying of ornamental and building stone, limestone, gypsum, chalk and slate B089 Mining and quarrying nec [Suggestion to add]		
			BICS—Bloomberg	18—Materials	181011 Construction Materials 18101110 Cement & Aggregates 18101111 Building Materials 181011111 Concrete Products
	GICS—S&P and MSCI	15—Materials			151020 Construction Materials

Proposal financial sector—materials/steel		
NACE	B—Mining and quarrying	B07 Mining of metal ores
	C—Manufacturing	C24 Manufacture of basic metals
		C241 Manufacture of basic iron and steel and of ferro-alloys
		C242 Manufacture of tubes, pipes, hollow profiles and related fittings, of steel
		C245 Casting of metals
		C2451 Casting of iron
		C2452 Casting of steel
BICS—Bloomberg	18—Materials	181014 Steel
		181015 Metals & Mining
		18101510 Iron
GICS	15—Materials	151040 Metals & Mining
		15104050 Steel
Proposal financial sector—materials/aluminium		
NACE	C—Manufacturing	C24.4 Manufacture of basic precious and other non-ferrous metals
		C24.4.2 Aluminium production
		C24.5 Casting of metals
		C24.5.3 Casting of light metals
BICS—Bloomberg	18—Materials	181015 Metals & Mining
		18101511 Base Metals
		1810151110 Aluminium
GICS	15—Materials	151040 Metals & Mining
		15104010 Aluminum
Agriculture, forestry, and fisheries		
NACE	A—Agriculture, forestry and fishing	A01 Crop and animal production, hunting and related service activities
		A02 Forestry and logging
		A03 Fishing and aquaculture
BICS—Bloomberg	12—Consumer Staples	121010 Food
		12101010 Agricultural Producers
GICS—S&P and MSCI	30—Consumer Staples	302020 Food Products
		30202010 Agricultural Products & Services

Chemicals		
NACE	C—Manufacturing	C20 Manufacture of chemicals and chemical product
BICS— Bloomberg	18—Materials	181010 Chemicals
GICS—S&P and MSCI	15—Materials	1510 Materials
		151010 Chemicals
Construction and buildings		
NACE	F—Construction	F41 Construction of buildings
		F42 Civil engineering
		F43 Specialised construction activities
BICS— Bloomberg	11—Consumer Discretionary	111012 Home Construction
	17—Industrial	171113 Engineering & Construction
GICS—S&P and MSCI	20—Industrials	2010 Capital Goods
		201020 Building Products
		201030 Construction & Engineering
Textiles and leather		
NACE	C—Manufacturing	C13 Manufacture of textiles
		C14 Manufacture of wearing apparel
		C15 Manufacture of leather and related products
BICS— Bloomberg	11—Consumer Discretionary	111010 Apparel & Textile Products
GICS—S&P and MSCI	25—Consumer Discretionary	2520 Consumer Durables & Apparel
		252030 Textiles, Apparel & Luxury Goods

5. Background information to sub-portfolio targets

5.1 Comparing absolute and intensity metrics

B72. Using both absolute and intensity metrics to measure and reduce portfolio emissions can be useful for the following reasons:

- Carbon intensity can be a useful tool to inform capital allocation decisions in the construction of decarbonising portfolios and when measuring progress on carbon emissions by portfolio companies. Therefore, carbon intensity can play a key role in setting the stage for achieving absolute emission reductions.
- In a given sector, absolute corporate emissions are highly dependent on the size of the corporation. Using a carbon intensity measure allows an investor to compare companies within an industry and select the most carbon efficient player within that industry, independent of company size.
- Alliance members may be expecting significant growth in their portfolios as a result of shifting capital, good returns, economic growth or simply because they manage products or plans that are in an accretive phase (i.e. contributions exceed withdrawals). The opposite may be true for other members. These variations in the asset under management will highly influence absolute portfolio emissions and thus not reflect real decarbonisation trends. Here, an intensity metric helps to better mirror the decarbonisation efforts on the marginal dollar.

Notwithstanding the Alliance's overarching (absolute) net-zero ambition for 2050, we consider that intensity metrics and intensity-based targets can play an important role in the implementation and management of portfolio decarbonisation within asset owners. Alliance members may therefore set absolute or intensity-based targets, particularly in the early years.

If an intensity-based metric is utilised, then members should understand, on a disaggregated basis, the portion of the intensity reduction originating from asset purchases and disposals, and those originating from organic emission reductions generated by assets in portfolio and that originate from changes in financial metrics. If an intensity-based metric is reported, it is recommended that either revenue or enterprise value/enterprise value including cash (EV/EVIC) is used. Intensity-based targets need to counterbalance economic growth—expressed in gross domestic product (GDP)—to lead to the same absolute emission reductions as absolute emis-

sion-based targets over long term. When calibrating their own targets, members should be aware of the growth assumption inherent in climate models for the regions in which their portfolio is invested.

B73. Using market cap is common for equity portfolios, but, as most members of the Alliance are also invested in corporate bonds, we recommend using EV or EVIC to allocate emissions to the relevant parts of the balance sheet (equity/debt).¹²

In general, Alliance members should ensure all calculation nominators and denominators are closely aligned; e.g. taking nominal value for bonds in an EV-based calculation as the outstanding debt component in the EV of a company is also based on nominal value. Moreover, less volatile measures will lead to more stable results.

EV/ EVIC is closely linked to the financing sources of companies, hence directly linked to the role of investors. This logic can also be applied to real assets, such as real estate and infrastructure, thus allowing a more uniform approach to the total portfolio. On the other hand, revenues are more closely linked to the production output of companies and thus to the source of emissions. In our long-term effort to expand this Protocol to all asset classes we see a slight preference for EV/EVIC based intensity metrics

12 This is also in line with the EU Benchmark Regulation linked to the EU Action Plan on Sustainable Finance and the European Banking Authority's Regulatory Technical Standards (RTS) consultation.

Table V: Comparing absolute metrics and intensity metrics

Total Carbon Emissions (absolute metrics)	Carbon Intensity (intensity metrics)
<p>This metric measures the Total Owned Carbon Emissions associated with the underlying investments of a portfolio. The Scope 1, Scope 2, and potentially Scope 3 carbon emissions are attributed based on the equity or debt ownership relative to the Enterprise Value or EVIC, and for equities relative to the Market Cap.¹³</p>	<p>This metric represents the volume of emissions attributed to an Alliance member in relation to a specific financial metric. The carbon intensity can be expressed with different denominators.</p>
<p>Pros:</p> <ul style="list-style-type: none"> ▪ This metric is easily understandable and well known across the investment industry. ▪ It is applicable to a number of asset classes, including real estate, by using the asset value as the denominator. ▪ Links can be easily made back to the total absolute global carbon emission budget available in a 1.5°C scenario. 	<p>Pros:</p> <ul style="list-style-type: none"> ▪ As emissions data coverage improves and new asset classes are added, an intensity metric is more stable and better accommodates baseline adjustment. ▪ The metric can be used on a number of asset classes, including real estate assets. If a member selects a combined target, this metric can still be created by using the asset value as the denominator or revenues ▪ This metric can be used to compare the emissions intensity level of different asset classes, portfolios, or even members. It is also a useful metric to select the best performers within the same sector should it be necessary to rebalance a portfolio towards a low-carbon tilt. ▪ A quantitative analysis on variation factors can be performed on this metric
<p>Cons:¹⁴</p> <ul style="list-style-type: none"> ▪ Portfolio growth can outpace the reduction in carbon emissions. Adaptations for M&A and unusual portfolio growth rates are necessary ▪ It is difficult to compare portfolios, both to each other and to a benchmark. 	<p>Cons:¹⁵</p> <ul style="list-style-type: none"> ▪ The reduction/increase in emissions can be driven by volatility in the economic metric selected as the denominator. ▪ Total emissions can still increase even if the carbon-intensity measure used decreases. ▪ Revenues in high emitting sectors are often directly linked to volatile commodity prices (e.g. oil, gas, and coal).

Source: Alliance's Target-Setting Protocol

13 The Alliance notes that market cap would not be a reasonable metric for calculating emissions for fixed income holdings.

14 The Alliance recommends the use of debt's nominal value.

15 We recommend the use of debt's nominal value for the value of a fixed income investment.

5.2 Infrastructure

Infrastructure types

B75.

Table VI: Infrastructure asset types in scope

Infrastructure type	Sub-type examples	General definition
Energy infrastructure ¹⁶	(Carbon-Intensive) Energy infrastructure	Carbon-intensive energy infrastructure are the physical assets that enable large-scale energy generation, such as (upstream) coal, gas, and utilities infrastructure and low-quality distribution infrastructure.
	(Low-Carbon) Energy infrastructure, distribution, and technology	Low-carbon energy infrastructure, distribution, and technology encompass renewables, nuclear, electricity transmission lines, as well as technologies such as advanced electrical metering, smart building systems, power plant control systems, and high-quality distribution infrastructure.
Transportation infrastructure	Rail networks; airports; roadworks (including bridges); public transportation systems; ports	Transport infrastructure refer to the framework that supports the transportation system. They include roads, highway systems for mass transit, public transportation systems, airports, ports, trains, subways, and light rail systems, bridges, and tunnels.
Social infrastructure	Public buildings; hospitals; schools and universities; community housing	Social infrastructure refer to facilities that support social services and include public buildings or works (e.g. courts, schools, social housing).
Water infrastructure	Water treatment; water supply; sewer systems	Water infrastructure include water treatment plants, water supply systems, sewer systems, and sewage treatment facilities.
Communications infrastructure	Telecom utilities	Communication infrastructure refer to the backbone of the communications system upon which various broadcasting and telecommunication services are operated, and include wireless, cable, and satellite networks as well as data centres.
Waste management infrastructure	Landfills; recycling	Waste management infrastructure includes infrastructure for landfills, converting waste to energy (WTE), and recycling or composting.

Source: Alliance's Target-Setting Protocol

¹⁶ In line with Alliance position paper on Oil/Gas/Coal that no new Oil/Coal assets or capacity should be financed, permitted, developed or constructed.

Carbon accounting for infrastructure

- B76. It is recommended that the carbon emission measurement of infrastructure assets¹⁷ be aligned with the [GHG Protocol](#). Alliance members **should** measure emissions for all infrastructure-related assets, as described in this chapter.

Greenfield assets and lifetime emissions

- B77. For greenfield assets, the Alliance is aligned with the PCAF Standard for the Financial Industry, which recommends that financial institutions assess the total projected lifetime Scope 1 and 2 emissions (PCAF 2022). Members **should** attempt to report lifetime emissions for greenfield energy infrastructure projects. Lifetime emissions for other asset types **should** be reported where possible.

For greenfield assets, it is necessary to distinguish between the different development stages (early development, construction, turn-key). Where an asset owner is the initial sponsor or lender in an early development greenfield infrastructure project, members **should** report estimated lifetime Scope 1 and 2 emissions for the asset in the year of contracting (PCAF 2022). They **should** also make an assessment as to whether the purpose of the asset and its lifetime emissions are aligned with (or can be brought in line with) the net-zero ambition by 2050 (considering that the asset's lifetime may go beyond 2050). This can be done using the scenarios discussed in Chapter 5 (and in further detail in the Annex), or other 1.5°C-aligned scenarios/methodologies with no or limited overshoot. For investors based in the European Union, the EU Taxonomy gives guidance for many business activities on how to align with net-zero ambition (EU Technical Expert Group on sustainable finance 2020).

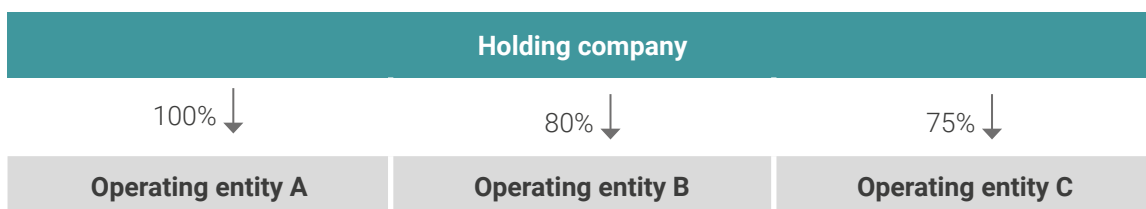
If an asset owner enters an investment at a later stage (construction or turn-key), members **should** report estimated lifetime Scope 1 and 2 emissions for the asset in the year of contracting. For this kind of investment, Alliance members **should** undertake an assessment as to whether the purpose of the asset and its lifetime emissions are aligned with (or can be brought in line with) the net-zero ambition by 2050 (again using scientific solid 1.5°C scenarios with no or limited overshoot).

Existing greenfield investments of any kind invested via a fund structure sit outside the current scope for Alliance recommendations for an estimate of lifetime emissions. This is due to the low level of influence combined with the fact that most asset owners will not have existing reporting requirements in place. However, Alliance members **should** include reporting requirements with regards to lifetime emissions for future investments via funds and engage current invested fund managers to do so. The reporting of lifetime emissions **shall** be separate to the reporting of annual emissions. Once a greenfield project becomes operational, the member **should** report annual operational emissions.

17 To improve readability, the Alliance always refers to “infrastructure assets” instead of “infrastructure assets or corporations managing and/or owning infrastructure assets”.

Brownfield assets

- B78. Projects are often structured including various operational entities (OpCos) that are owned by a holding structure (HoldCo); investors might provide debt on both levels. Other more complex structuring also occurs regularly. Ownership share **should** always be determined via an economically consolidated (virtual) balance sheet (see formula below) of the borrower.



- B79. **Figure VI:** HoldCo diagram | Source: Alliance's Target-Setting Protocol

- B80. As per PCAF, the asset owner should determine their share of each infrastructure asset's annual emissions based on the ratio between the asset owner's outstanding amount (numerator) and the total equity and debt of the infrastructure asset (denominator) (see formula below). The outstanding amount being the amount of debt and/or equity provided by the asset owner.

$$\text{Financed emissions} = \sum \left(\left(\frac{\text{outstanding amount}}{\text{total equity} + \text{debt}} \right) \times \text{Infrastructure asset annual emissions} \right)$$

Following PCAF recommendations; in the case of debt, the outstanding amount is defined as the value of the debt the borrower owes to the lender (i.e. disbursed debt minus any repayments) while in the case of equity, the outstanding amount is the outstanding value of equity the financial institution holds in the project. It is calculated by multiplying the relative share of the financial institution in the respective project by the total equity of the respective project's balance sheet. Financial institutions shall either use the calendar or financial year-end outstanding amount, provided the approach is communicated and used consistently.

- B81. The Alliance does not recommend the use of revenue as a denominator for infrastructure assets for two reasons: 1) during construction phase revenues are usually zero and 2) for many regulated assets the revenues are not directly linked to output/usage measures. For infrastructure concessions the total value of the concession **shall** be used and kept constant during the concession term.

5.3 Real estate

Guidance to net-zero buildings

B82. The global approach to net zero needs to be translated and addressed at the individual building level to provide concrete guidance to owners as to what the long-term target constitutes and to enable effective measures to be taken to reach that target.

What constitutes a net-zero building is still evolving. Existing definitions¹⁸ can, in general, be divided into those focusing primarily on energy (zero or net-zero energy building) and those focusing primarily on carbon emissions (zero or net-zero emission building)—either operational emissions or both operational and embodied emissions (whole life carbon).

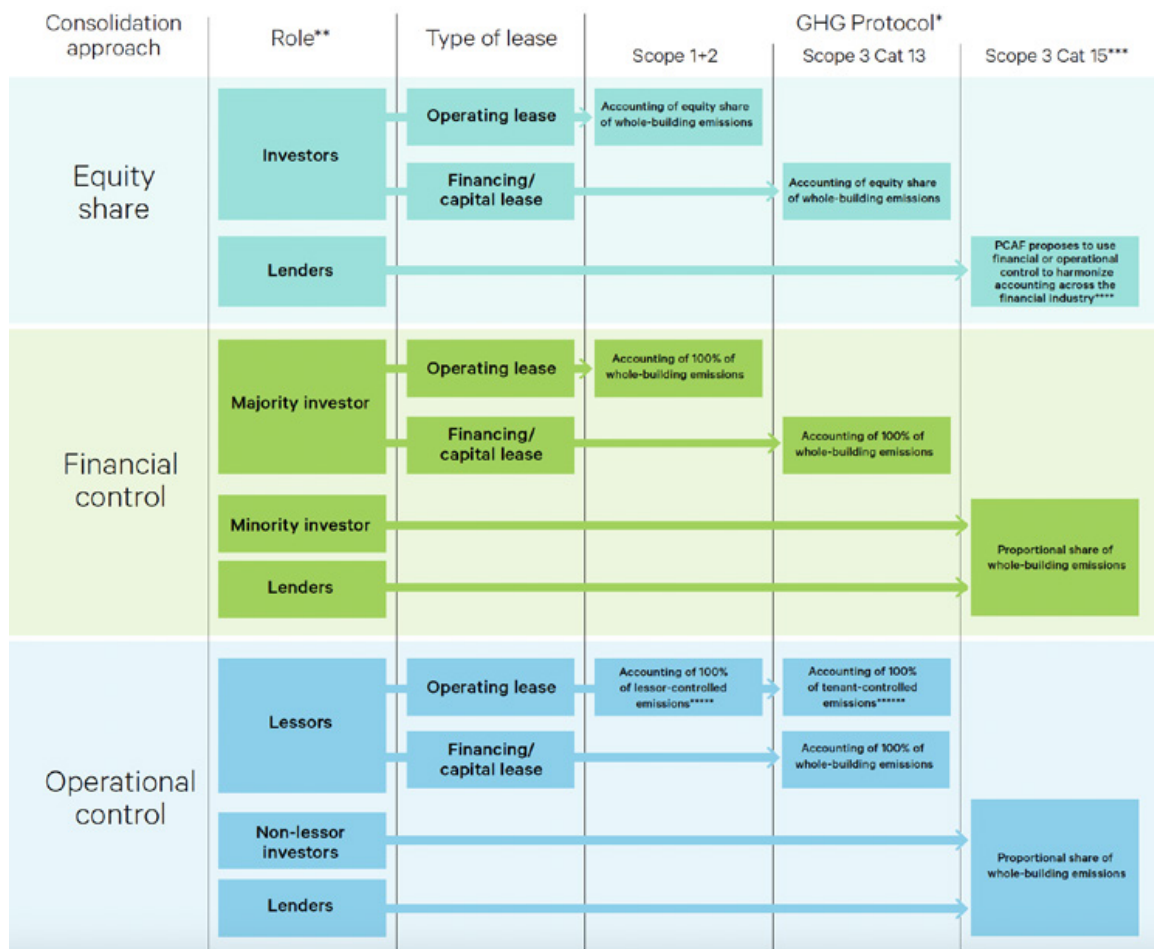
Regarding the definition of a net-zero (or zero) operational carbon emission building, most existing definitions are aligned around two key components: (1) the building needs to be very energy efficient; and (2) the remaining energy that is required comes from on-site and/or off-site renewable sources. About the latter, the International Energy Agency (IEA) also recognises the concept of a zero-carbon-ready building, which, in addition to being highly energy efficient, uses an energy supply that will be fully decarbonised by 2050 at the latest. What constitutes a very energy efficient building is, in general, not further specified and will depend on the type of building and its geographic location.

It is not the intention of the Alliance to produce yet another definition of what constitutes a net-zero building but rather leverage the existing definitions from credible and well-recognised sources to support its members in their efforts to decarbonise their real estate portfolios.

Carbon accounting of Real Estate Assets

B83. Regarding real estate assets, the delineation of organisational boundaries and the choice of consolidation approach (equity share, operational control or financial control) have significant influence on how the accounting and reporting of carbon emissions (PCAF 2023).

18 Examples would include definitions from the European Commission, International Energy Agency (IEA), World Green Building Council, Organisation for Economic Cooperation and Development (OECD) and Global Alliance for Buildings and Construction.



B84. **Figure VII:** Comparison of equity share, financial control and operational control approach (PCAF 2023)

B85. To align with PCAF, members **should** use the operational control approach when accounting carbon emissions in their directly held real estate portfolios (fully or jointly owned). Applying the operational control approach on asset classes such as listed equities or corporate fixed income would result in the investor (or bank) accounting for the company’s emissions as financed emissions (i.e. Scope 3 category 15 emissions) as they do not have operational control. However, within directly held real estate the application of the operational control will, depending on the role of the investor, distribute emissions across all emission scopes.

B86. The GHG Protocol defines operational control as having “...full authority to introduce and implement its operating policies at the operation”. In the context of building-related emissions, this could be seen from an efficiency-based control perspective or from a consumption-based control perspective. An efficiency-based control would argue that the landlord has control over all building-related emissions as it often has a far-reaching mandate to introduce efficiency measures across the whole building, also including tenant spaces. These measures can relate to examples such as HVAC replacement, improving the building envelope, installing a new boiler, and so forth. A consumption-based control perspective, in contrast, looks at the actual consumption, split either by source/contract or by floor space.

Table VII: Four examples of how to account for building-related emissions for different investment types

The examples below are based on the following assumptions:		
Building type:	Office	
Common space:	Yes	
Tenant space:	Yes	
Market value:	EUR 20 million	
CO₂e emissions, district heating (DH):	500kg per year	
CO₂e emissions, electricity (elec.):	500kg per year	
Consolidation approach:	Operational control, source-based split (in this example, it is assumed that the owner/controlling partner has control of heating across both common and tenant spaces and electricity in common spaces)	

Investment type	Consolidation	Attribution
Directly held (equity) 1 investor owns 100% Equity-only financing	Investor/owner has control over: 100% of DH CO ₂ e emissions 10% of elec. CO ₂ e emissions	Investor/owner: 500kg DH CO ₂ e emissions as Scope 2 50kg elec. CO ₂ e emissions as Scope 1/2 450kg elec. CO ₂ e emissions as Scope 3 (cat 13)
Directly held (leveraged) 1 investor owns 100% 50% loan-to-value ratio	Investor/owner has control over: 100% of DH CO ₂ e emissions 10% of elec. CO ₂ e emissions Bank has control over: 0% of DH CO ₂ e emissions 0% of elec. CO ₂ e emissions	Investor/owner: 500kg DH CO ₂ e emissions as Scope 2 50kg elec. CO ₂ e emissions as Scope 1/2 450kg elec. CO ₂ e emissions as Scope 3 (cat 13) Bank: 250kg DH CO ₂ e emissions as Scope 3 (cat 15) 250kg elec. CO ₂ e emissions as Scope 3 (cat 15)
Joint venture (equity) Four investors with 25% each Equity-only financing	Controlling partner has control over: 100% of DH CO ₂ e emissions 10% of elec. CO ₂ e emissions Non-controlling Partners have control over: 0% of DH CO ₂ e emissions 0% of elec. CO ₂ e emissions	Controlling partner: 500kg DH CO ₂ e emissions as Scope 2 50kg elec. CO ₂ e emissions as Scope 1/2 450kg elec. CO ₂ e emissions as Scope 3 (cat 13) Non-controlling partners: 125kg DH CO ₂ e emissions as Scope 3 (cat 15) 125kg elec. CO ₂ e emissions as Scope 3 (cat 15)

Investment type	Consolidation	Attribution
Joint venture (leveraged) Four investors with 25% each Equity-only financing	Controlling partner has control over: 100% of DH CO ₂ e emissions 10% of elec. CO ₂ e emissions Non-controlling partners have control over: 0% of DH CO ₂ e emissions 0% of elec. CO ₂ e emissions Bank has control over: 0% of DH CO ₂ e emissions 0% of elec. CO ₂ e emissions	Controlling partner: 500kg DH CO ₂ e emissions as Scope 2 50kg elec. CO ₂ e emissions as Scope 1/2 450kg elec. CO ₂ e emissions as Scope 3 (cat 13) Non-controlling partners: 125kg DH CO ₂ e emissions as Scope 3 (cat 15) 125kg elec. CO ₂ e emissions as Scope 3 (cat 15) Bank: 250kg DH CO ₂ e emissions as Scope 3 (cat 15) 250kg elec. CO ₂ e emissions as Scope 3 (cat 15)

Pathway selection and required decarbonisation

B88. The [Global Pathways](#) developed by the Carbon Risk Real Estate Monitor (CRREM) provide national decarbonisation pathways aligned with reaching net-zero emissions by 2050 with no or limited overshoot. The pathways are presented on an annual basis up to 2050 for each respective country and different type of building. This level of granularity enables members to set their targets either based on a global decarbonisation pathway or construct a customised decarbonisation pathway that reflects the geographic and building type specific distribution of their portfolio. Decarbonisation targets will differ depending on the type of building and its geographic location.

B89. **Table VIII:** Target option 1—Carbon intensity

Metric	Benchmark	Method
kgCO ₂ e/sqm/annum, or tCO ₂ e/sqm/annum	CRREM 1.5°C pathways	Sectoral Decarbonisation Approach (SDA)

B90. For intensity-based targets, members

- **Shall** use kilogram (or tons) of carbon emissions per square meter and year as the target metric. Targets are set on portfolio level using asset level data to aggregate.
- **Should** use CRREM Global pathways as benchmark and, to the extent possible, the benchmark **should** be constructed by applying the CRREM pathways in such way that it creates an appropriate reflection of the portfolio assets’ geographic and building type specific distribution (see section 3.2). Other pathways **may** be used and if so, the pathway **shall** meet the criteria in being a science-based 1.5°C pathway with no or limited overshoot. Members **shall** disclose which benchmark is being used.
- **Should** use the Sectoral Decarbonisation Approach (SDA) to calculate and set the target as, among other things, it allows for different starting points.
- **Should** use the International Property Measurement Standard (IPMS) standard, specifically IMPS2, when determining the floor area, but **may** use other standards. Members **should** use one standard consistently across all assets in scope of the target setting. Members **shall** disclose which floor area measurement standard that is used.

B91. **Table IX:** Target option 2—Absolute emissions

Metric	Benchmark	Method
kgCO ₂ e/annum, or tCO ₂ e/annum	1.5°C pathway with no or limited overshoot	Absolute reduction

B92. For absolute targets, members

- **Shall** use an absolute reduction method with kilograms (or tons) of carbon emissions as the target metric. Targets are set on portfolio level using asset level data to aggregate.
- **Shall** use a pathway that meets the overall Alliance criteria in being a science-based 1.5°C pathway with no or limited overshoot. The CRREM Pathways can be used by applying the percentage reduction in the carbon intensity between the target year and the base year. If CRREM pathways are used, the benchmark **should** be constructed by applying the CRREM pathways in such a way that it creates an appropriate reflection of the portfolio assets’ geographic and building type specific distribution. Members **shall** disclose which benchmark is being used.

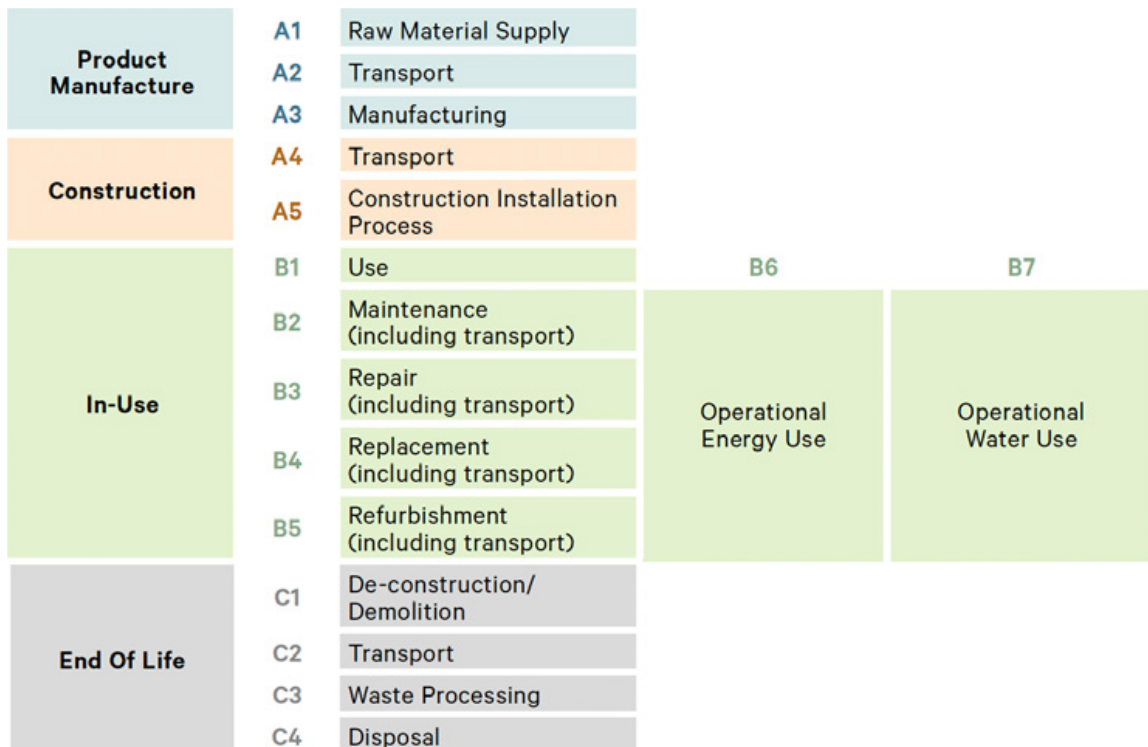
Energy efficiency

B93. Reducing energy consumption and improving energy efficiency is a central component and lever in reducing the emissions from a building. Although a certain level of decarbonisation can be achieved without an explicit focus on reducing energy demand—for example through grid decarbonisation, use of Renewable Energy Certificates (RECs) and on-site renewable energy installations—improving the building’s energy efficiency must be a priority in all decarbonisation strategies. Improving energy efficiency in the built environment is also an important contributor in reaching net zero globally. Energy efficiency is key to driving down operational energy demand and in turn operational carbon emissions. According to IEA, the energy intensity in the buildings sector needs to drop five times more quickly over the next ten years than it did in the past five to be in line with the net-zero Emissions by 2050 Scenario. This means that the energy intensity (kWh/sqm) must be 35 per cent lower in 2030 compared to 2020 (IEA 2021). The importance of reducing energy consumption is also evident in the EU-Taxonomy where primary energy constitutes the criterion for substantial contribution to climate change mitigation in activities related to real estate.

Improving energy efficiency will be an important component for all members in their efforts to transition their real estate portfolios to net zero emissions.

Embodied carbon

B94. Embodied Carbon’ emissions of an asset are the total GHG emissions and removals associated with materials and construction processes throughout the whole life cycle of an asset (see Figure 2-1 on P.17 of [Technical Guidance](#) by PCAF, CRREM, and GRESB).



B95. **Figure VIII:** Building life-cycle stages (PCAF 2023)

- B96. Together with operational carbon, embodied carbon completes the whole life cycle emissions of a building. Embodied carbon can be divided into three phases; upfront carbon, in-use carbon, and end-of-life carbon. Upfront carbon is released during the manufacturing and construction of the building (extraction of material, manufacture of building components, transportation of material and components to site, construction), in-use carbon is released through the maintenance of the building (repairs, refurbishments) and end-of-life carbon refers to the carbon released when the building is demolished. Embodied carbon accounts for a significant share of the whole-life-cycle emissions for most buildings, especially in regions with highly decarbonised energy sources. It is likely that embodied carbon becomes even more significant as efforts to reduce operational carbon are implemented, such as the decarbonisation of the grid and energy efficiency measures.
- B97. As the accounting methodology and data for embodied carbon emissions continue to develop, the Alliance recommends members to keep abreast with evolving developments and to develop capabilities to track embodied carbon emissions where feasible.

5.4 Sovereign debt

The role of sovereign debt in portfolios

- B98. Sovereigns (governments) have a large role to play in climate change mitigation and adaptation efforts. Sovereign debt is one way in which asset owners are linked with sovereigns. Sovereign debt is a significant asset class for many asset owners and therefore be included in the decarbonisation considerations of an investment portfolio. However, investing in sovereign debt is different from investing in corporations or real estate through debt or equity. From a balance sheet perspective, sovereign debt is essential for many asset owners to match their liabilities. There are often also regulatory requirements to invest in sovereign debt. This makes decarbonising a sovereign debt portfolio more challenging compared to a corporate bond or equity portfolio.
- B99. Sovereign debt portfolios also highlight the important role governments have in enabling asset owners to succeed in their portfolio decarbonisation. The relationship of portfolio decarbonisation with sovereigns is, at least, twofold: i) a sovereign portfolio relies on countries not only to deliver expected emission reductions but also; ii) provide the right regulatory framework to allow for and support the use of suitable (lower-carbon) alternatives to meet risk and other legal requirements.

Guiding design philosophy

- B100. The Alliance is supportive of a just and inclusive transition to low carbon economies. The Alliance also acknowledges that, in general, emerging markets will be more impacted by climate change, while having contributed less to cumulative emitted GHGs and have fewer resources available to mitigate and/or adapt for climate change. This position is also reflected in the Paris Agreement through the 'common but differentiated responsibilities' principle.

As such, the Alliance aims to design its sovereign metrics to have no unintended bias that may result in investments being channeled away from emerging markets.

To support this, a more holistic view covering both production and consumption emissions is needed; production emissions are generally higher for emerging markets and consumption emissions are generally higher for developed markets.

At this time, however, data for consumption metrics are not always readily available. To continue to make progress towards a net-zero world, members **shall** use production emissions in line with PCAF’s standards and **should** use consumption-based emissions, when data are available.

Scope definition

B101. The accounting methodology below is based on PCAF’s Global GHG Accounting and Reporting Standard Part A—Financed Emissions. The GHG Protocol’s definition of Scope 1, 2, and 3 emissions that was initially developed for classification of corporate emissions is used analogously for sovereigns (see below table). In the absence of a breakdown of Scope 2 and 3 emissions, these may be reported as one combined number. However, Scope 1 emissions **shall** always be reported stand-alone.

B102. **Table X:** Definition of Scope 1, 2 and 3 for sovereigns

Scope 1	Scope 2	Scope 3
Includes domestic GHG emissions from sources located within a country’s territory.	Includes GHG emissions occurring as a consequence of the domestic use of grid-supplied electricity, heat, steam and/or cooling, which is imported from another territory.	Includes emissions that are attributable to non-energy imports as a result of activities taking place within a country’s territory.

B103. Under this approach, a sovereign is seen primarily as a national territory, and its direct Scope 1 GHG emissions are attributable to emissions generated within its boundaries (production emissions as defined by UNFCCC).

Scope 2 are emissions attributable to the purchase (in this case import) of electricity, steam, heat and cooling from outside the country territory.

Finally, Scope 3 emissions are related to all other (non-energy) imports from goods or services from outside the country territory as a result of activities taken place in the country territory.¹⁹ On Land Use, Land Use Change and Forestry (LULUCF) emissions, as they are not consistently accounted by sovereigns or their data providers, they are often excluded from reported production emissions.

¹⁹ Note, to the best knowledge of the Alliance Scope 2 and 3 data is frequently only available for OECD countries.

Definition production and consumption-based emissions

B104. The Alliance is following PCAFs definition of production and consumption emissions.

- Production emissions: domestically produced emissions including domestic consumption and exports
- Consumption emissions: includes the demand side of sovereign emissions by accounting for consumption patterns and trade effects

B105. The relation between production emissions and consumption emissions can be defined using PCAF's methodology:

$$\textit{Consumption Emissions} = \textit{Production emissions} - \textit{Exported emissions} + \textit{Imported emissions}$$

Scope 1 emissions align with production emissions and the territorial emissions approach defined by UNFCCC, while Scope 2 emissions align with energy-related imported emissions. Meanwhile, Scope 3 emissions are associated with all other (non-energy) imports from outside of the country territory. The relationship between the three can be summarised into the following equation:

$$\textit{Consumption Emissions} = \textit{Scope 1} + \textit{2} + \textit{3} - \textit{Exported emissions}$$

Rationale for attribution

B106. The financial institution's share of emissions shall be proportional to the size of its exposure to the borrower's total value. Applying this rationale to countries is challenging because there is no appropriate measurement of a sovereign's financing sources (c.f. enterprise value for corporations). Outstanding sovereign debt is not a fair indication of a country's total value, as sovereigns may finance themselves through both debt and tax revenues. Hence, PCAF has decided for comparison reasons to require an alternative approach that allows for emissions attribution to be linked to the real-economy impact. For this reason, it takes GDP (i.e. the value of a country's output) adjusted for Purchase Power Parity (PPP) as a proxy for the 'value of the country'.

B107. There is no simple causal relationship between a financial institution's investment and a sovereign's GDP. Empirical evidence suggests that while there is limited interdependence between sovereign debt and emissions, a country's output production is linked more closely to the generated emissions. Therefore, as financial institutions' funds typically spur economic and therefore GDP growth, this implies an impact on production processes and therefore emissions.

The importance of assessing sovereign debt

B108. Countries' emissions represent all emissions no matter how they are financed or whether they are generated by corporations, individuals, or other enterprises domiciled there. Relying solely on emissions data will therefore provide an incomplete understanding of a sovereign's climate alignment.

B109. Understanding the country's policies and alignment may be prudent as an indicator of the sovereign's actions in creating an environment to support and fund transitional projects, whether these be directed at new clean energy generation, the decarbonisation of existing industry, or other innovations such as direct carbon capture.

B110. Sovereign governments rely on asset owners to invest in their countries. This mutual relationship introduces the opportunity for Alliance members to engage with sovereigns and creates the potential for a broader conversation.

Data sources and scorecard assessment methodology

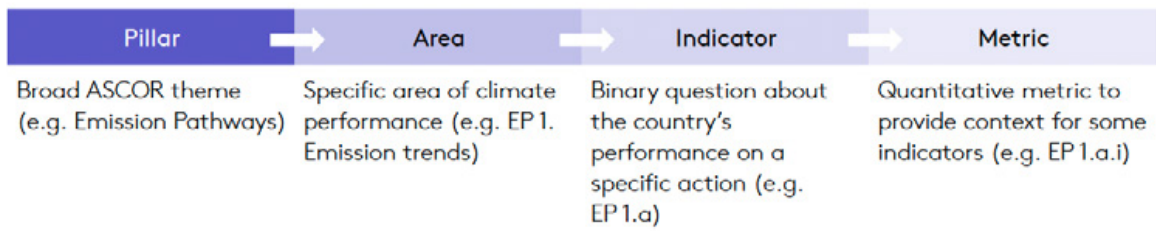
B111. The Assessing Sovereign Climate-related Opportunities and Risks (ASCOR) project is a free, open-sourced investor framework and database that seeks to assess the climate action and alignment of sovereign bond issuers. It is developed by an international coalition of asset owners and asset managers in collaboration with an academic partner, the Transition Pathway Initiative. The methodology was finalised in November 2023, with data from a pilot study of 25 countries published in December 2023. Starting in 2024 the ASCOR project established the aim of annually updating its database with assessments of sovereign-debt-issuing countries, as well as expanding its country coverage and making its assessments publicly available online.

B112. The Alliance believes that using the framework and data made available through the ASCOR project will help create consistency and harmonisation on the methodology for climate assessment of sovereign debt holdings for members. As the same time, it will reduce the burden on data aggregation through use of the ASCOR database. The ASCOR database allows investors to assess governments' climate-related commitments, their climate-relevant policy frameworks, and the actions that they are taking to ensure that the benefits of both a low-carbon transition and of climate adaptation are shared amongst their citizens.

B113. The framework is composed of three pillars containing different themes and sub-categories, each of which includes 'Yes' or 'No' indicators and, where relevant, complementary quantitative metrics.

- Emission pathways (EP): This pillar considers historical emission trends and the alignment of forward-looking national emission reduction targets with international climate goals.
- Climate policies (CP): This pillar considers national policymaking efforts to mitigate emissions, adapt to climate change, and ensure a just transition.
- Climate Finance (CF): This pillar considers the financing that countries may need in order to implement their climate goals. These indicators are critical given that many countries facing the greatest climate-related risks currently have insufficient access to financing.

Elements of ASCOR framework structure



B114. **Figure IX:** Elements of ASCOR framework structure | Source: ASCOR 2023

B115. By creating an equal-weighted scoring system on the area level by scoring each indicator in a binary method (i.e. “Yes” equals to “1”, and “No” equals to “0”, and excluding “No data”, “Exempt” and “Not applicable”) in the ASCOR framework, the Alliance aims to arrive at a quantitative aggregate to be used as a sovereign’s score. The portfolio score is calculated using the market value-weighted average of each sovereign score.

B116. While not required for reporting to the Alliance, members are encouraged to utilise the underlying data made available by ASCOR in order to make an informed judgment of each sovereign.

B117. For more detailed data relating to sovereign emissions, it is recommended that members consider the following sources:

- PRIMAP by Potsdam Institute (PIK)
- Climate Change Performance Index
- Climate Action Tracker
- Climate NDC Policy tool
- Climate Watch
- OECD Climate Action Dashboard
- Global Carbon project

6. Policy

B118. A supportive policy environment is critical to the viability of a net-zero transition. Without decisive action by governments to reduce emissions, there will remain insufficient market incentives to allocate capital in line with a 1.5°C trajectory.

The private sector, including investors, can play an important role in raising government awareness and making the business case for getting back on track with the Paris Agreement and achieving climate neutrality by the middle of the century.

Asset owners are in a unique position in the financing value chain (especially those setting portfolio targets) and therefore being dependent on change in policy and the real economy. The Alliance policy track seeks to amplify investor voices to realise these goals.

Policy track working methods

B119. The policy track will operate primarily through:

- Direct engagement with politicians/officials of target countries, including on accounting and audit standards and practices;
- Calling for standards that ensure integrated reporting;
- Private letter writing to officials from Alliance members;
- Attendance and participating in UNFCCC processes (i.e. participation with the Standing Committee for Finance UNFCCC COP engagements)
- Leveraging multilateral platforms (e.g. UNSC office, the Coalition of Finance Ministers for Climate Action) and key moments (e.g. World Bank meetings/ Climate Action Weeks, Petersburg Dialogue, PRI in Person, IMF annual meetings) to represent our Alliance ambition.
- Sharing information with Alliance members to consider signing investor statements, where appropriate;
- Letter writing to target countries or multilateral fora; and
- Media activities.

B120. The Alliance is committed to policy advocacy as a necessary means to achieve net zero by 2050. Individual members are encouraged to engage governments to increase ambition on decarbonisation, for example by participating in The Investor Agenda's annual Global Investor Statement to Governments on the Climate Crisis. While the Alliance establishes global policy positions and advocacy efforts, more

contextual policy engagement in specific markets are also encouraged as the Alliance expands in its geographic coverage.

- B121. The Alliance policy track has developed a strategy to work on three priorities:
- Advocating for the alignment of interim targets and transition plans with the net zero by 2050 goals;
 - Raising the ambition of sector policies and regulation (real economy and financial sector) to promote the transition; and
 - Implementing mandatory climate reporting and transition plans for companies.

- B122. In the execution of this strategy, the track leverages positions developed in other Alliance tracks, such as when it relates to disclosure recommendations, or on engagement where it pertains to existing sectoral policies that hinder the achievement of members' ambition in the real economy.

The Alliance also advocates for financial market regulation as well as support frameworks that enable financial institutions to finance the net-zero transition; e.g. disclosure requirements in line with TCFD recommendations, the development of country-specific transition plans, and the raising of awareness regarding the impact of climate risks.

Aligning 2030 emissions reduction targets with net zero by 2050 goals and pathways

- B123. The new round of nationally determined contributions (NDC) submissions required under the Paris Agreement has seen enhanced commitments and emissions reduction plans. However, NDCs continue to fall short of putting the world on track for 1.5°C. Maximising opportunities to further advance NDCs and national plans is a key goal for the policy track.

Targeted goals

- Commitment to enhance current NDCs with 2025 and 2030 targets that are in line with a trajectory to achieve net-zero GHGs by 2050 or sooner from developed countries; and
- Implement net-zero commitments and trajectories via best practice national policy mechanisms, including the enshrining of the net-zero commitment in climate legislation;
- Intermediate targets;
- An independent body to monitor and advise government; and
- Appropriate carbon pricing regimes as part of a climate policy mix.

Sector policies to promote transition

B124. Sector policies are a key component of effective climate policy. As such, the Alliance will advocate for sector policies and regulation consistent with net-zero emissions by 2050 or sooner from developed and large emitter countries, complemented by a commitment to a just transition.

Targeted goals

- Elimination of direct and indirect fossil fuel subsidies
- Policy measures (via regulation or carbon pricing or both) to deliver the national phase-out of fossil fuel technologies; e.g. coal-fired power and coal mining, and the sale of new internal combustion engine vehicles
- No-deforestation, no-peat and no-exploitation (NDPE)²⁰
- Support for enhancement of natural capital, and a net-zero pathway for agriculture
- Support for and potentially redirecting of subsidies for scale-up of new technologies that will provide solutions in hard-to-abate sectors; e.g. CCS and green hydrogen
- Sectoral net-zero policies for key economic sectors—namely, energy, power, industry, agriculture, automotive, aviation, and shipping and
- Commitment to develop granular short-, medium-, and long-term plans for zero-carbon infrastructure.

Promotion of mandatory climate reporting and transition plans

B125. The Alliance has provided, and will continue to provide, investor support for meaningful reporting and net-zero transition plans in advanced markets. The Alliance published A Tool for Developing Credible Transition Plans (NZAOA 2023c) to aid members in developing their own transition plans and assess the transition plans of asset managers and investee companies.

²⁰ Refers to no exploitation of the rights of Indigenous peoples, workers, and local communities.

Overview of content and content updates through TSP editions

Background document	Paragraph	V1	V2	V3 + Annex	V4
Introduction	B1–B2				
1 The Alliance’s Theory of Change	B3–B28	x			x (updated)
2 The scientific basis for establishing net-zero targets					
2.1 Scenario pathways	B29–B31			x	
2.2 Real Economy Progress	B32–B38	x			
2.3 Just Transition	B39–B47			x	x (updated)
3 Background information to engagement targets					
3.1 Future of Investor Engagement	B48–B49				x
3.2 Comparison of TSP against CA100+ criteria	B50–B54		x		
4 Background information to sector targets					
4.1 Comparison of carbon emission metric	B55	x			
4.2 Sector Pathway comparison	B56–B70	x	x		
4.3 Financial sector classification	B71	x			x (updated)
5 Background information to sub-portfolio targets					
5.1 Comparison absolute and intensity metrics	B72–B74	x			
6.2 Infrastructure	B75–B81			x	
6.3 Real Estate	B82–B97			x	x (updated)
6.4 Sovereign Debt	B98–B116			x	x (updated)
7 Policy	B117–B124			x	x (updated)

References

- Assessing Sovereign Climate-related Opportunities and Risks (ASCOR): ascorproject.org
- Assessing Sovereign Climate-related opportunities and Risks (2023). ASCOR framework: methodology note. transitionpathwayinitiative.org/publications/uploads/2023-ascor-framework-methodology-note
- CA100+ Net Zero Company Benchmark: Structures and methodologies: climateaction100.org/net-zero-company-benchmark/methodology/
- Climate Action Tracker: climateactiontracker.org
- Climate Change Performance Index: ccpi.org
- Climate NDC Policy tool: ndcpartnership.org/knowledge-portal/climate-toolbox
- Climate Watch: climatewatchdata.org
- Energy and Climate (2024). Net Zero Scorecard. eciu.net/netzerotracker
- Global Carbon project: globalcarbonproject.org
- International Energy Agency (2021). Net Zero by 2050—A Roadmap for the Global Energy Sector. iea.blob.core.windows.net/assets/deebef5d-0c34-4539-9d0c-10b13d840027/NetZeroBy2050-ARoadmapfortheGlobalEnergySector_CORR.pdf
- Intergovernmental Panel on Climate Change (2022). Climate Change 2022: Impacts, Adaptation and Vulnerability. Sixth Assessment Report. ipcc.ch/report/sixth-assessment-report-working-group-ii/
- International Labour Organization (2015). Guidelines for a just transition towards environmentally sustainable economies and societies for all. ilo.org/global/topics/green-jobs/publications/WCMS_432859/lang-en/index.htm
- MacLeod, M. & Park, J. (2011). Financial Activism and Global Climate Change: The Rise of Investor-Driven Governance Networks. *Global Environmental Politics*, 11 (2), pp.54–74. DOI: 10.1162/GLEP_a_00055.
- Marti, E., Fuchs, M., DesJardine, M., Slager, R. & Gond, J. (2023). The Impact of Sustainable Investing: A Multidisciplinary Review. *Journal of Management Studies*, Article joms.12957. DOI: 10.1111/joms.12957.
- Net-Zero Asset Owner Alliance (2021). Inaugural Target-Setting Protocol. unepfi.org/publications/inaugural-2025-target-setting-protocol/
- Net-Zero Asset Owner Alliance (2022a). Call to Action to Private Market Asset Managers. unepfi.org/wordpress/wp-content/uploads/2022/11/NZAOA_Call-to-Action-to-Private-Market-Asset-Managers_final.pdf

Net-Zero Asset Owner Alliance (2022b). The Future of Investor Engagement: A Call for Systematic Stewardship to Address Systemic Climate Risk. [unepfi.org/industries/the-future-of-investor-engagement-a-call-for-systematic-stewardship-to-address-systemic-climate-risk/](https://www.unepfi.org/industries/the-future-of-investor-engagement-a-call-for-systematic-stewardship-to-address-systemic-climate-risk/)

Net-Zero Asset Owner Alliance (2022c). Call on Policymakers to Support Scaling Blended Finance: [unepfi.org/industries/net-zero-asset-owner-alliance-call-on-policymakers-to-support-scaling-blended-finance/](https://www.unepfi.org/industries/net-zero-asset-owner-alliance-call-on-policymakers-to-support-scaling-blended-finance/)

Net-Zero Asset Owner Alliance (2022d). Position Paper on Governmental Carbon Pricing: [unepfi.org/themes/net-zero-asset-owner-alliance-position-paper-on-governmental-carbon-pricing/](https://www.unepfi.org/themes/net-zero-asset-owner-alliance-position-paper-on-governmental-carbon-pricing/)

Net-Zero Asset Owner Alliance (2023a). Elevating Asset Manager Net-Zero Engagement Strategies. [unepfi.org/industries/elevating-asset-manager-net-zero-engagement-strategies/](https://www.unepfi.org/industries/elevating-asset-manager-net-zero-engagement-strategies/)

Net-Zero Asset Owner Alliance (2023b). Policy Engagement Guidelines. [unepfi.org/industries/investment/policy-engagement-guidelines/](https://www.unepfi.org/industries/investment/policy-engagement-guidelines/).

Net-Zero Asset Owner Alliance (2023c). A Tool for Developing Credible Transition Plans: Public edition for asset owner pilot-testing. [unepfi.org/industries/investment/developing-credible-transition-plans-implementation-tool-for-asset-owners/](https://www.unepfi.org/industries/investment/developing-credible-transition-plans-implementation-tool-for-asset-owners/).

Net-Zero Asset Owner Alliance (2023d). Understanding the Drivers of Investments Portfolio Decarbonisation. [unepfi.org/industries/understanding-the-drivers-of-investment-portfolio-decarbonisation/](https://www.unepfi.org/industries/understanding-the-drivers-of-investment-portfolio-decarbonisation/)

Organisation for Economic Co-operation and Development. Climate Action Dashboard: oecd.org/climate-action/ipac/dashboard?country=DEU

Paris Agreement (2015). unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf

Principles for Carbon Accounting Financials (2022). Financed Emissions—The global GHG Accounting & Reporting Standard Part A. carbonaccountingfinancials.com/standard

Principles for Carbon Accounting Financials (2023). Accounting and Reporting GHG Emissions from Real Estate Operations—Technical Guidance for the Financial Industry V1.0. carbonaccountingfinancials.com/files/downloads/ghg_emissions_real_estate_guidance_1.0.pdf

PRIMAP by Potsdam Institute (PIK): zenodo.org/records/7727475

Teske, S., Niklas, S., Nagrath, K., Talwar S., Atherton, A. & Guerrero Orbe, J., (2020). Sectoral pathways and Key Performance Indicators: aluminium, chemical, cement, steel, textile & leather industry, power utilities, gas utilities, agriculture, forestry, the aviation and shipping industry, road transport, and the real estate & building industry. [unepfi.org/wordpress/wp-content/uploads/2022/05/UTS_Limit-global-warming_Sectoral-Pathways-and-Key-KPIs.pdf](https://www.unepfi.org/wordpress/wp-content/uploads/2022/05/UTS_Limit-global-warming_Sectoral-Pathways-and-Key-KPIs.pdf)

Teske, S., Rispler, J., Niklas, S., Feenstra, M., Mohseni, S., Talwar, S. & Miyake, S. (2023). Net-zero 1.5 °C sectorial pathways for G20 countries: energy and emissions data to inform science-based decarbonization targets. link.springer.com/article/10.1007/s42452-023-05481-x

Transition Pathway Initiative: transitionpathwayinitiative.org

United Nations Development Programme (2016). Gender and Climate Change—Gender and climate finance. undp.org/sites/g/files/zskgke326/files/publications/UNDP%20Gender%20and%20Climate%20Finance%20Policy%20Brief%205-WEB.pdf

United Nations Framework Convention on Climate Change (2023). Conference of the Parties serving as the meeting of the Parties to the Paris Agreement, Fifth session.

World Resources Institute (2019). The Greenhouse Gas Protocol—A corporate Accounting and Reporting Standard. Revised Edition. ghgprotocol.org/corporate-standard



UN-convened Net-Zero Asset Owner Alliance

unepfi.org/net-zero-alliance/