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Asset Owner Alliance

Target Setting Protocol

Third edition

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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.¹ 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.

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Antitrust and regulatory disclaimer

The Alliance and its members are committed to comply with all laws and regulations that apply to them. This includes, amongst others, antitrust and other regulatory laws and regulations and the restrictions on information exchange and other collaborative engagement they impose. Further, each member is responsible for setting their own individual targets. Progress reports shared with the Alliance Secretariat are not shared between members. Any information shared with members is done so on an anonymised basis, and no transaction level information is shared.

¹ SBTi, PCAF, PAII, CREEM, 2dii were explored

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Acronyms

AO	Asset Owner
AOA	Asset Owner Alliance
AR6	Sixth Assessment Report (of the Intergovernmental Panel on Climate Change)
BECCS	Bioenergy with carbon capture and storage
CAPEX	Capital expenditures
CA100+	Climate Action 100+
CML	Commercial Mortgage Lending
CO₂e	Carbon Dioxide Equivalent
COP28	28 th United Nations Climate Change Conference of the Parties
CREL	Commercial Real Estate Lending
CRREM	Carbon Risk Real Estate Monitor
DFI	Development Finance Institution
ESG	Environmental, Social and Corporate Governance
ETC	Energy Transition Commission
EPC	Energy Performance Certifications
EV/EVIC	Enterprise Value/ Enterprise Value Including Cash
FI	Financial Institution
GHG	Greenhouse Gas
GICS	Global Industry Classification System
IEA	International Energy Agency
IGCC	Investor Group on Climate Change
IIASA	International Institute of Applied Systems Analysis
IIGCC	Institutional Investors Group on Climate Change
IPCC	Intergovernmental Panel on Climate Change
LTV	Loan-to-Value Ratio
MRV	Monitoring Reporting and Verification
M&A	Mergers & Acquisition
NACE	Statistical Classification of Economic Activities in the European Community
NDC	Nationally Determined Contribution
NDPE	No deforestation, no peat, no exploitation policies
OECM	One Earth Climate Model
OGCI	Oil and Gas Climate Initiative
PACTA	Paris Agreement Capital Transition Assessment

PAII	Paris Aligned Investing Initiative
PCAF	Platform for Carbon Accounting Financials
PIK	Potsdam Institute for Climate Impact Research
PRI	Principles for Responsible Investment
REITs	Real Estate Investment Trusts
RMI	Rocky Mountain Institute
SBTI	Science Based Targets Initiative
SDA	Sector Decarbonisation Approach
SDG	Sustainability Development Goals
SSP	Shared Socioeconomic Pathways
SSP1	“Sustainability—Taking the Green Road scenario
TPI	Transitions Pathway Initiative
UNEP	United Nations Environment Programme
UNEP FI	United Nations Environment Programme Finance Initiative
UTS	University of Technology Sydney
WEF	World Economic Forum
WEF MPP	World Economic Forum Mission Possible Platform
WTE	Waste to energy
WRI	World Resources Institute
WWF	World Wildlife Fund



The third Alliance Target-Setting Protocol

The Alliance is pleased to launch the third edition of the Alliance Target Setting Protocol this January 2023. This version includes updates which covers Just Transition, Carbon Removal, IPCC Sixth Assessment Report (AR6) updates, Sovereign Bond accounting, private assets and Commercial Real Estate Lending (CREL).

Building on the previous editions, Alliance members of the MRV track developed the content throughout 2022, and on 12th October 2022, released the [new content for public consultation](#). The Alliance sincerely appreciates the input it received during the consultation and has since revised this Protocol based on the input received.

The Alliance aims to continue to enhance the depth and coverage of this Protocol. The public may expect an updated edition to be released on a regular basis.

As one of the earliest and cross-cutting outputs of the Alliance, the Inaugural Protocol covered a range of content such as governance, collaborations with partners, and background research. To support our members, we have continued to work to reduce the length of the Protocol again and focused the third edition of the Protocol on content that is of direct relevance to the target setting process. Accompanying documents on governance and collaborations can be found on the Alliance website.

This Protocol is intended to be used in tandem with the Annex. The Annex describes relevant metrics, scenario comparisons and sector classifications which are essential in target setting.

Content may be reduced for length, but previous versions of the Protocol remain valid for sections that are not updated in current editions. It is important to note that it is not the ambition of the Alliance to create a market standard—this will be done by standard setters and regulators in the next years (which may result in different market standards per region).

The previous edition of the Protocol can be found [here](#) and [here](#).

Executive summary

The Sixth Assessment Report (AR6) of the Intergovernmental Panel on Climate Change (IPCC) has highlighted that the likelihood of reaching 1.5°C is decreasing with each passing year of insufficient action. However, the Alliance remains steadfastly committed to achieving net zero in order to pursue the 1.5°C objective and calls on all governments, corporations, entities, and individuals to act with urgency to limit emissions.

The Alliance Target Setting Protocol (Protocol) sets out the Alliance’s approach to target setting and reporting. The first edition of this Protocol focused on the period 2020–2025. The second edition outlined the ambition towards 2030. This third version reflects the latest scientific information, expands methodological coverage across asset classes, and provides further detail against all target types. To ensure transparency and robustness, new content in this document has been circulated for public comment prior to final publication.

The authors acknowledge that asset owners have fiduciary duties that require them to act in the interests of beneficiaries, clients, and members, to act prudently, and to exercise care, skill, and caution in pursuing an overall investment strategy. Fiduciary duty requires asset owners to invest on the basis of credible information, analysis, scenarios, and models, and to retain the flexibility to adapt in response to changing circumstances.²

The Alliance recommends members use science-based ranges, targets, and methodologies in their strategic planning to meet their net-zero commitments, noting that data and methodological constraints persist. The Alliance supports its members to develop a deep and practical knowledge of scenarios derived by the IPCC. Members are individually responsible for employing the recommended science-based criteria outlined herein or explaining to the Alliance the rationale for an alternative target or methodology from the range of options discussed below. The Alliance uses the following terminology:

- **Shall** means that a process is binding for the purpose of the Alliance but remains subject to the unilateral decision of the member concerned. If the member concerned does not follow the guidance, an explanation to the Alliance is required;
- **Should** means that a process is strongly recommended.

2 The authors further acknowledge that collaborative engagement of shareholders may, depending on the facts of the individual case, be subject to regulatory requirements or restrictions in certain jurisdictions. It is up to the individual Alliance members to determine whether a specific course of action is possible or feasible in this regard. The Alliance does not expect its members to act in a certain way where this would not be possible or feasible with a view to regulatory requirements.

The Alliance is committed to accelerating decarbonisation in line with 1.5°C no or low overshoot pathways, primarily through engagement with corporates and policymakers as well as providing the capital required to finance the transition. Given the complex nature of leveraging ownership and financial strategies to drive real world change, and tracking the impacts of these actions, a four-part target setting structure is recommended (Engagement targets, Sub-portfolio targets, Sector targets, and Climate Solutions Investment targets).

Scope and coverage of the Protocol

Targets *shall* be set on the members' own Scope 3 emissions related to investments (sometimes referred to as 'portfolio emissions' or 'financed emissions'). In addition to setting Scope 3 emissions targets, Alliance members *should* set net-zero targets on their own Scope 1 and 2 emissions. Members *shall* set targets on Scope 1 and 2 emissions for their underlying holdings and *should* do so on Scope 3 of underlying holdings for 'priority sectors'³ as soon as possible, as detailed in the chapter on sector-level targets. At the portfolio level, Alliance members *should* track portfolio company Scope 3 emissions, but are not yet expected to set targets until interpretation of these emissions in a portfolio context becomes clearer and data becomes more reliable.⁴

Alliance members *should* set targets on all four parts. The minimum expectation is that Alliance members *shall* set targets on three (engagement is a mandatory target type, as well as including in reporting information on climate solution investments). The Alliance Commitment requires its members to publish interim targets on a five-year cycle. To maintain consistency with the Alliance reporting cycle, public targets issued more than three years prior should not be considered. This reporting schedule is in line with the Paris Agreement Article 4.9 which requires signatories to submit updated emissions reduction plans every five years. National governments who have signed up to the Paris Agreement will communicate these updated emissions reduction plans, also known as Nationally Determined Contributions (NDCs), in 2025, 2030, 2035, 2040, 2045 and 2050.

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- 3 Identified from those with high Scope 3 emissions or otherwise large emissions contributions as Oil and Gas, Utilities, Steel, Aviation, Shipping and heavy and light duty road transport.
 - 4 Comparisons of Scope 3 data reported by similar companies indicate the largest degree of divergence in reported emissions. See Busch, et al. 2018.

Diagram I: Alliance four-part target setting approach



Engagement targets. Engagement targets help track member engagement activities with companies and asset managers, while also guiding member efforts to engage with the broader investment and real economy sectors through position papers. Alliance members shall engage, at a minimum, 20 companies with a preferential focus given to companies that the asset owner believes will have the largest real-world decarbonisation impact (e.g., those with the highest owned emissions in their portfolios), or those responsible for a combined 65% of the respective member’s owned emissions in their portfolio. These companies can be covered through asset manager engagement, collaborative engagement and membership initiatives, or direct bilateral corporate engagement. **Policy engagement** supports all the above efforts and addresses factors beyond the direct control of Alliance members. No targets are expected under policy engagement.

Sector Targets. Sector targets help link portfolio-level reductions to the carbon efficiency requirements of a given sector and therefore, real world outcomes. Productivity-based, sector specific targets for high-emitting sectors reflect the details of each sector, their respective energy transition trade-offs with other sectors in the global economy, and the role they are expected to play in the transition to a net-zero economy (e.g., sector specific intensities across utilities or transport, as well as coal and fossil fuel phase-out pathways). Alliance members who set sector targets shall progressively

start implementing sector targets beginning with their most material sectors from an owned-carbon emissions standpoint initially and increasing the sector coverage over time by 2025. Alliance members shall aim to have sector targets in place by 2025 (for 2030 targets) covering at least 70% of total owned emissions. For coal, Alliance members shall set coal phase out policies in line with the Alliance coal position paper.⁵

‘Sub-portfolio’ Targets.⁶ Sub-portfolio targets cover the asset classes where credible methodologies and sufficient data coverage exist as of the date of the target’s publication. Later, once full coverage is reached, this target type will be termed simply ‘Portfolio targets’. To-date Alliance members shall set targets across their listed equity, publicly traded corporate bonds⁷, real estate (equity and commercial-debt), infrastructure (equity and debt) as well as private equity portfolios. The Alliance assessed the IPCC no and low overshoot 1.5°C scenarios⁸ and identified a global average absolute emissions reduction requirement in the range of -22% to -32% by 2025 and -40% to -60% by 2030 (see Chapter 2 for further details). Alliance members shall set targets based on this reduction range, considering the impact on the real economy and other member-specific considerations and constraints. Alliance members shall set targets on an absolute or intensity-basis (see 7 Sub-portfolio targets for details on appropriate metrics).

Climate Solutions Investment Targets. Financing the transition to a net-zero economy is an important component of the Alliance Commitment as it is one aspect of investment portfolio alignment to net-zero. Alliance members are encouraged to use the resources and capabilities available to them to grow the supply and the demand of net-zero investment solutions. Alliance members support financing the transition and the increase of climate solution investments, for example in emerging economies but also by promoting net-zero aligned benchmarks. Members *shall* report individually to the public on their progress in climate solution investments and their support in driving change. The Alliance will focus on enlarging the scale, pace, and geographic reach of net-zero compatible technologies.

Alliance recruitment. The Alliance recruitment target aims to achieve a minimum of 200 Alliance members or USD25 trillion in assets under management across the group by 2025.

Alliance target disclosure and reporting. Alliance members *shall* publicly disclose targets within 12 months of joining the Alliance, and annually report on the emissions profile of the company. Alliance members *shall* submit target information to the Alliance in the current reporting cycle (unless the start of the reporting cycle is within

5 The same is expected of Oil and Gas once the O&G position is published. Some information on target setting for O&G infrastructure was included in TSPV2, and is contained in this Protocol as well.

6 The Alliance will not give any recommendations or instructions to their members which precise measures need to be taken to achieve the targets as stated in this document nor will the Alliance members exchange any information on transaction basis.

7 This *should* include private loans to listed companies using the same methodologies as listed equity and publicly traded corporate bonds where possible, explaining where this is not possible.

8 The Alliance has analysed all scenarios and recommends use of scenarios with limited overshoot of global temperature rise of 1.5°C, i.e., with limited necessary removal of atmospheric carbon to bring the temperature back to below 1.5°C. These sets of scenarios are usually described by their representative pathways P1, P2 and P3. This is considered ‘best available’ science. See Rogeli, J. et al (2018).

6 months of the member joining, then the member *shall* submit in the subsequent reporting cycle). Finally, Alliance members *shall* report publicly on quantitative progress at least every five years in line with Article 4.9 disclosing annually and publicly on progress towards intermediate individual targets, including on investment portfolios' emissions profile and emissions reductions. The Alliance will publish a progress report (see latest report [here](#)) reflecting the Alliance's work and achievements on an annual basis and publish a more detailed report on quantitative achievements every five years in line with Article 4.9.

In 2022 the Alliance introduced a member-led process to review members' published or reported targets on an anonymised basis. This process foresees certain escalation steps and can, in an extreme case, lead to a delisting of members.

The UN High-Level Expert Group (HLEG) on the Net-Zero Emissions Commitments of Non-State Entities released its report to the UN Secretary-General at the UN climate talks, COP27, in Egypt on 8 November 2022. The HLEG underpins the Alliance's view that the pursuit of net-zero emissions by 2050 is even more urgent amid the ongoing energy security crisis, geopolitical uncertainty, and intensifying extreme weather events. The Alliance will consider the recommendations made in the HLEG report for the next version of the Target Setting Protocol (TSP V4).

1. The Alliance Commitment: What we aim to achieve

The members of the Alliance have made the following commitment:

“The members of the Alliance commit to transitioning their investment portfolios to net-zero GHG emissions by 2050 consistent with a maximum temperature rise of 1.5°C above pre-industrial temperatures, taking into account the best available scientific knowledge including the findings of the IPCC, and regularly reporting on progress, including establishing intermediate targets every five years in line with Paris Agreement Article 4.9.

In order to enable members to meet their fiduciary duty to manage risks and achieve target returns, this Commitment must be embedded in a holistic ESG approach, incorporating but not limited to, climate change, and must emphasise GHG emissions reduction outcomes in the real economy.

Members will seek to reach this Commitment, especially through advocating for, and engaging on, corporate and industry action, as well as public policies, for a low-carbon transition of economic sectors in line with science and under consideration of associated social impacts.

This Commitment is made in the expectation that governments will follow through on their own commitments to ensure the objectives of the Paris Agreement are met.”

In line with the above commitment, the Alliance and its members are committed to supporting the real economy in its transition to a net-zero world, while, at the same time, being guided by science. It is important to note that the real economy is not moving as fast as the science recommends and this departure creates a substantial challenge for Alliance members who are committed to holding a net-zero portfolio as well as investing in a net-zero world. Thus, defining net-zero portfolio pathways will reflect both the requirements of science and the needs of the real economy, while also considering implications for a Just Transition (see A Just Transition section of this Protocol). To this end, the Alliance has heavily consulted several academic institutions on the scenarios and conclusions of the IPCC Special Report on Global Warming of 1.5°C and IPCC Sixth Assessment Report (AR6) to inform the recommended emissions reduction ranges for 2025 and 2030 respectively.

Objective of the Protocol

The publication of the Protocol aims to address two objectives:

1. Maximise the impact of communication with external audiences. The Alliance aims to be reliably transparent and proactive in explaining our role, views and how we are addressing key issues and limitations of portfolio decarbonisation beyond our control. Our open approach to communication also means that we seek to learn from and build on external feedback received through public dialogue.
2. Provide the necessary guidance on Alliance requirements, which will guide and support Alliance members in implementing Alliance-wide approaches.

Transparent and unique targets encourage real world emissions reductions

Each Alliance member is unique and may identify specific levers that exist within their respective institutions for accelerating real world decarbonisation. They also differ in investment scope, strategies, internal governance structures, current exposure to certain high-emitting sectors etc.

Despite the firm root in science, scaling down global climate, energy, or economic models to the level of a portfolio or economic sector is riddled with challenges. Therefore, while a science-based recommendation is an appropriate guidepost for the average, globally invested asset owner, the composition, structure, investment risks and opportunities, and return targets of a given asset owner will vary significantly. The general understanding of the Alliance and how members can contribute to real world emission reductions was outlined in the Inaugural Target Setting Protocol ("[Theory of Change](#)").

The Protocol is constructed to allow Alliance members to employ the combination of approaches that best supports their unique decarbonisation and engagement strategies within their fiduciary duty to meet risk adjusted returns. In this way the Alliance members aim to have transparent and unique targets, suited to individual institutions, whilst also being aggregable and measurable, enabling progress to be tracked. Please see the [Alliance Inaugural Progress Report](#) for all targets issued during the first reporting period.

As a result, Alliance members **shall** set targets based on the criteria outlined in this Protocol and **shall** explain any necessary deviations.

2. The scientific basis for establishing net-zero targets

Balancing high ambition, science, and the real economy⁹

In becoming a member of the Alliance, each member has agreed to transition “its investment portfolios to net-zero GHG emissions by 2050 consistent with a maximum temperature rise of 1.5°C above pre-industrial levels, taking into account the best available scientific knowledge including the findings of the IPCC.”

The Alliance recognises that IPCC reports provide a comprehensive and balanced assessment of the state of scientific, technical and socio-economic knowledge on climate change, its impacts and future risks, and options for reducing the rate at which climate change is taking place.¹⁰ The IPCC’s most recent report is the [Sixth Assessment Report](#) (AR6, 2021/22). IPCC Assessment Reports consist of contributions from each IPCC Working Group and a Synthesis Report integrating these contributions and any Special Reports prepared in that assessment cycle. Working Group III (WGIII) of the IPCC focuses on climate change mitigation, assessing methods for reducing greenhouse gas emissions, and removing greenhouse gases from the atmosphere. WGIII finalised its contribution to AR6 in April 2022. The findings can be found in the IPCC Report ‘Climate Change 2022: Mitigation of Climate Change’ (WGIII Report).^{11,12}

9 Please note that the findings and recommendations of the IPCC are acknowledged by both the UN-convened Net-Zero Insurance Alliance and the UN-convened Net-Zero Asset Owner Alliance.

10 [ipcc.ch/about/preparing-reports/](https://www.ipcc.ch/about/preparing-reports/)

11 [ipcc.ch/working-group/wg3/](https://www.ipcc.ch/working-group/wg3/)

12 [ipcc.ch/report/ar6/wg3/](https://www.ipcc.ch/report/ar6/wg3/)

The Alliance acknowledges the WGIII findings, and in particular WGIII's assessment that in pathways that limit warming to 1.5°C (>50% likelihood) with no or limited overshoot (C1 Category):¹³

- global net GHG emissions are reduced from 2019 levels by 43% [34–60%] in 2030; and
- global net CO₂ emissions are reduced compared to modelled 2019 emissions by 48% [36–69%] in 2030.¹⁴

The Alliance also acknowledges the WGIII finding that:

- Net-zero GHGs is reached between 2095–2100 [2050–infinity] with only half of the underlying pathways lead to net-zero GHGs by 2100;¹⁵ and
- Net-zero CO₂ is reached between 2050–2055 [2035–2070] in all C1 pathways across the C1 Category.¹⁶

When deriving an emissions reduction range (whether GHG or CO₂) from the latest IPCC report C1 Category, the 5–95th or 25–75th (interquartile) percentile intervals of scenarios are cited within the category. A broader range (5–95th percentile) reflects a greater number of modelled scenarios and therefore considers a wider range of possible projected outcomes. A narrower range (25–75th percentile/interquartile) reflects a smaller number of modelled scenarios and therefore considers a more-restricted range of possible projected outcomes, with a tighter distribution around the median. Both approaches have been adopted by the IPCC, which also assesses the validity of all scenarios (including underlying assumptions and model projections) within each category prior to their inclusion.¹⁷

13 Category C1 comprises modelled scenarios that limit warming to 1.5°C in 2100 with a likelihood of greater than 50%, and reach or exceed warming of 1.5°C during the 21st century with a likelihood of 67% or less. In this report, these scenarios are referred to as scenarios that limit warming to 1.5°C (>50%) with no or limited overshoot. Limited overshoot refers to exceeding 1.5°C global warming by up to about 0.1°C and for up to several decades” (Footnote 49, WGIII Report).

14 Please see C.1.1 and C.1.2 of WGIII Report. The percentage cited for GHG emissions and CO₂ emissions respectively is the projected median percentage reduction of pathways in the year across the scenarios compared to modelled 2019, with the 5–95th percentile interval provided in square brackets.

15 Under the C1 Category, net-zero GHGs is not strictly required in all underlying pathways that limit warming to 1.5°C with no or limited overshoot. Only 50 out of the 97 pathways of the C1 category lead to net-zero GHGs by end of the century (sub-category C1a), whereas 47 C1 pathways never reach net-zero GHGs (sub-category C1b). In sub-category C1a, net-zero GHGs is reached between 2070–2075 [2050–2090]. This represents the ‘earliest’ projection of when net-zero GHGs are reached and requires net-negative CO₂ emissions to compensate for residual non-CO₂ emissions. Note that C1, C1a and C1b are all aligned to pathways that limit warming to 1.5°C (>50% likelihood) with no or limited overshoot. Please see WGIII AR6 Table SPM.2.

16 Please see Table SPM.2 of the WGIII Report. The range cited is the projected median 5-year interval at which net-zero is achieved, with the 5–95th percentile interval in square brackets.

17 Table SPM.2 of WGIII Report provides the 5–95th percentile interval for GHG and CO₂ ranges, however in past reports (IPCC, 2018: Global Warming of 1.5°C (Special Report)) ranges were provided by the IPCC at interquartile intervals (see paragraph C1 of the Special Report in respect of CO₂ emissions reduction ranges). Interquartile ranges are also adopted in WGIII Report in specific circumstances—please see paragraphs C.3.2 and C.8.1.

For the purposes of the WGIII Report, GHG emissions include carbon dioxide (CO₂),¹⁸ methane (CH₄), nitrous oxide (N₂O), and fluorinated gases comprising hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF₆), as well as nitrogen trifluoride (NF₃). The IPCC definition of GHG emissions aligns with the definition of GHGs as adopted by the Alliance. GHGs are typically combined for the purposes of reporting in “CO₂ equivalents” (CO₂e) to standardise the climate effects of the various GHGs. Reporting in CO₂e therefore refers to all underlying GHG emissions produced by a company in the real economy.

The Alliance also acknowledges that:

- Where CO₂e is reported for a company by 3rd party data providers, it can be assumed, but is not guaranteed, that all relevant GHGs are captured in the CO₂e reported figure.
- The dominant GHG is CO₂. Other significant non-CO₂ GHGs include CH₄ and N₂O which are primarily caused by a limited number of sectors: CH₄ emissions by agriculture (livestock, manure, rice cultivation), energy (venting, production and transmission losses), and waste (landfills, wastewater); N₂O emissions by agriculture (soils).¹⁹ Averaged across sectors, global net CH₄ emissions are reduced from 2019 levels by 34% (21–57%) in 2030 for pathways limiting warming to 1.5°C—though with significant differences between relevant sectors, e.g. median CH₄ reductions of 62% for energy, versus 12% for agriculture, forestry and other land use (AFOLU)²⁰—whereas only limited near-term reductions of global net N₂O emissions are expected by 2030.²¹
- GHG emission reduction pathways and CO₂ emissions reduction pathways are not identical due *inter alia* to the different concentrations of GHGs in the atmosphere, the different warming potential of the various GHGs, and the current availability of technology to limit further GHG emissions and/or remove GHGs from the atmosphere.

Given the complexities involved with steering financial portfolios in line with the current state of science described above, the fact that the scientific findings evolve over time, and the challenges in full coverage of data per GHG-type, the Alliance intends to consult a scientific advisory group for further guidance on the interpretation of the latest science with respect to defining an appropriate emission reduction range.

18 CO₂ includes CO₂ from fossil fuel combustion and industrial processes (CO₂-FFI); net CO₂ emissions from land use, land-use change and forestry (CO₂-LULUCF).

19 World Resources Institute, June 2022. [wri.org/data/world-greenhouse-gas-emissions-2019](https://www.wri.org/data/world-greenhouse-gas-emissions-2019)

20 See WGIII AR6 report Figure 6.26 on page 6–99 for energy, and Figure 3.27 on page 3–65 for AFOLU.

21 Please see paragraph C.1.2 of the WGIII AR6 Report for CH₄ and Figure SPM.5 for N₂O (the long-term reduction cited in C.1.2 for N₂O is 20% (-5 to +55%) by 2050).

Recommended decarbonisation range

In the prior versions of the Protocol (Inaugural and version 2), the Alliance assessed IPCC SR1.5°C no or limited overshoot pathways to inform individual members in their target setting approach for portfolio emissions reductions. To limit global reliance on atmospheric carbon removal, **it found absolute emissions reductions for the period 2020 to 2025 should range between -22 to -32%. This target range remains unchanged given the proximity of the 2025 reporting period.**

For the current version of the Protocol (TSPV3) the Alliance assessed the IPCC Sixth Assessment Report (April 2022) to obtain an updated range for 2020 to 2030.²² As the Alliance's Commitment requires pursuit of net-zero GHGs by 2050, in line with a maximum temperature rise of 1.5C, the Alliance has since its inception used CO₂ pathways with a 75/25 interquartile range as a proxy for the following reasons:

- a. CO₂ pathways target a 2050 net-zero end point
- b. Portfolios are largely CO₂ dominated
- c. Largely data is available for CO₂, but is not as available or reliable for other GHG,²³ and
- d. Interquartile ranges eliminate some extreme outlier scenarios (noting that scenarios are not designed for portfolio steering but rather to test a range of assumptions in pursuing a given temperature outcome).

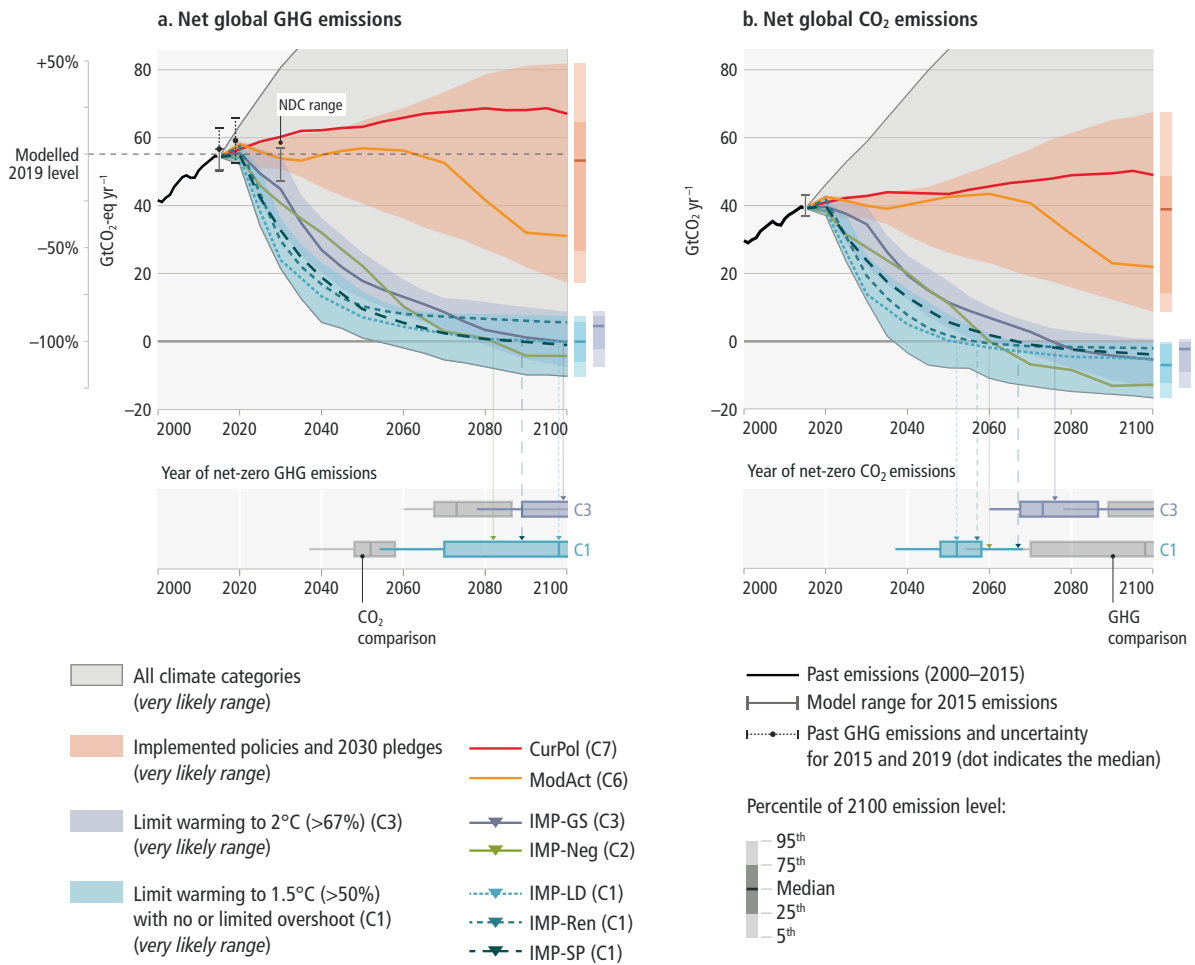
Alliance members will continue to use CO₂ pathways as a proxy for all GHG gases, targeting a more ambitious year of net-zero for all GHGs. **As a result, Alliance members shall target 40–60% reductions by 2030 in line with IPCC estimates (pg25 SPM).**

Modelled mitigation pathways from the latest IPCC AR6 that limit warming to 1.5°C with no or limited overshoot that found the basis for this calculation is shown as the light blue pathway in Diagram II below.

22 IPCC uses a range of 95/5th and 75/25th percentiles throughout its reports, NZAOA has historically used 75/25th interquartile range to remove outlier scenarios.

23 Several data providers have confirmed to the Alliance that even when CO₂e metrics are provided, non-CO₂ gases are largely unreported. In addition several studies covering the next most reported gas, Methane, have shown the gas to be unreported by up to 60 percent; [Hitting-the-Mark.pdf \(storage.googleapis.com\)](#).

Diagram II: IPCC modelled global emissions pathway characteristics

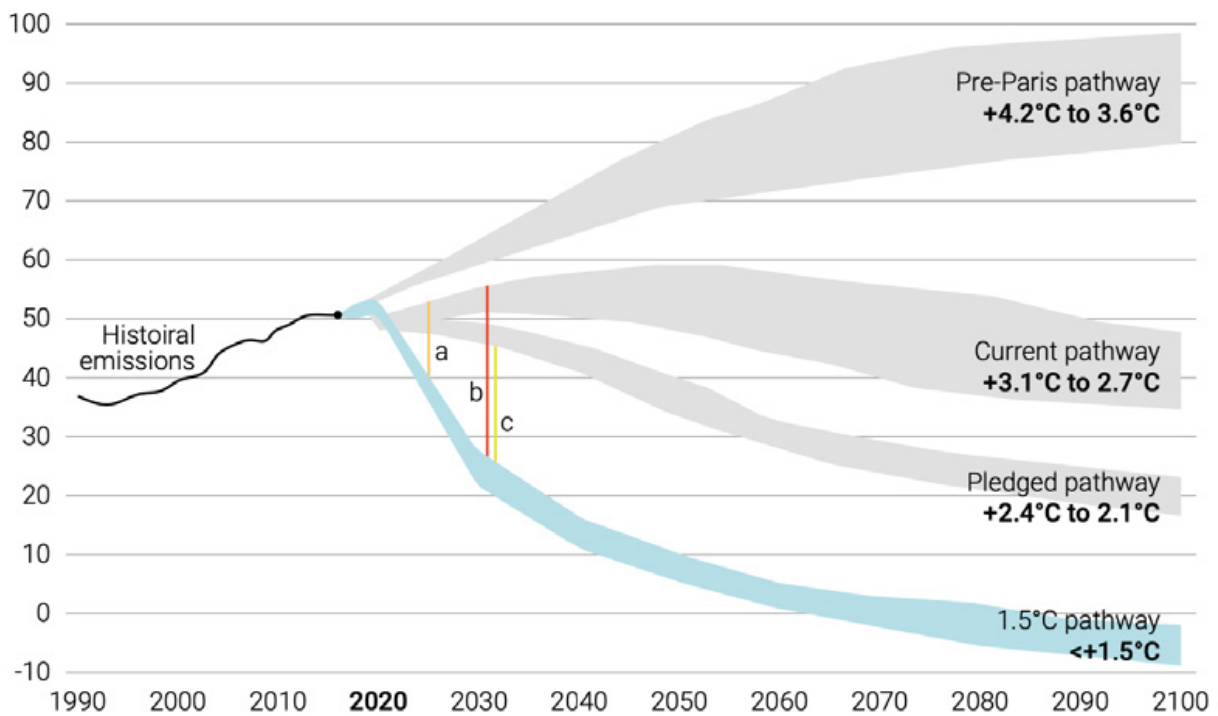


Source: IPCC Sixth Assessment Report (AR6)

Real economy progress

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 2025 gap depicted in the chart below by line ‘a’, and 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 pledges).

Diagram III: Illustration of scientific and real economy emissions pathway divergence



This widening ‘gap’ represents a decoupling of the Alliance members’ (or other net-zero committed investor’s) 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 align their portfolios 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.

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 synchronisation 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, otherwise members may be faced with a decision to exit the majority of the investible universe, which exposes them to other (investment) risks.

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

1. Different starting points in terms of portfolio carbon emissions;
2. Diverse liability constraints;
3. Diverse sector allocations which may not reflect the global investment universe and may be geographically concentrated;
4. Very different asset class allocations with pension funds at one end seeking diversification and balance across all asset classes, while insurance companies, which have a different business model, concentrated in fixed income;

5. Different investment horizons and portfolio rotation cycles—constraining the ability to keep steady portfolio holdings;
6. Different levels of new business and growth;
7. Varying investment approaches: active management versus buy and hold strategies, high conviction versus index investments, direct ownership versus fund investments;
8. 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
9. 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.

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 18 countries have net-zero goals in law (Energy & Climate 2022) and 38 in national policies, which is an indication of the progress possible (Energy and Climate 2022).

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.²⁴

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 (requires explanation by the member). Such Alliance members would stay invested or seek to invest in high emitting companies with the explicit intention of financing their transition. Through engagement or active ownership, the 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.

24 The Alliance notes that jurisdictions considering net-zero legislation account for over 50% 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.

Carbon removals

The Alliance’s approach to carbon removals is based on the two principles outlined below and is detailed in the Alliance’s [‘The Net in Net-Zero’](#) position paper. These principles either comply with or are more ambitious than both the Oxford Principles [for Net-Zero Aligned Carbon Offsetting and the](#) recommendations put forth by the [United Nations’ High-Level Expert Group on the Net-Zero Emissions Commitments of Non-State Entities’](#).

1. Prioritise deep and rapid decarbonisation across all sectors, particularly the carbon-intensive industries.
2. Track progress against net-zero goals and ensure accountability such that the employment of carbon removals does not deter or detract from decarbonisation efforts and/or ambition on a wider scale.

Therefore, Alliance members **shall not** use carbon removals for their own sub-portfolio or sector target achievement at this time or at any time before 2030 (when this Protocol comes to term). Nevertheless, members are highly encouraged to contribute to a liquid and well-regulated carbon removal certificate market before 2030 as such a market is important for accelerating decarbonisation.²⁵

Alliance members **shall** encourage investee companies to prioritise abatement. To ensure ongoing and strong emphasis on carbon reduction, investee companies **shall not** use carbon removals exceeding emission levels indicated by broadly accepted sector pathways aligned with 1.5°C (“residual emissions” as defined by science-based sector pathways) to claim net-zero target achievement. Investee companies **shall** only incorporate carbon **removal** certificates with long-lived storage (as defined by the Oxford Principles). Alliance members **shall** require investee companies to obtain independent broadly accepted verification.

All reporting, by investee companies and by asset owners, **shall** be done on a gross basis showing emissions and removals separately, **and shall** be done on a sector-specific basis—showing emissions and removals separately, and accounting only for carbon removals which do not exceed the sector emissions budget (according to no or limited overshoot pathways).²⁶

Alliance members are encouraged to invest in projects and technologies of durable CO₂ avoidance and removal to scale future markets rapidly. These investments may be reported under and contribute to achievement of a member’s Financing Transition Target.

25 Note, the extent to which Alliance members may consider use carbon removal certificates after 2030 will be defined later by the AOA. At such time, AOA will follow the best available scientific guidance.

26 Standard data providers often do not yet distinguish between gross and net emissions, or provide an indication of the quality of the removal. In these cases asset owners are encouraged to undertake their best efforts to interrogate the type of removals utilized, in some cases this may not be possible, especially for smaller sized asset owners. In the meantime, the Alliance encourages all data providers to begin to source, assure and provide this type of data.

A just transition

The just transition is a strategic approach guided by the principle that all climate action “must be attuned to the needs of and involve the most vulnerable groups of society, including poor women and men” (UNDP 2016). Just Transition was incorporated in the Paris Agreement in 2015 as a way of signalling the importance of minimising negative repercussions from climate policies and maximising positive social impacts for workers and communities.

The concept of just transition addresses the social risks and impacts on workers, suppliers, communities, and consumers, as well as climate justice issues which emerge within and between countries and regions related to climate change. A transition which would put livelihoods and living standards at risk is unlikely to succeed: as such, a just transition is an important aspect of achieving global net-zero GHG emissions.

Financial institutions have an increasingly vital role to play in incorporating just transition principles into their business operations and more than 161 investors representing USD10.2 trillion in assets under management have endorsed the Principles for Responsible Investment (PRI)-led [Statement of Investor Commitment to Support a Just Transition on Climate Change](#).

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.

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 and have fewer resources to transition from their dependence on fossil fuels. Mitigating climate change fairly and effectively means ensuring that emerging markets do not fall behind in the energy transition.

Emerging markets are also less able to finance the investment needed to achieve a net-zero transition. Emerging markets (excluding China) comprise two-thirds of the global population, but hold only 10 percent of financial wealth and have, to date, only accounted for 10 percent of the global issuance of sustainable debt—only 53 percent of which is issued by corporates (IEA 2021). In addition, developing country governments are likely to struggle to raise finance as sovereign borrowing capacity has been reduced by the economic impacts of COVID-19 (OECD 2021).

Further, Environmental Social Governance (ESG) ratings of sovereigns and companies are backwards looking and often highly correlated with a country’s GDP. Therefore, when an overlay based on ESG ratings is applied to a global investment strategy, this leads to capital outflow from emerging markets to developed markets. Additionally, Amacker and Donovan (2021) show that the improvement in ESG scores in EMs has been primarily driven by improvements in governance and secondarily by social progress, not environmental factors.

Companies and countries are often judged on their alignment to global decarbonisation pathways which often only differentiates between regions, but not between countries or state of economic development. These science-based standards are based on technological feasibility and therefore typically favour countries with more technology and financial resources. Science-based standards consistent with the principle of “differentiated responsibilities” should ideally have both an aggregate global trajectory for transition and differentiated regional or national trajectories.

To meet the targets of the Paris Agreement, the financing gap in emerging markets needs to be closed by private and public investment.

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, the following table provides links to useful resources and initiatives.

<p>Government/international</p> <ul style="list-style-type: none">▪ ILO: Guidelines for a just transition towards environmentally sustainable economies and societies for all;▪ Multiple governments: COP 26 Just Transition Declaration;▪ EU: Just Transition Mechanism: making sure no one is left behind. <p>Business—background and expectations</p> <ul style="list-style-type: none">▪ Just Transition Centre and B Team: Just Transition: A Business Guide;▪ World Benchmarking Alliance: Just Transition Assessment Methodology 2021. <p>Investors</p> <ul style="list-style-type: none">▪ PRI page on Climate change and the just transition;▪ Multi-stakeholder: Climate change and the just transition, A guide for investor action;▪ PRI Statement of Investor Commitment to Support a Just Transition on Climate Change;▪ 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;

Initiatives—There are several initiatives that signatories might consider joining, to advance their work on just transition:

- The Council for Inclusive Capitalism, which developed a [Just Energy Transition framework](#)
- Climate Action 100+ that has begun to [integrate just transition indicators into assessments and are undertaking sector engagement](#).
- [World Benchmarking Alliance](#), which produced the first-ever just transition assessments for COP26 and have a multistakeholder method to improving companies' approaches to just transition.
- Impact Investing Institute's [Just Transition Finance Challenge](#) to support a just transition to net zero in the United Kingdom and other developed and emerging markets.
- The UK's [Financing a Just Transition Alliance \(FJTA\)](#), convened by the Grantham Research Institute on Climate Change and the Environment and counting over 30 investors among its members.



3. Scope of the Protocol

Four-part target setting structure to contribute to real world GHG emissions reductions most effectively

Reducing GHG emissions and having real world impact in a global, diversified investment portfolio is a complex challenge—no simple solution exists. The members of the Alliance MRV track reviewed many known and available methodologies for target setting. No single stand-alone methodology was determined to be suitable to drive GHG emissions reductions in the real economy on a long-term basis. Furthermore, it is generally thought that a multi-faceted approach is likely to be more successful in addressing a challenge as complex as the net-zero transition. Given this background, the Alliance decided on a four-part approach to target setting.

The implementation of each part will have a particular impact on investee companies and emissions. By combining the four parts, an asset owner can have the greatest impact and contribute to the desired transition towards a net-zero economy. Hence, Alliance members **should** set targets on all four parts. The minimum expectation is that Alliance members **shall** set targets on three (engagement is a mandatory target type, as well as including in reporting information on climate solution investments).

Diagram IV: Alliance four-part target setting approach



Assets covered by the Alliance Commitment

In a guidance document issued September 2019, Alliance members detailed that the Alliance Commitment should cover “all assets under management (and on balance sheet) managed by the asset owner while exercising asset allocation in fiduciary duty”, this includes:

- inhouse managed money;
- third party managed money (e.g., ETFs, mutual funds, active/passive);
- shareholder money; and
- policyholder money (in cases where the asset allocation is carried out by the asset owner).

But excludes:

- money managed by group owned asset managers for third party clients. This is not considered asset owner money as it does not appear on the balance sheet of the asset owner. However, the Alliance recommends that members engage third party investment partners in discussions on net-zero ambitions and associated target setting.²⁷

For those setting sub-portfolio targets, this chapter details the asset class phase in schedule. Sub-portfolio targets will be referred to as simply 'portfolio targets' when available methodologies and data cover >85% of the asset classes. As asset class methodologies are provided in the Protocol, then targets should be submitted in the next reporting cycle (see schedules in Chapter 7 Sub-portfolio targets).

Emissions scope covered by the Alliance Commitment

The Protocol's focus is on portfolio emissions (an asset owner's Scope 3) since these represent the vast majority of an asset owner's emissions with 95% to 97% (Lütkehermöller et al. 2020). Alliance members **shall** therefore set targets on their own Scope 3 emissions. However, the Alliance members **should** also commit to net zero (by 2050) with respect to their own operational carbon footprint (Scope 1 and 2), assessing their carbon footprint in line with the [GHG Protocol](#) and developing short- and mid-term targets as intermediate steps towards their net-zero target.²⁸

Emissions scope coverage of the underlying asset

Portfolio companies also have their own Scope 1, 2, and 3 emissions targets. Corporate data on Scope 3 emissions is somewhat unreliable and several data providers estimate Scope 3 emissions with a wide range of outcomes (Bush et al. 2018). The estimation methods and reported data can differ significantly.

Alliance members will review the targets of the companies in their portfolio and **shall** set targets on their Scope 1 and 2 emissions. Alliance members **should** also set targets on the Scope 3 emissions of the portfolio company as soon as possible, each individual Alliance member is encouraged to move as early as it deems feasible. At the portfolio level, the Alliance requirement is that members **should** track, but not yet set targets on Scope 3 emissions until interpretation of these emissions in a portfolio context becomes clearer and data becomes more reliable.²⁹ MRV is advancing technical work on addressing investee company Scope 3.

²⁷ Alliance members may include unit linked products when they retain full investment discretion for these products.

²⁸ Those AOs wishing to seek SBTi validation should follow the SBTi methodology for their operational Scope 1 and 2 GHG emissions.

²⁹ Comparisons of Scope 3 data reported by similar companies indicate the largest degree of divergence in reported emissions. See Busch et al. 2018.

GHG coverage (CO₂e)

The Alliance members commit to net-zero GHG emissions by 2050. CDP and similar providers typically produce data for underlying holdings in CO₂ equivalent (CO₂e), which provides a relative measure of the impacts of other GHGs (e.g., Methane 'CH₄', Nitrogen Oxides 'NOx') versus the climate impact of CO₂. Therefore, Alliance members **should** report on a CO₂e basis³⁰. Wherever disaggregation is available for non-CO₂ GHGs, Alliance members **should** report on a disaggregated basis.

Base and target year

The Alliance Commitment requires intermediate targets to be set every five years in line with the Paris Agreement Article 4.9 cycle. Article 4.9 of the Paris Agreement specifies a five-year cycle of 2025, 2030, 2035 etc. When Alliance members join between these dates, they **shall** establish targets which align with this cycle. The Alliance publishes five-year targets, while individual members may publish shorter or slightly longer (up to seven years when the next reporting cycle ends within two years). The Alliance Commitment requires that individual members publish full details of their progress against their target ahead of COP30 in 2025. Furthermore, in anticipation of more asset class methodologies being finalised as well as members joining in the coming years, the Table below outlines potential switch-points of target and related base years. Members **should** therefore consider the following target dates and underlying data when setting their targets:

Table I: Timetable to Alliance member target setting^{31,32}

Joining year/ year asset class method is made public	Year targets need to be set (within 12 months of joining, unless end of reporting cycle is within 3 months)	Recommended base year data	Target year data	Recommended reduction range
2019	2021	FY19	FY24	TSP V1
2020	2021	FY19 or 20	FY24	
2021	2022	FY20 or 21	FY24	
2022	2023	FY21 or 22	FY24 or FY29	TSP V2 or V3
2023	2024	FY22 or 23	FY29	TSP V3
2024	2025	FY23 or 24	FY29	
2025	2026	FY24 or 25	FY29	
2026	2027	FY25 or 26	FY29	
2027	2028	FY26 or 27	FY29/34	

Source: Net-Zero Asset Owner Alliance Protocol

³⁰ Alliance members should report on CO₂e, as provided by CDP or similar data providers.

³¹ The Inaugural Target-Setting Protocol of the Alliance was released in January 2021.

³² Members joining very late in 2021 might also set already targets towards 2029.

Adjusting for pre-existing targets (and reductions achieved)

For Alliance members with pre-existing, public targets it is possible to translate their base year to an earlier year if scientific pathways were considered. A number of Alliance members already have public quantitative, absolute, or intensity-based emissions reduction targets that refer to a different base year and reflect the emissions reductions achieved before joining the Alliance. For those using base years before or after 2020 for the target year 2025, members may add or deduct 5.5%pts to 7%pts from the emissions reduction ambition for their first short-term targets, if they consider the overall ambition towards 2030. However, it should be noted that the Alliance acknowledges that reductions of 5.5%pts to 7%pts per annum is not in line with actual global emission trends in years prior to the pandemic, and the real economy needs to make faster progress. As per the example:

A member which would like to align with a 25% reduction target for the period 2020 to 2025, but which joins in 2020 and therefore sets this target in 2021, would take 6%pts from the range so $25 - 6\% = 19\%$ target for 2021 to 2025.

Finally, if setting an earlier base year, decarbonisation progress made before joining the Alliance must have been made public via a set target or evidenced via public reporting. To maintain consistency with the Alliance reporting cycle, public targets issued more than three years prior joining the Alliance should not be considered.

For example, if a member started their decarbonisation journey in 2018 and wished to apply their early decarbonisation efforts towards the target year 2025 (as if targeting alignment with a 25% reduction pathway for 2020 to 2025), they would add two annual percentage point increases for $25 + 6\%$ (2019) + 6% (2018) = 37% target for 2018 to 2025.

4. Engagement targets

The importance of conducting engagement

Engagement is perhaps the most important mechanism asset owners have to contribute to a net-zero transformation. Engagement targets should reflect this ambition to generate real-world impact. These targets should also be set in conjunction with sub-portfolio and sector targets. **Therefore, all Alliance members shall set engagement targets.**

In addition to targeting real-world decarbonisation, engagement efforts need to outline what action is taken when engagement expectations are not met. Alliance members **should** therefore clearly define escalation procedures for their own climate engagements or set escalation expectations for the asset managers conducting climate engagements on their behalf. Members should design these escalation procedures to accelerate a just transition to a 1.5°C-aligned no or limited overshoot scenario in the real economy.

Additionally, as detailed in the Alliance's [Guidance on Proxy Voting](#), effectively connecting engagement activities with proxy voting is critical. Where applicable, Alliance members **should** transparently explain how proxy voting is systematically employed to align with their net-zero commitment. This should include an explanation of how votes are used to hold companies accountable when they are not making satisfactory progress to address climate change or support climate change mitigation. Alliance members that rely on their asset managers for casting proxy votes **should** integrate the principles of the Alliance proxy voting guidance—complemented by their own expectations—in the selection, appointment, and monitoring of their asset managers.

Finally, asset manager engagement is one of the most important and impactful levers asset owners have to support their net-zero commitments and greater climate action. Asset managers not only allocate assets, but also conduct corporate engagements, cast proxy votes (notably on directors and climate resolutions), and have an important voice in the business community. Alliance members **shall** engage their asset managers to:

1. increase understanding of how asset managers are representing the asset owner's long-term climate interests, and
2. increase the alignment between asset managers' actions and asset owners' interests, when necessary (Freshfields Bruckhaus Deringer LLP 2021).

Asset owners must require asset managers to undertake stewardship activities that move beyond incremental and linear levers, which are insufficient for limiting global temperature rise to 1.5°C. This includes placing certain corporate engagement topics—like transparency requests—into public expectations of all portfolio companies, which should be reinforced by systematic stewardship action (such as votes against directors).

Further, asset managers in private asset classes are critical to meeting decarbonisation targets. Members requests are detailed in the [Net-zero Asset Owner Alliance Call to Action to Private Market Asset Managers](#). The expansion of activities beyond corporate engagement should include sector and policy engagement, as further described in the Future of Investor Engagement (see Table III). As of this edition of the Protocol, the Sub-portfolio Targets chapter also covers private assets.

Table II: Alliance members’ net-zero engagement requests to all asset managers

Alliance members’ net-zero engagement requests to all asset managers
<ul style="list-style-type: none"> ■ To publicly commit to support the transition to a net-zero world by 2050 in line with no or limited overshoot 1.5°C scenarios. ■ To commit their entire portfolios to 1.5°C alignment and net-zero by 2050, preferably through an established framework like the Net-Zero Asset Manager Initiative. ■ To collaborate with Alliance members in developing viable opportunities to finance the transition to net zero and expand the 1.5°C-aligned investable universe, including through collaboration on blended finance vehicles (NZAOA 2022). ■ To publish their approach to integrating climate risks and opportunities (both transition and physical) across their portfolio management and stewardship team’s training and activities. ■ To clearly state the benefits and limitations of their climate engagement program(s) and/or stewardship activities and how the limitations are addressed via complementary work streams, including how they leverage public discourse. ■ To clearly describe how their engagement approach differs across asset classes, what levers of influence are applied to each, and how their approach supports portfolio decarbonisation objectives. This includes requiring 1.5°C-aligned strategies in companies where the asset manager has significant control. ■ To use systematic engagement approaches to streamline engagement efforts, where possible. For example, call publicly for company or sector action and systematically reinforce expectations through principle and merit-based voting as detailed in the Alliance Guidelines. ■ To adopt policies that are congruent with the Alliance’s position papers, for example the Alliance’s Thermal Coal Position.

Source: Net-Zero Asset Owner Alliance original work

Setting engagement targets

All engagement activities **seek to achieve a common outcome**: to increase the alignment of the real economy with a 1.5°C no or limited overshoot scenarios. Therefore, to meet the Alliance net-zero engagement commitments, members **shall** set targets to conduct engagement, or have engagements conducted on their behalf. These targets **should** be reported in the form of KPIs from the common KPI framework (see Annex) for at least two and where possible all four of the following identified forms:³³

- **For corporate engagement:** Identify either i) 20 companies with a focus on companies that will likely have the largest real-world decarbonisation impact (e.g. those with the highest owned emissions in their portfolios), or ii) the companies responsible for at least 65 percent of owned emissions in their corporate bond/equity portfolio; and ensure these companies are covered by either direct, collaborative or initiatives-based³⁴ engagement activities, in line with the Alliance’s ambition.³⁵
- **For sector engagement:** Take part in Alliance sector workstream to develop pathways and scenarios for net-zero aligned decarbonisation at sectoral level or contribute to reports and engagement activities for existing sectoral workstreams outside of the Alliance (such as CA 100+ Global Sector Strategies Workstream).
- **For position paper contributions:** Take part in the engagement track working group and support the drafting of Alliance position papers or contribute to other initiatives to develop public position papers on net-zero focused topics in line with the Alliance’s ambition.
- **For asset manager engagement:** Set up or maintain a structured engagement approach that encompasses selection, appointment, and monitoring activities of asset managers. The approach should utilise the request of asset managers described below and the guidelines developed by the Alliance engagement track to support long-term alignment of asset managers’ activities with the Alliance members’ interests.

33 The Alliance members are of different size, geography, and business nature; therefore, they have different engagement strategies, and operations, thus a one-size fits all approach does not fit, and the Alliance identifies a set of ways in which the members can set and report on targets.

34 When relying on engagement through initiatives, the asset owner or their asset manager/service provider must be a member of that initiative

35 Non-aligned refers to those which do not already have Paris Aligned commitments, or do not have a concrete set of mid-term reduction targets. Alignment with PAII or CA100+ benchmarking criteria is encouraged.

Guidance for Alliance aligned engagement ambitions

In order to ensure alignment with the Alliance’s ambition, the following section provides guidance to Alliance members on the expectations of their engagement activities with companies and asset managers in order to ensure alignment with the Alliance ambition

By focusing on common goals, the delivery of positive real-world outcomes (by expanding the coverage of companies and asset managers engaged by Alliance members net-zero expectations), and enhanced collaboration, the Guidance for Alliance Engagement Ambitions is consistent with the PRI Active Ownership 2.0 framework (PRI 2019).

Table III: Alliance members’ net-zero engagement requests to all companies

Alliance members’ net-zero engagement requests to all companies
<ul style="list-style-type: none">▪ To publicly commit to support the transition to a net-zero world by 2050 in line with no or limited overshoot 1.5°C scenarios;▪ To immediately put into place strategies and transition plans that commit the company to net-zero GHG emissions across their value chains by no later than 2050 and to be supportive of the transition to a net-zero GHG emissions world by 2050;▪ To accelerate progress towards full ‘green’ on the CA100+ Net Zero Company Benchmark indicators; if not a CA100+ focus company, to still meet all of its expectations;▪ To set science-based near-term GHG reduction targets that are in line with reaching net-zero emissions by 2050, consistent with 1.5°C no or limited overshoot scenarios;▪ To develop and implement plans for their businesses to remain viable in a carbon neutral economy, with meaningful consideration of associated social impacts;▪ To support the adoption and implementation of governmental policies and regulations that facilitate the transition to net-zero emissions within their sector and value chains;▪ To support, prepare for, and not disrupt implementation of carbon pricing mechanisms;▪ To take action and make progress on efforts to lower GHG emission intensity of their operations and products;

- To disclose their efforts and progress on decarbonisation in line with the four core elements of the TCFD recommendations; and
- To enter direct time-bound engagement dialogue with Alliance members and/or other investor initiatives to discuss efforts to decarbonise their business by 2050.³⁶

Source: Net-Zero Asset Owner Alliance original work

Alliance seeks to hold itself and its activities to the same standards that guide its requests from investee companies, asset managers and policy makers. Therefore, in light of the Alliance's support for the CA100+ Net Zero Company Benchmark—as a useful tool for engaging companies and asset managers—the Alliance evaluated the indicators that are relevant for its own activities.

Climate Action 100+ and the Net-Zero Company Benchmark

[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 through workload distribution.

CA100+ developed the Climate Action 100+ Net-Zero Company Benchmark—the 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 this Protocol. However, as financial institutions differ from real-economy companies, some elements of the benchmark do not make for an analogous comparison.

³⁶ However, companies should not discuss nor share information which could trigger antitrust or other regulatory laws and regulations or amount to insider information.

Diagram V: CA100+ Disclosure Framework Indicators

- 1 Net-zero GHG emissions by 2050 or sooner ambition
- 2 Long-term (2036–2050) GHG reduction target(s)
- 3 Medium-term (2026–2035) GHG reduction target(s)
- 4 Short-term (up to 2025) GHG reduction target(s)
- 5 Decarbonisation strategy
- 6 Capital allocation alignment
- 7 Climate policy engagement
- 8 Climate Governance
- 9 Just Transition
- 10 TCFD Disclosure

Source: Adapted from CA100+ (2022)

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

Setting medium- and long-term targets plays an important role in achieving the net-zero by 2050 target as it establishes accountability and signals to the broader business and regulatory community that asset owners expect real-world decarbonisation. It is by publishing both short-term targets on a five-year cycle and a long-term target in line with the IPCC's no or limited overshoot scenarios that the Alliance believes its members are moving on a credible 1.5°C decarbonisation trajectory.

As portfolio targets depend on the decarbonisation speed of investee companies, Alliance members' targets must rely on a constant feedback loop from real-world decarbonisation. Otherwise, target-setting could lead to forced divestments from specific sectors before all stewardship and engagement have been exhausted. 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. By Alliance members 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 with no or limited overshoot pathways, their mid-term targets are then implicitly made.

Indicator 7: Climate policy engagement

Alliance members strive to align all climate policy engagement with the goal of accelerating the transition to a 1.5°C-aligned future. In this context, members **should** review their membership and participation in all industry associations and organisations. For transparency, members **should** also disclose their climate policy positions and memberships. Furthermore, members **should** consider taking an advocacy position within organ-

isations that do not align their own advocacy with the Paris Agreement and the goals of the Alliance. If following a time-bound engagement, organisations are not displaying a willingness to become Paris-aligned, Alliance members **should** consider cessation of their membership.

When applying the CA100+ benchmark, certain aspects of financial institutions' activities cannot be evaluated in the same way as those of companies. For example, sovereign wealth funds are legally advised to avoid political positions or lobbying activities. Therefore, SWFs cannot engage on policy the same way as other asset owners. 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. Asset owners can gauge a company's level of Paris-alignment through evaluation of its lobbying activities. Through engagement, asset owners can ask for lobbying alignment where necessary.

Indicator 10: TCFD disclosure

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

The Future of Investor Engagement: Systematic stewardship for systemic climate risk

Limiting global temperature rise to 1.5°C requires supportive economic and policy frameworks. Engaging with assumptions that would require individual companies or entire sectors to cease to exist while their products remain in demand and economically viable is not a practical strategy for success. Thus, broad-based engagement with companies and asset managers will be successful only if complemented by a policy and regulatory framework conducive to 1.5°C alignment across all geographies and all sectors. Therefore, corporate engagement, which has traditionally been the primary focus of stewardship, is a necessary but insufficient tool for achieving the Alliance's commitment.

The Alliance has published The Future of Investor Engagement discussion paper, detailing how the financial community can address the limits of corporate engagement. The paper details how investors can complement corporate engagement through sector and policy engagement, which drive real-world decarbonisation in line with members' long-term interests.

Policy engagement is critical to ensure both feasibility of decarbonisation for all sectors and a substitution of products from sectors unable to decarbonise in a way that mitigates social risks.³⁷ Sector engagements, including those conducted through the CA100+ Global Sector Strategies, help uncover the needed policy direction for enabling real world decarbonisation.

37 A common position on the Just Transition is not yet defined by the Alliance, but related guidance for individual members may be found [here](#)

In addition, the Alliance believes that it is critical for asset managers to hold themselves, and the companies they invest in, accountable so that companies do not lobby against the Alliance's broad-based and systemic interests or the interests of society and the greater economy as a whole. Stewardship executed on behalf of the Alliance should thus include a focus on indicator 7 from the CA100+ Net Zero Company Benchmark. This should set the expectation that companies demonstrate how their lobbying activities align with the benchmark expectations. The Alliance's expectation is that an equivalent standard should still be met by companies not part of the CA100+ focus.

Policy engagement

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 aligning with the Paris Agreement.

Asset owners, especially those that set portfolio targets (dependent on real-economy decarbonisation) are in a unique position in the financing value chain. The Alliance's policy track seeks to amplify investor voices and their requests for a supportive policy and regulatory environment.

Policy track working methods

The policy track will operate primarily through:

1. Direct engagement with politicians/officials of target countries including on accounting and audit standards and practices;
2. Calling for standards that ensure integrated reporting;
3. Addressing private letters to officials from Alliance members;
4. Attendance and participating in UNFCCC processes (i.e. participation with the Standing Committee for Finance UNFCCC COP engagements)
5. 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 the Alliance's ambition.
6. Inviting Alliance members to consider signing investor statements, where appropriate;
7. Addressing letters to target countries or multilateral fora; and
8. Media activities.

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, policy engagement contextualised for specific markets is also encouraged.

The Alliance's policy track has developed a strategy to work on three priorities:

- advocating for the alignment of intermediate 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.

In the execution of this strategy, the track leverages the Alliance's positions; for example, it cites the disclosure recommendations or sector policies. The Alliance also advocates for financial market regulation and supports frameworks that enable effective financing for the net-zero transition (e.g., disclosure requirements in line with TCFD recommendations, development of country-specific transition plans, and raising awareness of climate risk impact).

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

The new round of NDC submissions required under the Paris Agreement has seen enhanced commitments and emissions reduction plans but NDCs continue to fall short of putting the world on track for 1.5°C. Maximising the opportunity presented throughout 2022 and into 2023 to further advance NDCs and national plans is a key goal for the policy track.

Targeted goals

1. 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
2. Implement net-zero commitments and trajectories via best practice national policy mechanisms, including: climate legislation enshrining the net-zero commitment; 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

Sector policies are a key component of effective climate policy, and 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

1. Elimination of direct and indirect fossil fuel subsidies;
2. 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, sale of new internal combustion engine vehicles;
3. No-deforestation, No-peat and No-exploitation (NDPE)³⁸ (NDPE);
4. Support for enhancement of natural capital, and a net-zero pathway for agriculture;
5. 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, green hydrogen;
6. Sectoral net-zero policies for key economic sectors: energy, power, industry, agriculture, auto- motive, aviation, and shipping; and
7. Commitment to develop granular short, medium, and long-term zero carbon infrastructure plans.

Promotion of mandatory climate reporting and transition plans

Supporting the COP28 presidency, the Alliance provided, and will continue to provide investor support for mandatory TCFD reporting and net-zero transition plans in advanced markets.

38 Refers to no exploitation of the rights of indigenous peoples, workers and local communities.

5. Sector targets

The guidance for setting targets serves to:

1. Define appropriate carbon reduction pathways for high-emitting sectors;
2. Inform member's engagement efforts, identifying desirable emissions level outcomes;
3. Support decisions to invest in companies implementing climate solutions designed to reduce their emission intensity; and
4. Inform portfolio construction, sectoral allocation and target setting at the Member level.

Setting sector targets—minimum coverage

Setting sector targets is a relatively new exercise for asset owners. Therefore, Alliance members who set sector targets **shall** progressively implement sector targets, beginning with their most material sectors (from an owned-carbon emissions standpoint). Each Alliance member is unique and will identify specific targets for their respective assets. Members **shall** set targets independently and in a manner that accounts for their specific investment scope, strategies, and internal governance structures.

Members setting sector targets as of 2023 **shall** cover the sectors of the inaugural protocol—O&G, Utilities, including Coal, Transportation and Steel—at a minimum. If data availability or exposure limits an asset owner in setting targets on the initial sectors, members **shall** add sectors identified in TSP V2 (see chart below). If members are unable to set targets on all required sectors, they **shall** fully explain their constraints (e.g., data availability or no exposure to the sector) and **shall** ensure that at least 70 percent of their total owned emissions are covered by 2025.³⁹ Alliance members **shall** set targets using **productivity-based metrics** wherever possible before using economic-intensity metrics.⁴⁰

The identified threshold for setting targets at sector level should be commensurate with both the member's portfolio size and the portfolio emissions profile both in absolute and relative terms. When selected Alliance members **shall also** report the absolute emissions reductions associated with the necessarily intensity-based targets described below.

39 If a minimum of 70% is not covered by 2025 the member would not be able to use sector targets as one of their 'three of four' target types.

40 Alliance Calls on data providers to support the collection and dissemination of the following metrics, [here](#).

Table IV: Targeted Sectors for Sector Target Setting

Targeted sectors:	
Inaugural Target Setting Protocol	Second Target Setting Protocol
<ul style="list-style-type: none"> ▪ Oil and gas ▪ Utilities, including coal (26–39% of global emissions) ▪ Transport <ul style="list-style-type: none"> ▪ Civil aviation (2–3% of global emissions) ▪ Shipping (2–3% of global emissions) ▪ Road transport (11–17% of global emissions) ▪ Materials <ul style="list-style-type: none"> ▪ Steel⁴¹ 	<ul style="list-style-type: none"> ▪ Materials <ul style="list-style-type: none"> ▪ Cement ▪ Aluminium ▪ Agriculture, forestry, and fisheries ▪ Chemicals ▪ Construction and buildings ▪ Water utilities ▪ Textiles and leather

Recommended metrics

The Alliance prioritises **productivity-based metrics** wherever possible before using economic intensity metrics. However, relevant productivity-based data may be limited. For this reason the Alliance issued a [Call to Action](#) to companies and data provider to provide critical sector data. The requested data is elaborated by sector in the Table V below.

Table V: Overview of recommended productivity-based metrics

Sector ⁱ	Requested Data <i>*Reported as of current date, and forward looking at 5 years and 10 years</i>
Oil and Gas ⁱⁱ	<ul style="list-style-type: none"> ▪ gCO₂(e)/ MJⁱⁱⁱ ▪ gCH₄/MJ^{iv}
Utilities	<ul style="list-style-type: none"> ▪ tCO₂(e)/MWh^{v,vi} ▪ gCH₄/MJ^{vii}
Transportation—Aviation	<ul style="list-style-type: none"> ▪ gCO₂(e)/RTK (reported separately for short- and long-haul flights)
Transportation—Shipping	<ul style="list-style-type: none"> ▪ gCO₂(e)/TKM^{viii}
Transportation—Heavy duty road	<ul style="list-style-type: none"> ▪ gCO₂(e)/TKM
Transportation—Light duty road	<ul style="list-style-type: none"> ▪ gCO₂(e)/KM
Cement	<ul style="list-style-type: none"> ▪ tCO₂(e)/tonne of cementitious product
Steel	<ul style="list-style-type: none"> ▪ tCO₂(e)/tonne of crude steel^{ix}
Aluminium	<ul style="list-style-type: none"> ▪ tCO₂(e)/tonne of aluminium^x
Agriculture	<ul style="list-style-type: none"> ▪ tCO₂/tonne of agricultural product ▪ CH₄/tonne of agricultural product ▪ NO₂/tonne of agricultural product

⁴¹ Various sources including IPCC, WRI, and the US Department of Energy

Forestry	<ul style="list-style-type: none"> ▪ tCO₂(e)/tonne of forestry product <ul style="list-style-type: none"> ▫ For Paper: tCO₂(e)/tonne of pulp, paper and paperboard
Construction and Buildings	<ul style="list-style-type: none"> ▪ CO₂(e)/m²/annum ▪ kWh/m²/annum
<p>i. Please see Alliance Target Setting Protocol Annex for NACE/GICS/BICS mapping of sector classifications.</p> <p>ii. It is noted that 2020 was an exceptional year for the O&G and other industries and this particular year should be carefully considered and accounted for if used as a base year for target setting.</p> <p>iii. Scope 1, 2 and 3 (use of sold product) greenhouse gas emissions from energy products sold externally in units of grams of CO₂ equivalent (gCO₂e) per mega joule (MJ). “Energy products sold externally” is defined by the Transition Pathway Initiative (TPI) as the total net calorific energy supply from all fuels including hydrocarbons, biomass and waste, plus energy supplied as electricity generated from fossil fuels, nuclear or renewables.</p> <p>iv. The Alliance encourages all relevant companies to join the Oil and Gas Methane Partnership (OGMP2.0).</p> <p>v. Metric tonne is indicated by “t”. “CO₂e” is used here and is requested by some, while TPI requests “CO₂”.</p> <p>vi. Scope 1 of owned gross electricity generation, excluding purchased electricity.</p> <p>vii. The Alliance encourages all relevant companies to join the Oil and Gas Methane Partnership (OGMP2.0).</p> <p>viii. Please note that current TPI methodology considers emissions related to marine shipping in international waters only. We believe that it would be useful for companies to provide an intensity for all shipping activities and disaggregate these measures by international, coastal, and inland waters.</p> <p>ix. Where possible reporting separately for primary and secondary.</p> <p>x. This should include emissions from alumina and aluminum production, both normalised to a tonne of aluminum.</p>	

Three steps for setting sector targets

The global carbon budget⁴² as referenced by the Alliance is the cumulative amount of carbon and other GHG emissions the world can permit until the end of the century to keep within a 1.5°C threshold. Sector targets are conceptualised so as to allocate this remaining carbon budget across economic sectors and split by geographic locations, using a set of economic and technological assumptions compatible with 1.5°C pathways.

There are three steps involved in setting sector targets. Alliance members **shall**:

1. Identify the most material sectors in the investment portfolio on an owned-emissions basis;
2. Identify available carbon emission metrics for the identified sectors;
3. Select a modelled sector pathway to be applied to each sector and apply a target relating to the selected carbon emission metric.⁴³

⁴² For a given warming level, WGI assessed the remaining carbon budget from the beginning of 2020 onwards. These are 650 / 500 / 400 GtCO₂ for limiting warming to 1.5°C with 33% / 50% / 67% chance.

⁴³ Where governments and regulators have set required sectoral targets, these derived targets could be checked against the required sectoral targets to see if they are aligned.

As described in the Annex, a small number of models/scenarios are known to provide sector decarbonisation pathways for both total CO₂e emissions on Scope 1 and 2, and on a sector product/production specific level using an output intensity metric. At this time, Alliance members **should** use either the [One Earth Climate Model \(Teske et al. 2020\)](#) or the IEA model to set sector targets.⁴⁴

Step 2 in detail: Identifying carbon emissions metrics for identified sectors

The recommended metric is product/production metric-based sector targets which, for example, can be measured, for the steel sector, in CO₂e per ton of steel produced or for the automotive sector, in CO₂e per km of produced cars. We acknowledge that the lack of data availability or unreliable/weak data is an issue for asset owners when it comes to using product/production metrics to set sector targets as the data required to set sector targets need to be sourced at a company level. However, the Alliance strongly recommends members to set sector targets using production metrics. One of the advantages of using the product/production specific sector targets is that these are largely independent of economic variables such as revenue and have no market or price volatility, making it easy to track the real emissions reductions in isolation, and also to compare performance between companies.

The second metric is carbon intensity-based sector targets based on EV or Revenue, using the same calculations as described on Chapter 3 for carbon intensity. Carbon intensity-based sector metrics are easily available but are dependent upon economic variables (such as revenue), and mainly cover Scope 1 and 2 in the sector decarbonisation pathways.

The third metric is absolute emissions-based sector targets. The pros and cons of using this metric are described in Chapter 3. 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.

Scope of emissions covered by sector targets

Alliance members **shall** set sector targets on Scope 1 and 2, as well as track and report on Scope 3 emissions.

Scope 3 is especially material for the oil and gas sector as these are inputs for many industrial production processes. Initially, the Alliance will focus on the demand side, setting sector targets for, for example, the transportation and steel sector. Due to data availability and lack of consistent metrics for Scope 3 within the oil and gas sector, we do not currently recommend setting carbon-intensity-based Scope 3 sector targets for oil and gas in the short term. To ensure that we have better, comparable Scope 3 data for the next target setting period, the Alliance will work to clarify the definition of Scope 3 emissions and provide open-source data for the largest oil and gas companies in the coming years. For the automotive sector, Scope 3 emissions can be addressed through product specific targets, such as CO₂e per km of produced automobiles.

⁴⁴ See detailed comparison between the sector pathways in the Annex.

Sector targets related to the fossil fuels

Sector targets for utilities and energy sectors should reflect the scientific consensus, as derived from the IPCC no or limited overshoot pathways, IEA NZE2050 and OECM, to withdraw financing from new coal related assets and new Oil and Gas fields and respectively refrain from investing in, or providing finance to, assets that support the expansion of coal, oil, or gas production and to scale down production as indicated in the scenarios. The Alliance has developed a position paper on Thermal Coal and is pursuing a position paper on Oil and Gas.

More detailed information on the rationale, way forward and recommended metrics for sector targets of high emitting sectors, as well as a comparison of key models is included in the Annex.

6. Climate solution investment targets

Alliance Financing Transition work track's overall strategy and overview, and Climate Solution Investments target

The Alliance's work and overall efforts are on investment portfolio alignment to net-zero and financing the transition. This track focuses on enlarging the scale, pace and geographic reach of net-zero aligned investments via providing higher transparency, de-risking of higher risk related climate solution investments ('technologies of tomorrow' and investments in non-OECD countries), supporting finance the transition in the emerging economies and knowledge sharing and building. Investing in climate solutions is one aspect of this effort. This is the focus on investing in "green".

In addition, the objective of the track is to support the growth in climate solution investments within the Alliance members' investment portfolios.

In this Protocol, the Alliance track explicitly considers transition enabling investments as high impact investments which substantially contribute to the transition. The goal is to equip members with best practices to invest in and shape a just transition for a sustainable, and net-zero economy.

Because asset owners have a fiduciary responsibility to achieve a given level of risk/return, climate solution investments are required to be as economically viable as other investments. The Alliance therefore strives to collaborate with all stakeholders e.g., public finance institutions like DFIs and MDBs, policy makers, asset managers and other stakeholders to work on de-risking mechanisms and enlarging the supply of climate solution investment opportunities.

Definition of “climate solution investments”

To enable consistency across the Alliance membership, a definition for “climate solution investments” has been established taking into account publicly available definitions:

Climate solution investments are investments in economic activities considered to contribute to climate change mitigation (including transition enabling) and adaptation, in alignment with existing climate related sustainability taxonomies and other generally acknowledged climate related frameworks.⁴⁵

In order to be considered climate solution investments, asset owners shall conduct a credible assessment that the economic activities contributing to the objectives of the investment do not cause significant harm to people and the environment.⁴⁶

Climate solution targets and reporting

Climate solution investment targets ensure that Alliance members use the resources and capacities available to them to grow net-zero solutions also in their investment portfolio. Alliance members are asked to build on their network of governments, asset managers, industry, and other stakeholders to contribute to this overarching target. Asset owners shall support the growth of climate solution investments as defined above, in line with and supportive of the domestic context and aspirations of national governments. Many national governments are working on taxonomies and reporting requirements, as well as enhancing the useability of NDCs and other national climate plans, which is a positive development. Such collaboration among policy and industry bodies is important.

All members **shall** report annually to the Alliance Secretariat their solution investments and it is expected that this demonstrates a positive trend in climate solution investments over time. To be able to claim a climate solution investment target achievement, members **shall** make active contributions to the Alliance’s Financing Transition working or consultation groups. In addition, it is optional for members to disclose their solution investments publicly and/or set a (public) target on climate solution investments.

In line with the Alliance commitment and reporting requirements the Alliance members **shall** disclose in public every 5 year on climate solutions investment growth.

45 The Alliance will provide respective guidance for its members via a separate internal document

46 In line with existing applicable frameworks for example EU Taxonomy

Table VI: Financing transition—Climate solution investment target setting

Targets	<p>1. For all Alliance members: reporting climate solution investments to the Alliance and ideally showing a positive trend in climate solution investments over time (individual public quantitative progress <i>target</i> is optional)</p> <p>AND</p> <p>2. For Alliance members claiming climate solution investment target achievement: active contributions to Alliance’s Financing Transition working or consultation groups</p>
Reporting to the Alliance	<ul style="list-style-type: none"> ▪ Climate Solutions inventory (base year) and annual progress shall be reported for public aggregation, as defined in the Protocol, is relevant for all members ▪ Metric: Assets under Management of climate solution investments portfolio; for listed or private equity/debt revenue share in “green or enabling activities/products” is proposed; EU or any other taxonomy compliant (optional) ▪ Report on OECD and non-OECD countries (recommended)

Contributions to the financing transition track and working groups

The Financing Transition track works on content via the following working groups

- i.** Blended Finance
- ii.** Climate Solutions Investment Platform
- iii.** Climate Solution Target Setting & Reporting
- iv.** Net-zero aligned Benchmarks
- v.** Emerging Markets Transition Investment

The track has one consultation group which will be consulted whenever needed:

- i.** Carbon Credits

Actively contributing to these working and consultation groups is a prerequisite for Alliance members to achieve their climate solution investment targets. This includes active contribution to delivering content e.g., via developing guidance for climate solution reporting, consulting to respective topics, support developing guidance for a climate solution investment platform or establishing relationships with other initiatives. Going forward, more working groups might be added as requested by the members.

7. Sub-portfolio targets

Members' sub-portfolio targets *shall* strive for science-based carbon reductions as described above in the range of -22% to -32% by 2025, and -40% to -60% by 2030.

Sub-portfolio targets *shall* cover Scopes 1 and 2 of the underlying holdings, while tracking Scope 3 of the following asset classes: listed equities, publicly traded corporate bonds, infrastructure, private loans to listed companies where appropriate, private equity and real estate asset classes. These should be covered independently or in aggregate.⁴⁷

Alliance members *shall* be transparent regarding the scenarios they use to inform their targets.

Sub-portfolio targets represent an Alliance member's direct commitment to decarbonising their portfolios. Together with the sector targets, the sub-portfolio targets are the most significant quantitative component of the Alliance's target setting framework and reporting rubric. Sub-portfolio targets aim to guide a decrease in the underlying emissions profile of the portfolio. They enable an aggregate ambition and monitor progress, notably achieved through engagement and financing activities.

The TSP requires below that when setting sub-portfolio targets, members *shall* publicly disclose targets and report accordingly. These requirements are outlined below individually for each investment type. Members may choose to fulfil these obligations either per investment type individually or by using a portfolio approach—setting and disclosing targets for a pool of investments, which encompass investment types mandated by the TSP.

Guiding principles

Methodology principles:

1. Methodology *shall* be guided by science and in line with 1.5°C degree no or limited overshoot scenarios.
2. Methodology *should* first be defined by the underlying asset class (e.g., Real Estate, Corporations) and secondly by the investment vehicle (e.g., direct vs. fund) and the investment type (e.g., debt vs. equity).
3. Methodology *should* not fundamentally differentiate between listed and unlisted financing instrument.⁴⁸

⁴⁷ Members may also use the same approach to cover private loans to listed companies where relevant.

⁴⁸ The Alliance believes methodologies for all asset classes should converge, however we note there are differences between the maturity level of listed and non-listed companies.

4. Methodology **should** acknowledge that there are fewer levers of influence with existing book, where only engagement is possible, while there are more levers of influence for new investments, where a phase-in of strict requirements may be possible.

Timeline Principles:

5. Targets **should** cover direct investments before fund investments; equity investments before debt investments; and majority investments before minority investments. This sequence is put forward based on the asset owners' capacity to exercise influence.
6. Targets **should** cover the higher-emitting asset classes and sectors first.⁴⁹
7. Alliance members **should** phase in targets as soon as possible, where reliable data and sufficient investment options exist.

and

8. Where relevant, and especially in private assets, asset managers **shall** be engaged throughout 2023 so as to report FY23 Scope 1, 2 and 3 (where possible) GHG emissions in 2024. In this way, Alliance members will start reporting carbon emissions in all asset classes by 2025.

Types of assets

This Protocol distinguishes between assets based on whether they are invested:

- in corporations (incl. Infrastructure) or real estate
- as equity or debt
- directly or indirectly where indirect investments are also called “funds” and are defined as all investments in vehicles and structures
- where the asset allocation is done by an external asset manager and the vehicle is not consolidated on the asset owners IFRS (or similar) balance sheet, and/or
- in a “blind pool”, where the asset owner commits a certain amount into the vehicles' investment strategy not knowing the individual investments at the time of commitment.

A note on private assets

For all private asset classes, the Alliance strongly urges for emission transparency through GHG reporting of the underlying assets. Without detailed emissions data, the impact of investments on climate cannot be understood or even managed. Thus, the Alliance sees the need to set emission reporting targets as in order to set in the next step meaningful intermediate decarbonisation targets. The Alliance requests towards asset managers in private markets were formulated in a [Call to Action](#) (2022).

49 For significantly small GPs: If materiality does not apply due to limited asset class, sectors or asset exposure, any action on mitigating climate change is appreciated by AOA.

A note on high-emitting assets to be decommissioned

Dedicated “phase-out” strategies of high-emitting assets, aligned with no or limited overshoot 1.5°C pathways, are supported by the Alliance. In cases where Alliance members hold or buy assets that are emission intense or in hard-to-abate sectors with a well-defined strategy to decarbonise these assets, sub-portfolio targets may be adjusted to reflect these additional exposures with respect to the fact that the reduction of industrial emissions of this nature may be slower than the trajectories used to set portfolio-wide targets (which are sector agnostic planetary averages). **Members shall transparently explain how they will integrate such phase-out strategies in their sub-portfolio targets.**

Phase-in schedule

The Alliance recognises that with the expansion of the Protocol it may be challenging to track the phase-in schedule for asset classes under the sub-portfolio target. Therefore, the Alliance developed the following table (Table VI), based on the principles described in the section above, and builds on the previous TSPs into future TSP work.

Carbon Reporting: By the indicated time, carbon reporting **shall** be in place for all new investments. For existing assets, carbon reporting **should** be in place.

Target Setting: By the indicated time, all new investments **shall** have decarbonization targets based on the methodology outlined in the respective subsection.⁵⁰ Existing assets **should** have decarbonisation targets adopted.

Table VI: Carbon Reporting and communicated Target Setting for each Asset Class

Asset Class	Methodology in Target Setting Protocol	Carbon Reporting (YE)	Target Setting Communicated (YE)
Corporate & Infrastructure Equity			
Listed Equity (incl. REITs, Funds)	V1	2021	2021
Private Equity High-Emitting Infrastructure (direct), Board Seat or >20% OS	V2	2022	2022
Private Equity direct (incl. low emitting infrastructure)	V2/V3	2024	2025
Private Equity & Infrastructure Funds	V3	2025	2026
Corporate & Infrastructure Debt Finance			
Publicly Traded Corporate Debt **	V1	2021	2021
Private Loans to High emitting infrastructure	V2	2022	2022
Private Loans to Unlisted / privately-held companies & infrastructure (low emitting)	V2/V3	2025	2026
Private Debt Funds	V4	tbd	tbd
Real Estate			
Directly-held Real Estate Assets	V1	2021	2021

⁵⁰ As for all elements of TSP, recommendations come into effect in the next reporting cycle or 12 months after publication of the TSP. Similarly here, the recommendation applies to “new investments” which are bought 12 months after publication of this TSP.

Commercial Real Estate Loans (CMLs)	V3	2025	2026
Real Estate Equity Funds	V3	2025	2026
Real Estate Debt Funds	V4	tbd	tbd
Residential Mortgage Loans (directly)	V4	tbd	tbd
Public Debt			
Sovereign Bonds	V3 (Accounting)	2023	tbd
Supra, Sub-sovereign, Municipal Bonds	tbd	tbd	tbd
US Agencies	tbd	tbd	tbd
Securitised Products (ABS/MBS)	tbd	tbd	tbd
Covered Bonds	tbd	tbd	tbd
** private loans to listed companies should be included as of TSPV2 where possible. Where this is not possible they should follow the timeline for private loans to unlisted companies			

Adjustments for growth for absolute emission targets

Where a member sets targets on absolute emissions an adjustment for extensive variation in portfolio size (either organic or inorganic) may be necessary.

For instance:

- If a portfolio grows significantly faster or slower than the average GDP over time, a target adjustment could be made. The climate models used by Alliance members to define their CO₂e reduction targets usually assume GDP growth based on World Bank data suggesting a 3% global average growth rate (see Table to the right).
- If a portfolio might vary significantly in size due to its structure, members may express footprint targets per million (volume) invested. In this way, members would both encompass inflows in their target setting scope and neutralise the bias resulting from capital flows.

Region	Growth rate
OECD North America	2.1%
OECD Pacific	1.3%
OECD Europe	1.5%
Eastern Europe/Eurasia	2.5%
Middle East	3.4%
Latin America	2.8%
China	4.2%
Africa	4.4%
India	5.6%
Non-OECD Asia	3.6%
Global	3.2%

Adjustments based on Merger and Acquisitions (M&A) activities

Merger and Acquisition (M&A) transactions may require an adjustment to sub-portfolio targets. For the adjustment, a linear reduction between base year and target year is assumed. The emissions of the acquired (or sold) portfolio are measured at transaction time and the adjusted portfolio will then receive a new target. It is the responsibility of each Alliance member to decide whether an M&A transaction is large enough to justify a new target and to properly document the adjustment if a new target is set.

	Company A	Company B	Company A+B
Base date	31.12.2019	30.06.2021	
Target date	31.12.2024	31.12.2024	31.12.2024
Share in target timeline	100%	70%	
Reduction	-25%	-18%	
CO ₂ emissions @base date	100	35	
Target CO ₂ emissions	75	28.9	103.9

For example, Company A sets targets with base date 31.12.2019 and absolute reduction of -25% in five years (target date: 31.12.2024), reducing emissions from the 100-pt base-line figure to 75pts. Company A acquires Company B on 30.06.2021 with emissions of 35pts at that date. As the remaining time until the target date (31.12.2024) is 70% of the initial five-year period, Company B needs to reduce emissions by 18% from 30.06.2021 to 31.12.2024 and the new joint emissions target is 103.9pts. The calculation adjustment is detailed in the table above.

Matching portfolio information with emission data

The following considerations may be useful to Alliance members when selecting their emission data matching and reporting principles:

Option 1

Matching reporting year financial data (e.g., 2020) with corresponding CO₂e data (e.g., 2020, as available in the second half of 2021):

Advantages:

- Data reflects an adequate snapshot of financed emissions at a certain point in time.

Drawbacks:

- Portfolio decisions need to be made before data becomes available. Most data providers collect data from CDP, which only releases data during Q3. Accordingly, data tends to only become available for >80% of a portfolio in Q4. This causes reporting lags of at least one year and requires additional ex-post data matching for the purpose of reporting.

Option 2

Matching reporting year financial data (e.g., 2020) with most recent CO₂e data (e.g., most recent at year-end 2020):

Advantages:

- Latest available data, although backward looking, can be fed into portfolio management systems as soon as it becomes available.
- Portfolio decisions are made on latest available data.

- Data systems can run in sync with standard data processes such as system freezes, audit schedules, etc.
- Reporting can be adjusted to annual/sustainability report cycles without artificial time lags.
- Some regulation (such as upcoming EUSFDR or FrenchArt173) requires up-to-date reporting which is only possible by matching year-end financial data with most-recent emission data.

Drawbacks:

- Financed emissions systematically combine current portfolio holdings with reported emissions that are 1–2 years old by the time they become available, creating backward looking financed emissions.

Alliance members **should** choose a reporting principle before calculating the target baseline and refer to the methodology chosen in target reporting. Additionally, the approach should be applied in subsequent time periods, and where adjusted this **shall** be clearly communicated.

Communicating target adjustments

While less applicable for intensity-based targets, all adjustments made to targets and methodologies **shall** be communicated in a transparent way, explaining the reasons and the methods in detail.

Corporations

Publicly-traded assets

Table VII: Listed Equity and Publicly Traded Corporate Debt Overview

Listed Equity and Publicly Traded Corporate Debt	
Definition	A corporation is a legal entity that is separate and distinct from its owners. A listed corporation refers to any corporation whose shares are listed on a stock exchange. Publicly traded corporate debt refers to bonds issued by these corporations. Debt or equity investments are all forms of loans, bonds or shares which provide financing to these corporations.
Emissions in Scope	Alliance members shall set targets on Scope 1 and 2 of underlying corporations. Alliance members should track, but not yet set targets on Scope 3 emissions until interpretation of these emissions in a portfolio context becomes clearer and data becomes more reliable. Alliance members should report on a CO ₂ e basis. ⁵¹

51 Members should report on CO₂e as provided by CDP or similar data providers.

Accounting Approach	Recommended:	
	Formula: Weighted by EV or EVIC	Formula: Carbon Intensity by EV or EVIC
	$\sum_{i=1}^n \left(\frac{I_i}{EV[or\ EVIC]_i} \times C_i \right)$	$\frac{\sum_{i=1}^n \left(\frac{C_i}{EV[or\ EVIC]_i} \times I_i \right)}{\sum_{i=1}^n I_i}$
	Alternatives:	
Weighted by Cap:	Carbon intensity by Revenues	
$\sum_{i=1}^n \left(\frac{I_i}{I_i} \times C_i \right)$	$\frac{\sum_{i=1}^n \left(\frac{C_i}{R_i} \times I_i \right)}{\sum_{i=1}^n I_i}$	
	<p>I: Current value of investment in issuer i</p> <p>EV: Enterprise Value of issuer i</p> <p>EVIC: Enterprise Value incl. Cash of issuer i</p> <p>M: Market Capitalisation of issuer i</p> <p>C: Carbon emissions of issuer i</p> <p>Other initiatives which are utilising similar metrics: TCFD, PCAF</p>	<p>I: Current value of investment in issuer i</p> <p>EV: Enterprise Value of issuer i</p> <p>EVIC: Enterprise Value incl. Cash of issuer i</p> <p>R: Annual Revenues of issuer i</p> <p>C: Carbon emissions of issuer i</p> <p>Other initiatives which are utilising similar metrics: European Union Financial Supervisory Authorities (EBA, ESMA, EIOPA, PCAF, TCFD)</p>
Key Metrics	<p>Absolute: MtCO₂(e) or</p> <p>Intensity:⁵² tCO₂(e)/Mn USD, tCO(e)/EVIC, tCO(e)/Mn USD Revenue</p>	
Data Availability and Sources	Data is readily available and relatively reliable for these asset classes. Multiple sources are available. Data should be audited.	
Scientific Pathway or Benchmark Sources	Net-zero requirements shall be formulated using IPCC's no or limited overshoot global scenarios for 1.5°C. The SR1.5 and AR6 provide ranges of 22–32% for 2020–2025 and -40% to -60% for 2020–2030 respectively.	
Target (incl. Timeline)	When selecting sub-portfolio targets, Alliance members shall publicly disclose targets for listed equity and publicly traded corporate bonds within 12 months of joining the Alliance. Alliance members shall set targets on the basis of absolute carbon emissions or emission intensity.	
Reporting (incl. Timeline)	Alliance members shall report their initial targets in the first reporting cycle following their joining unless the cycle is within 6 months of their adhesion. Alliance members shall report on their progress annually. Alliance members shall report absolute emissions (irrespective of the target type they choose) and should report on both absolute and intensity metrics. ⁵³	

52 If an intensity-based metric is used then members should account, on a disaggregated basis, the portion of the intensity reduction originating from asset purchases and disposals, the portion originating from organic emissions reductions generated by assets in the portfolio and the portion that originates from changes in financial metrics.

53 For more information, please see the Alliance's [Governance document](#), updated in March 2022.

Discussion

Alliance members *shall* set targets on the basis of absolute carbon emissions or emission intensity. Alliance members *shall* report both absolute and intensity-based KPIs.

Definition: A corporation is a legal entity that is separate and distinct from its owners. A listed corporation refers to any corporation whose shares are listed on a stock exchange. Publicly-traded corporate debt refers to bonds issued by these corporations. Debt or equity investments are all forms of loans, bonds or shares which provide financing to these companies.

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 a portfolio's carbon reduction performance by asset owners. Alliance members may therefore set absolute or intensity-based targets, particularly in the early years.

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 reduced carbon portfolios and in measuring progress on carbon emission targets by portfolio companies. Therefore, carbon intensity can play a key role in setting the stage for achieving absolute emissions reductions.
- In a given sector, absolute corporate emissions are highly dependent on the size of the corporate. 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 the size of a company.
- Alliance members may also expect 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 (contributions exceed withdrawals). The opposite may be true for other members. These variations of 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.

Members ***should*** report on both absolute and intensity-based metrics, irrespective of the metric used to set the target. If an intensity-based metric is used then members should account (on a disaggregated basis) for: i) the portion of the intensity reduction originating from asset purchases and disposals, ii) the portion originating from organic emissions reductions generated by assets in the portfolio, and iii) the portion that originates from changes in financial metrics. If an intensity-based metric is reported, it is recommended that either Revenue or EV/EVIC is used.

For intensity-based targets need to counterbalance economic (GDP) growth to lead long-term to the same absolute emissions reductions as absolute emission-based targets. When calibrating targets, members should be aware of the growth assumption inherent in climate models for the regions where their portfolio is invested.

Using market cap is common for equity portfolios. However, as most members of the Alliance are also invested in corporate bonds, the Alliance recommends using enterprise value (or EVIC) to allocate emissions to the relevant parts of the balance sheet (equity/debt).⁵⁴

In general, Alliance members should ensure all calculations (nominators and denominators) are closely aligned. For example, one should choose the 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 reasoning can also be applied to real assets like 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. Due to the Alliance’s long-term view to expanding the Protocol to all asset classes, it has a slight preference for EV/EVIC-based intensity metrics. Readers may refer to TSP1 for discussion of benefits and drawback of different metrics.

Private assets

Table VIII: Private Assets Overview

Private Corporate Assets	
Definition	A corporation is a legal entity that is separate and distinct from its owners. Private Assets for Corporations include private equity funds, private debt funds, private loans to listed companies, private loans to unlisted/private held companies.
Emissions in Scope	Alliance members should set targets on Scope 1 and 2 of the underlying corporations in line with the below target phase-in timeline. Alliance members should track, but not yet set targets on Scope 3 emissions until interpretation of these emissions in a portfolio context becomes clearer and data becomes more reliable. Alliance members should report on a CO ₂ e basis.

54 The Alliance’s recommendation is also in line with the [EU Benchmarks Regulation](#).

Accounting Approach	Recommended:	
	Formula: Weighted by EV or EVIC	Formula: Carbon Intensity by EV or EVIC
	$\sum_{i=1}^n \left(\frac{I_i}{EV[or\ EVIC]_i} \times C_i \right)$	$\frac{\sum_{i=1}^n \left(\frac{C_i}{EV[or\ EVIC]_i} \times I_i \right)}{\sum_{i=1}^n I_i}$
	Alternatives:	
Weighted by Cap:	Carbon intensity by Revenues	
$\sum_{i=1}^n \left(\frac{I_i}{I_i} \times C_i \right)$	$\frac{\sum_{i=1}^n \left(\frac{C_i}{R_i} \times I_i \right)}{\sum_{i=1}^n I_i}$	
	<p>I: Current value of investment in issuer i</p> <p>EV: Enterprise Value of issuer i</p> <p>EVIC: Enterprise Value incl. Cash of issuer i</p> <p>M: Market Capitalisation of issuer i</p> <p>C: Carbon emissions of issuer i</p> <p>Other initiatives which are utilising similar metrics: TCFD, PCAF</p>	<p>I: Current value of investment in issuer i</p> <p>EV: Enterprise Value of issuer i</p> <p>EVIC: Enterprise Value incl. Cash of issuer i</p> <p>R: Annual Revenues of issuer i</p> <p>C: Carbon emissions of issuer i</p> <p>Other initiatives which are utilising similar metrics: European Union Financial Supervisory Authorities (EBA, ESMA, EIOPA, PCAF, TCFD)</p>
Key Metrics	<p>Absolute: MtCO₂(e) or</p> <p>Intensity:⁵⁵ tCO₂(e)/Mn USD, tCO(e)/EVIC, tCO(e)/Mn USD Revenue</p>	
Data Availability and Sources	<p>There is limited data availability; the Alliance identifies the paramount need for greater emissions transparency (through GHG reporting of the underlying assets) for all private asset classes. Without detailed emissions data, investments' climate impact cannot be properly understood nor managed. The Alliance encourages members to join initiatives that call for data disclosure for private assets, such as the ILPA ESG Data Convergence Initiative.</p>	
Scientific Pathway or Benchmark Sources	<p>Net-zero requirements shall be formulated using IPCC's no or limited overshoot global scenarios for 1.5°C. The SR1.5 and AR6 provide ranges of 22–32% for 2020–2025 and -40% to -60% for 2020–2030 respectively. For sector pathways, members may use the Science Based Targets Framework or the Net Zero Investment Framework (NZIF) for “aligned” companies.⁵⁶ For further information, see Sector Chapter.</p>	

55 If an intensity-based metric is used then members should account, on a disaggregated basis, the portion of the intensity reduction originating from asset purchases and disposals, the portion originating from organic emissions reductions generated by assets in the portfolio and the portion that originates from changes in financial metrics.

56 For private equity funds, this approach is aligned with SBTi's framework and the draft of the NZIF for private equity, published by IIGCC.

Reporting (incl. Timeline)	Private assets direct equity investments	Private assets fund investments and loans
	Alliance members should begin phase in of all assets on best effort basis as of 2023.	<p>Alliance members shall engage asset managers towards respective borrowers</p> <ul style="list-style-type: none"> reporting Scope 1 and 2 GHG emissions data (Scope 3 where possible) Net-zero targets by YE2025. <p>Alliance members shall report progress on carbon data obtained by YE2023 and the share outstanding e.g. “coverage” by YE2024.</p>
	Alliance members shall report emissions in 2024 for YE2023 .	Alliance members shall report emissions (with full emissions coverage) by 2025 . The expectation is that GPs will have been engaged to report YE2023 emissions by 2024).
Target (incl. Timeline)	Private assets direct equity investments	Private assets fund investments and loans
	Alliance members shall set 2030 decarbonisation targets by end of 2025.	<p>Alliance members shall engage asset managers towards respective borrowers</p> <ul style="list-style-type: none"> reporting Scope 1 and 2 GHG emissions data (Scope 3 where possible) Net-zero targets by YE2025. <p>Alliance members shall report progress on carbon data obtained by YE2023 and the share outstanding e.g. “coverage” by YE2024.</p> <p>For new fund commitments or new loan investments, members shall phase in strict net-zero requirements for the underlying corporations. All new funds or loans shall be net-zero aligned by the date indicated in Table VI.</p>
Once targets are set, Alliance members should report on both absolute and intensity metrics, and Alliance members shall report absolute emissions, irrespective of the target type they choose. ⁵⁷		

Investments in private assets

Private Assets should follow the same methodologies as publicly-traded assets. However, target setting may lag behind publicly-traded assets, due to differences in data availability.

Fund investments

As asset owners have limited control over fund investments, Alliance members depend to a certain extent on the decarbonisation efforts of their asset managers.⁵⁸ The Alli-

⁵⁷ For more information, please see the Alliance’s [Governance document](#), updated in March 2022.

⁵⁸ Run off funds are considered out of scope.

ance expectations towards asset managers in private markets were formulated in the [Net-Zero Asset Owners Alliance's Call to Action to Private Asset Managers](#). Alliance members **should** use the expectations in the Call to Action to engage AMs.

New Funds: For new fund commitments or new loan investments, members **shall** phase in strict net-zero requirements for the underlying corporations. This also requires a systematic engagement with the asset managers and/or borrowers. All new funds or loans **shall** be net-zero aligned by the date indicated in Table VI.

Net zero requirements **shall** be formulated via no or limited overshoot 1.5°C sector pathways (e.g., SDA). For further information, see Sector Chapter.⁵⁹

Asset Manager Engagement on New Funds: For new investments, irrespective of the ownership share, members **shall** use their influence during the due diligence phase to call for 1.5°C-aligned reduction targets.

All new fund manager appointments **should** include a commitment to net zero and alignment with a 1.5°C decarbonisation trajectory. The Alliance appreciates this may not be possible immediately in every jurisdiction. Thus, it is suggested that asset owners engage with all managers, with a view for them to align their AuM with net zero as soon as possible. Overall, all new fund manager appointments should be aligned with net zero according to the timetable above.

Existing Funds: For existing fund or loan investments, the asset owner **shall** establish a systematic engagement approach (with the fund managers and/or with the borrowers) at the latest 12 months after the release of the Protocol version covering the relevant asset class. Note that infrastructure investments were already covered in TSP2.

To move towards the net-zero alignment of the underlying corporation, the engagement **shall** cover

- GHG emissions reporting on Scope 1 and Scope 2 data,
- Material Scope 3 data towards the net-zero alignment of the underlying corporation.

The engagement may reflect carbon emission materiality.

For direct private equity investments: the asset owner **shall** commence setting targets—on corporation level and in line with no or limited overshoot 1.5°C pathways—in 2023 and cover all assets by 2025.

Asset Manager and Borrower Engagement on Existing Funds and Loans: Alliance members **shall** engage annually with existing fund managers on the importance of setting decarbonisation targets within their portfolios. This engagement **shall** be aimed at encouraging each asset to set an emissions reduction target aligned with a 1.5°C pathway. This may be through direct engagement or engagement via a fund manager.

59 For private equity funds this is aligned with SBTi framework and the draft of the NZIF for private equity by IIGCC.

Real estate

Directly-held real estate

Table IX: Real estate overview

Term	Summary
Asset class definition	<p>Directly-held Real Estate refers to fully owned buildings (i.e. buildings that are held to 100 percent ownership by the member) and buildings that are partly owned through a joint-venture, joint operation, or are in a joint ownership</p> <p>Both residential and commercial buildings are included in the scope with <i>residential buildings</i> referring to private dwellings such as apartments and houses and <i>commercial buildings</i> referring to properties related to trade, finance, retail, public administration, health, food and lodging, education, and other commercial services.</p>
Scope of emissions	<p>Targets shall be set on a whole-building and operational approach (i.e. energy-related emissions from both base building/common spaces and tenant spaces shall be included in target-setting). Alliance members should report on a CO₂e basis.</p>
Accounting Approach	<p>Members shall align their carbon accounting of financed emissions with the requirements and recommendations outlined in the Global GHG Accounting and Reporting Standard developed by PCAF.</p>
Key Metrics	<p>Two types of target metrics are allowed</p> <ul style="list-style-type: none"> ▪ Intensity: kgCO₂e/sqm/annum or tCO₂e/sqm/annum ▪ Absolute: kgCO₂e/annum or tCO₂e/annum
Data Availability and Sources	<p>Reported asset-level data is preferred. When this data is not available, two different options exist for members in their target setting (see body of this section).</p>
Scientific Pathway or Benchmark Sources	<p>The target ambition and the required decarbonisation rate shall be based on no or limited overshoot 1.5°C pathways. Members are not required to use a specific pathway but should strive to use pathways specifically designed for the real estate sector. The CRREM Global Pathways are recommended but other pathways might be used if they fall within the IPCC's no or limited overshoot 1.5°C global range of -40% to -60% for 2020–2030.</p>
Target (incl. timeline)	<p>Alliance members shall set and publicly disclose decarbonisation targets for directly-held real estate within 12 months of joining the Alliance. Alliance members shall set targets on the basis of absolute carbon emissions or emission intensity.</p>
Reporting (incl. timeline)	<p>Alliance members shall report their initial targets, and then their subsequent progress annually in the upcoming Alliance reporting cycle, unless the reporting cycle is within 6 months of their joining the Alliance. Alliance members should report on both absolute and intensity metrics, and Alliance members shall report absolute emissions, irrespective of the target type they choose.⁶⁰</p>

60 For more information, please see the Alliance's [Governance document](#), updated in March 2022.

Guidance to net-zero buildings

The global approach to net-zero needs to be translated and addressed at the individual building level in order 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 definitions⁶¹ 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).

With regard to 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 onsite and/or offsite renewable sources. With regard to 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 (please also refer to section 3.6).

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 in order to support its members in their efforts to decarbonise their real estate portfolios. Consequently, the Alliance believes that members should use the following components as to guide their efforts to transition their real estate portfolios to net-zero:

For operational carbon;

- the building shall be highly energy efficient⁶² (taking into account the building type and geographic location), and
- all remaining energy required shall come from onsite and/or offsite renewable sources, or shall be connected to an energy supply that will be fully decarbonised by 2050, at the latest.

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

62 Members should consider national targets, recommendations or guidance as to what constitutes a highly energy efficient building. In the EU, national thresholds for Nearly Zero-Energy Buildings (NZEB) should be used.

For true net-zero the whole life cycle perspective should be applied which means that the above guidance for operational carbon should be complemented with guidance also including embodied carbon. The Alliance may further incorporate this as part of incorporating embodied carbon in target setting requirements. But as general guidance on embodied carbon the building shall be resource efficient and upfront carbon as well as in-use embodied carbon shall be minimised to the extent possible. The residual embodied carbon shall be, as a last resort, removed.

Carbon accounting of real estate assets

Proper accounting of carbon emissions is the foundation for robust disclosure and target-setting practices. As a general rule, members (and fund managers) shall align their carbon accounting of financed emissions with the requirements and recommendations outlined in the Global GHG Accounting & Reporting Standard developed by PCAF.

With regard to directly held real estate 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 across Scope 1, 2 and 3 should be conducted.

To align with PCAF, members (and fund managers) are recommended to 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.

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 both an efficiency-based control perspective or 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 e.g., HVAC replacement, improving the building envelope, installing a new boiler etc. A consumption-based control perspective rather looks at the actual consumption, split either by source/contract or by floor space.

Members shall, regardless of how they interpret the definition of operational control, account for 100% of the building's emissions—for which they have operational control—under Scope 1 and/or Scope 2 emissions and the part for which they do not have operational control as Scope 3 category 13 (downstream leased assets).

It should be stated that the accounting recommendation outlined above has in practice no implications on the target-setting requirements as these shall be based on a whole-building approach, meaning that carbon emissions from both landlord-controlled and tenant-controlled spaces are included in the target scope (see section 3.1).

Table X outlines four different illustrative examples how to account for building-related emissions for different investment types.

Table X: Carbon accounting of building-related emissions from an investor perspective

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 (<i>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</i>)	

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) 4 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) 4 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)

General requirements

Targets **shall** be set on residential and commercial real estate assets fully owned by the member and real estate assets partly owned by the member through a joint venture. With regard to the scope of emissions covered by the target, members **shall** apply a *whole-building approach* in their target-setting (i.e. targets shall include energy-related emissions from both base building/common spaces and tenant spaces).

With regard to the use of either a *location-based* or a *market-based* method⁶³ for scope 2 emissions, members **should** use the location-based method. Regardless of the method applied, when carbon emissions data according to both methods are available, members **shall** use one method consistently across the portfolio and disclose which method is used.

Pathway selection and required decarbonisation

The target ambition and the required decarbonisation rate **shall** be based on science-based 1.5°C pathways with no or limited overshoot. Members are not required to use a pre-defined pathway but **should** strive to use pathways specifically designed for the real estate sector. The CRREM Global Pathways are **recommended**.

The [Global Pathways](#) developed by CRREM provide national decarbonisation pathways aligned with reaching net-zero emissions by 2050 with no or limited overshoot of 1.5C. 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 their geographic location.

⁶³ **Location-based method:** Scope 2 emissions are based on the average emissions intensity of the grids on which the energy consumption occurs (national or regional boundaries). **Market-based method:** Scope 2 emissions are based on emissions associated with the generators from which a company has purposefully chosen.

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)

This is an intensity-based target where members **shall** use kilogram (or tonnes) of carbon emissions per square meter and year as the target metric. Targets are set on portfolio level using asset level data to aggregate. CRREM 1.5°C pathways **should** be used 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 **must** meet the overall Alliance criteria of being a science-based 1.5°C pathway with no or limited overshoot. Members **shall** disclose which benchmark is being used. The Sectoral Decarbonisation Approach (SDA) is the **recommended** method to be used to calculate and set the target as it, among other things, allows for different starting points.

In order to calculate the target metric the floor area needs to be determined. There are numerous floor area schemes available and which scheme that is most commonly used differ between countries and regions. The International Property Measurement Standard (IPMS) aims to establish a globally consistent methodology for property measurement and is also the standard referred to by CRREM. Members are **recommended** to use the IPMS standard 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.

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

Targets under this option **shall** be set using an absolute reduction method with kilograms (or tonnes) of carbon emissions as the target metric. Targets are set on portfolio level using asset level data to aggregate. With regard to benchmark, members **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 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.

Data availability

The availability of accurate data is, as for all asset classes, a central component in the ability to set and achieve emissions reduction targets for a real estate portfolio. Significant differences exist between regions in terms of reported data availability for the carbon emissions and/or energy consumption, particularly when the building is occupied by third party tenants. As mentioned above, a whole-building approach is required in the target-setting. Where reported asset-level data is not available, two different options exist for members in their target setting;

Option 1: Members aggregate data and set a target only for those assets in the portfolio where reported and reliable data can be retrieved. If this option is used, members **shall** disclose the share of the total portfolio that is covered by the target. In addition, members **shall** establish a time-bound plan to retrieve reported and reliable data for those assets not covered by the target. Once reported and reliable data is retrieved for additional assets, members can choose to restate the existing target or set an additional target for those specific assets.

Option 2: Members aggregate data and set targets for the whole portfolio and use estimations for those assets where reported and reliable data cannot be retrieved. Where estimations are used, members **shall** disclose the proportion of assets in the portfolio where estimated data is used and **should** give a general description of the methodology used. In addition, members **shall** establish a time-bound plan to retrieve reported and reliable data for those assets where estimations are used. Once reported and reliable data is retrieved for these assets members can choose to restate the existing target or set an additional target for those specific assets.

Energy efficiency targets

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. 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% 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 criteria for substantial contribution to climate change mitigation in real estate activities.

Improving energy efficiency will be an important component for all members in their efforts to transition their real estate portfolios to net-zero emissions. There is currently no requirement for members to set explicit energy efficiency targets. However, members are encouraged to set a target, or articulate an ambition, with regard to improving the assets' energy efficiency, in addition to their emission reduction targets.

How such targets should be set depends on several factors, but EPC-ratings and the EU-Taxonomy criteria can serve as general guidance. In addition, the SDG target 7.3, which requires a 2.6 percent annual improvement in the global rate of improvement in energy efficiency between 2010 and 2030⁶⁴ can also serve as an inspiration and overall guidance, although not specific to the real estate sector (International Bank for Reconstruction and Development 2022).

Embodied carbon

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 of the building (extraction of material, transportation of material, 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.

As a general principle, the Alliance believes that embodied carbon, when material, should be included in credible target-setting methodologies. However, despite improvements in recent years, harmonised standards, guidance, and the availability of consistent and reliable data in this area is still very limited. Inclusion of embodied carbon within the protocol scope now could lead to inconsistent reporting approaches due to a lack of consensus and the use of a large amount of estimated data. The Alliance is working with different organisations in the built environment ecosystem to further understand how embodied emissions can be included in target setting requirements in a credible and realistic manner.

Despite the current constraints and limitations, members are encouraged to start including embodied carbon in their target-setting approaches. Initial steps on this journey could leverage guidance from for example World Business Council for Sustainable Development (WBCSD) and the World Green Building Council (WGBC). As part of their "Advancing Net Zero" project, the WGBC has issued a report outlining concrete recommendations and actions for different stakeholders, including investors, in the built environment value chain (WorldGBC 2019). The vision states that all new buildings and renovations will have at least 40 percent less embodied carbon by 2030 and be net-zero embodied carbon by 2050. In their report "Net-zero Buildings: where do we stand?", WBCSD provides examples and guidance on how to start measuring and report-

64 Based on developments through 2021, the required rate of improvement is now estimated to be 3.2% per year through 2030, although the original target remains the same

ing carbon emissions across the full lifecycle of buildings (WBCSD 2021a). Furthermore, the WBCSD report “Decarbonising Construction”, provides concrete guidance for investors and developers how to reduce embodied carbon (WBCSD 2021b). All recommended measures are grouped into five broad areas; create a carbon policy, set targets, prioritise circularity, optimise design and low-carbon procurement.

Combining both operational and embodied carbon would be the ultimate goal for a true net-zero building across its whole existence. As data availability, methodologies and standards continue to be developed and improved, this framework and its related target-setting methodologies will be updated and refined to further incorporate a whole life cycle approach.

Future work

The Alliance will continue to develop and refine this framework as new guidance, standards, methodologies and data become available. In addition, the Alliance expects to further expand the scope in future versions of this framework by adding additional sub-asset classes such as real estate funds.

Key levers for advancing emissions reductions in the real estate asset class can be found in the Annex of TSPV2.

Commercial Real Estate Lending

Table XI: Overview Table Commercial Real Estate Lending

Term	Summary
Asset class definition	<p>A commercial mortgage is a type of loan used for the acquisition, refinancing or the refurbishment of commercial real estate collateralised by a mortgage, land charge mortgage, or hypothecs. ⁶⁵</p> <p>Commercial real estate are buildings fully owned by the borrower or portfolios of commercial assets where all buildings within the portfolio are fully owned by the borrower. In the case of mixed use (commercial and residential) the building should be included if the floor area is majority (over 50%) commercial.</p>
Scope of emissions	<p>Carbon accounting of mortgage emissions attributes fully to Scope 3 of Alliance members GHG inventory, since there is no operational control of the financed emissions.</p>

⁶⁵ The Alliance expects that syndicated loans will be phased in as a second step.

<p>Accounting Approach</p>	<p>Mortgage carbon⁶⁶ emissions are based on a “look through” approach, where the carbon of the underlying asset is taken as the base for the mortgage loan calculation. The emissions scope includes:</p> <ul style="list-style-type: none"> ▪ Operational emissions only; ▪ Building emissions measured with the whole-building approach (i.e., energy-related emissions from both base building/common spaces and tenant spaces shall be included in target-setting) ▪ The lender only accounts for the portion of the annual emissions of the building that are financed through the mortgage loan. This portion is determined by the LTV-ratio (Loan-to-Value), this is the outstanding loan amount divided by the value of building. <p>Calculation of financed GHG emissions for mortgages:</p> <p>Relative Approach: Financed emissions Intensity with metric kg CO₂e/m²/y</p> $\sum_{\text{Mortgages}} \left(\left(\frac{\text{Building Emissions}}{\text{(kg CO}_2\text{e/y)}} \right) \times \left(\frac{\text{Outstanding Loan (currency)}}{\text{Value of property at origination (currency)}} \right) \right)$ <hr/> $\sum_{\text{Mortgages}} \left(\left(\frac{\text{Floor area}}{\text{(m}^2\text{/sf}^2)} \right) \times \left(\frac{\text{Outstanding Loan (currency)}}{\text{Value of property at origination (currency)}} \right) \right)$
	<p>Under the relative approach, the financed emissions per m² or sf² of the entire debt portfolio correspond to the sum of the LTV-weighted building emissions of each corresponding financing in relation to the sum of the LTV-weighted buildings floor area of each corresponding loans.</p> <p>Absolute approach: Financed emissions with metric kg CO₂e/annum</p> $\sum_{\text{Mortgages}} \left(\left(\frac{\text{Building Emissions}}{\text{(kg CO}_2\text{e/y)}} \right) \times \left(\frac{\text{Outstanding Loan (currency)}}{\text{Value of property at origination (currency)}} \right) \right)$ <p>Under the absolute approach, the financed emissions of the entire debt portfolio correspond to the sum of the LTV-weighted building emissions of corresponding loans.</p>
	<p>Both approaches:</p> <p>In some cases, a loan might be structured into different risk stakes (senior tranche and one or more subordinated tranches). In this case, the outstanding loan in the formula above only contains the lender’s loan share. Therefore, LTV ratio applied for the calculation of the financed emissions might differ to the internal risk-oriented LTV view. This ensures that only the emissions of the member’s loan tranche are included.</p> <p>In some cases such as subsequent loan increases, the market value of the property changes and should be adjusted in the formula. In these cases, the relevant market value differs from the one at the time of loan origination. Thus, the market value at the time of the last increase should be taken.</p>

66 Carbon refers to carbon dioxide and all other relevant GHG gases transferred to CO₂e.

Key Metrics	<p>The output shall be an emission target (per gross floor area) at the portfolio level.</p> <ul style="list-style-type: none"> ▪ Absolute: Building emission (kg CO₂e/annum) ▪ Relative: Building emissions Intensity (kg CO₂e/m²/annum)
Data Availability and Sources	<p>Carbon Risk Real Estate Monitor (CRREM), among others.</p> <p>Two options for estimating data:</p> <ul style="list-style-type: none"> ▪ Members disclose the portion of assets where data is not available and establish a time-bound plan to obtain the missing data. ▪ Members use estimates where reliable data is not available and establish a time-bound plan to obtain reliable data to replace estimated data.
Scientific Pathway or Benchmark Sources	<p>As a science-based scenario is required, Alliance members shall use Carbon Risk Real Estate Monitor (CRREM) 1.5°C national pathways or the IPCC’s no or limited overshoot 1.5°C global range of -40% to -60% for 2020–2030 (particularly when aggregating with equities and bonds target).</p>
Target (incl. timeline)	<p>By 2023 Alliance Reporting Cycle, Alliance members should begin phase in target setting on <i>new</i> loans. By YE2026 Alliance members shall set and publicly disclose decarbonisation targets on all <i>new</i> loans.</p> <p>For existing CREL investments, Alliance members should phase in a systematic engagement approach with the borrower on carbon reporting and net-zero targets within 12 months of either new Protocol publication or joining the Alliance.</p>
Reporting (incl. timeline)	<p>By the 2024 Alliance Reporting Cycle, Alliance members shall report the share of the portfolio that is covered by the disclosure target on new investments and the estimation methods used (if applicable). Members should account and report emissions for existing investments wherever data is available.</p> <p>By YE2025, Alliance members shall publicly disclose full coverage of CREL carbon accounting and explaining any remaining gaps. By 2026 Alliance Reporting Cycle, Members shall report carbon data, aiming for full coverage and explaining any gaps.</p>

Key definitions

A commercial real estate mortgage is a loan used for the acquisition, refinancing or the refurbishment of commercial real estate collateralized by a mortgage, land charge mortgage, or hypothecs.

LTV: The LTV-ratio (Loan-to-Value ratio) represents the ratio between the outstanding financed amount (numerator) and the total value of the building at origination (denominator).

Carbon accounting

Mortgage carbon⁶⁷ emissions are based on a “look through” approach, where the carbon of the underlying asset is taken as the base for the mortgage loan calculation. In scope are operational emissions, the use-phase of the financed property or properties.

⁶⁷ Carbon refers to carbon dioxide and all other relevant GHG gases transferred to CO₂e.

For the accounting of carbon emissions of project developments or new builds, an estimation of the operational emissions after development / refurbishment is needed. Building emissions shall be measured with the whole-building approach of the underlying asset.

The lender only accounts for the portion of the annual emissions of the building that are financed through the mortgage loan. This portion is determined by the LTV-ratio. When the property value at origination is not feasible to obtain, lenders may use the latest property value available and fix this value for the remaining loan duration. Alternatively, they may use the mortgage value at origination. The LTV-ratio can be at maximum 100%.

Mortgage emissions are counted under Scope 3 of Alliance members’ GHG inventories, since asset owners have no operational control of the financed emissions.

This approach is derived from the Financed emissions approach of PCAF methodology that is described in the “The Global GHG Accounting and Reporting Standard for the Financial Industry” (PCAF 2020) and the consultation draft of the Net-Zero Banking Alliance (2022), relevant for residential mortgages.

The carbon calculation methodology for an underlying building relies on the same aforementioned method used for real estate equity.

CREL GHG emissions for a building can be expressed as:

Commercial Mortgage Portfolio Emissions	
Intensity-based approach	
Mortgage Portfolio Emissions Intensity =	
$\frac{\sum_{\text{Mortgages}} \left(\left(\frac{\text{Building Emissions (kg CO}_2\text{e/y)}}{\text{Floor area (m}^2\text{/sf}^2\text{)}} \right) \times \left(\frac{\text{Outstanding Loan (currency)}}{\text{Value of property at origination (currency)}} \right) \right)}{\sum_{\text{Mortgages}} \left(\left(\frac{\text{Floor area (m}^2\text{/sf}^2\text{)}}{\text{Floor area (m}^2\text{/sf}^2\text{)}} \right) \times \left(\frac{\text{Outstanding Loan (currency)}}{\text{Value of property at origination (currency)}} \right) \right)}$	
Emissions on property level (whole building approach)	LTV ratio
Floor area on property level. Metric might differ geographically	
Absolute emissions approach	
Absolute Mortgage Portfolio Emissions =	
$\sum_{\text{Mortgages}} \left(\left(\frac{\text{Building Emissions (kg CO}_2\text{e/y)}}{\text{Floor area (m}^2\text{/sf}^2\text{)}} \right) \times \left(\frac{\text{Outstanding Loan (currency)}}{\text{Value of property at origination (currency)}} \right) \right)$	
Emissions on property level (whole building approach)	LTV ratio

Under the relative approach, the financed emissions per m² or sf² of the entire debt portfolio correspond to the sum of the LTV-weighted building emissions of corresponding financing (in relation to the sum of the LTV-weighted buildings floor area of corresponding loans).

Under the absolute approach, the financed emissions of the entire debt portfolio correspond to the sum of the LTV-weighted building emissions of each corresponding loan.

Both approaches:

In some cases, a loan might be structured into different risk stakes (senior tranche and one or more subordinated tranches). In this case the outstanding loan in the formula above does only contain the loan share of the lender. As such, the LTV ratio applied for the calculation of the financed emissions might differ to the internal risk-oriented LTV view. This ensures that only the emissions of your loan tranche will be included.

In some cases, such as subsequent loan increases, the market value of the property changes and should be adjusted in the formula. In these cases, the relevant market value differs from the one at the time of loan origination, thus the market value at the time of the last increase should be taken.

Data and availability estimations

For an asset owner, real estate mortgage emissions are Scope 3 Category 15 emissions.

Due to the lack of operational control, lenders can face a challenge of collecting necessary data.

Target setting and reporting expectations

For the existing loan portfolio, the focus is on two objectives.

- Transparency of the borrower (asset owner) regarding the consumption data of the building. This data is needed as part of the calculation of the real estate debt portfolio emissions. Real emissions data significantly improves the quality of the data basis compared to the pure estimation basis.
- Focus on levers such as engagement or borrower commitment, which could be particularly important at a stage of refinancing discussions are highly recommended.

Finally, Alliance members **should** consider setting optional CREL/CML targets for new loans in 2023. Alliance members **shall** progressively increase carbon emissions accounting and report the share of the portfolio that is covered by the disclosure as well as report the estimation methods used (when applicable). Alliance members **shall** phase in targets for new loans, covering all new loans by 2027.

Real estate equity funds

Table XII: Overview table real estate equity funds

Term	Summary
Asset class definition	Real Estate Equity Funds are real estate assets (e.g. buildings) pooled in a fund. REITs and listed funds investing in REITs are excluded. ⁶⁸
Scope of emissions	<p>Asset managers should apply an operational control emissions approach (embodied emissions optional).</p> <p>Members shall apply a <i>whole-building</i> approach in their target-setting; thus, targets shall include energy-related emissions from both landlord- and tenant-controlled spaces. With regard to the use of either a location-based or a <i>market-based</i> method⁶⁹ for Scope 2 emissions, asset managers should use the location-based method. Regardless of the method applied, asset managers should use one method consistently across the portfolio and disclose which method is used.</p> <p>For Alliance members, Carbon accounting of real estate funds attributes fully to Scope 3 of the members' GHG inventory, since there is no operational control of the financed emissions.</p>
Accounting Approach	To align with PCAF, fund managers should use the operational control approach when accounting for carbon emissions in their directly-held real estate portfolios (fully or jointly owned).
Key Metrics	<p>The output shall be an emission target (per gross floor area) at the portfolio level.</p> <ul style="list-style-type: none"> ▪ Relative: Building emissions intensity (kg CO₂e/m²/annum) ▪ (optional) Absolute: Building emission (kg CO₂e/annum)
Data Availability and Sources	<p>Carbon Risk Real Estate Monitor (CRREM), among others.</p> <p>Two options for estimating data:</p> <ul style="list-style-type: none"> ▪ Members disclose the portion of assets where data is not available and establish a time-bound plan to obtain the missing data. ▪ Members use estimates where reliable data is not available and establish a time-bound plan to obtain reliable data to replace estimated data.
Scientific Pathway or Benchmark Sources	Alliance members shall use Carbon Risk Real Estate Monitor (CRREM) 1.5°C national pathways or the IPCC's no or limited overshoot 1.5°C global range of -40% to -60% for 2020–2030 (particularly when aggregating with equities and bonds target).

68 Residential buildings; refers to private dwellings such as apartments and houses. Commercial buildings: includes properties related to trade, finance, retail, public administration, health, food and lodging, education, logistics and other commercial services.

69 **Location-based method:** Scope 2 emissions are based on the average emissions intensity of the grids on which the energy consumption occurs (national or regional boundaries). **Market-based method:** Scope 2 emissions are based on emissions associated with the generators from which a company has purposefully chosen.

Target (incl. timeline)	<p>For existing investments, Alliance members shall phase in a systematic engagement approach with the asset manager on carbon reporting and net-zero targets within 12 months of either new Protocol publication or joining the Alliance.</p> <p>By the 2023 Alliance Reporting Cycle, Alliance members should begin phase in target setting on <i>new</i> funds.</p> <p>By YE2026 Alliance members shall set and publicly disclose decarbonisation targets on all <i>new</i> funds.</p>
Reporting (incl. timeline)	<p>By the 2024 Alliance Reporting Cycle, Members should account and report emissions wherever data is available.</p> <p>By YE2025, Alliance members shall publicly disclose full coverage of carbon accounting and explain any remaining gaps.</p> <p>By the 2026 Alliance Reporting Cycle, Members shall report carbon data to the Alliance, aiming for full coverage and explaining any gaps. By 2027 Alliance Reporting Cycle, Members shall report to the Alliance on decarbonisation targets disclosed in the previous year.</p>

Key concepts

This section covers target setting for real estate assets (e.g. buildings) pooled in a fund (excluding REITs and listed funds investing in REITs).⁷⁰ REITs are covered under the Listed Equity section above.

Data availability and estimations

Option 1: Members aggregate data and set targets only for those assets where reported and reliable data can be retrieved. If this option is used, members **shall** disclose the share of the total portfolio that is covered by the target. In addition, members **shall** establish a time-bound plan to retrieve reported and reliable data for those assets not covered by the target. Once reported and reliable data is retrieved for additional assets, members can choose to restate the existing target or set an additional target for those specific assets.

Option 2: Members aggregate data and set targets for the whole portfolio and use estimations for those assets where reported and reliable data cannot be retrieved. Where estimations are used, members **shall** disclose the proportion of assets in the portfolio where estimated data is used and **should** give a general description of the methodology used. In addition, members **shall** establish a time-bound plan to retrieve reported and reliable data for those assets where estimations are used. Once reported and reliable data is retrieved for these assets members can choose to restate the existing target or set an additional target for those specific assets.

These considerations on data availability and estimations should also be taken into account by fund managers setting net-zero aligned targets on fund level.

⁷⁰ Residential buildings; refers to private dwellings such as apartments and houses. Commercial buildings: includes properties related to trade, finance, retail, public administration, health, food and lodging, education, logistics and other commercial services.

Energy efficiency targets

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. 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% lower in 2030 compared to 2021 (IEA 2022). The importance of reducing energy consumption is also evident in the EU Taxonomy where primary energy constitutes the criteria for substantial contribution to climate change mitigation in real estate activities.

Improving energy efficiency will be an important component for all members in their efforts to transition their real estate portfolios to net-zero emissions. There is currently no requirement for members to set explicit energy efficiency targets. However, members are encouraged to set a target, or articulate an ambition, with regard to improving the assets’ energy efficiency, in addition to their emission reduction targets.

How such targets should be set depends on several factors, but Energy Performance Certifications (EPC-ratings) and the EU Taxonomy criteria can serve as general guidance. In addition, the SDG target 7.3, which requires a 2.6 percent annual improvement in the global rate of improvement in energy efficiency between 2010 and 2030⁷¹ can (International Bank for Reconstruction and Development 2022), although not specific to the real estate sector, serve as an inspiration and overall guidance.

71 Based on developments through 2021, the required rate of improvement is now estimated to be 3.2% per year through 2030, although the original target remains the same

Infrastructure

Publicly-traded assets

None, see listed equity/corporate bonds.

Private assets

Table XIII: Overview Table Infrastructure

Term	Summary
Asset class definition	<p>An infrastructure investment is defined as an investment in an entity or corporate group which derives the substantial majority (i.e., more than two thirds) of its revenues from owning, financing, developing or operating infrastructure assets. Infrastructure assets include physical assets, structures, facilities, systems, and networks that often provide or support essential public services. For various asset class types see Table XIV below.</p> <p>Greenfield Definition: Construction of new assets or re-constructing an existing asset to a material extent.</p> <p>Brownfield Definition: All other projects which are not greenfield.</p>
Scope of emissions	Targets shall be on annual Scope 1 and 2 emissions, and should include Scope 3 emissions wherever possible.
Accounting Approach	$\text{Financed emissions} = \sum \left(\left(\frac{\text{outstanding amount}}{\text{total equity} + \text{debt}} \right) \times \text{Infrastructure asset annual emissions} \right)$
Key Metrics	<p>The output shall be an emission target at the portfolio or asset class level, in line with practice for public equity and listed corporate debt. Alliance members shall use owned emissions via equity and debt (in line with PCAF) as the target-setting metric.</p> <p>Absolute: MtCO₂(e) or Intensity⁷²: tCO₂(e)/Mn USD, tCO(e)/EVIC, [Note: Revenue is not recommended for this asset class]</p>
Data Availability and Sources	Financed emissions can only be calculated for infrastructure assets where financial data is available. For assets where such data is unavailable and owned emissions cannot be calculated, rough estimations can still be made based on region- and sector-specific average financial data and the outstanding amount. PCAF provides direction on how to estimate annual emissions in the face of data availability issues.

72 If an intensity-based metric is used then members should account (on a disaggregated basis) for: i) the portion of the intensity reduction originating from asset purchases and disposals, ii) the portion originating from organic emissions reductions generated by assets in the portfolio, and iii) the portion that originates from changes in financial metrics.

Scientific Pathway or Benchmark Sources	<p>Alliance members shall use sector-specific pathways (where applicable), or the IPCC’s no or limited overshoot 1.5°C global range of -40% to -60% for 2020–2030.</p> <p>This holds especially for investments in coal, oil and gas:</p> <ul style="list-style-type: none"> ■ For coal, Alliance members shall follow the Alliance’s position paper on thermal coal. ■ For oil, members shall not finance assets which are not aligned with science-based or government-issued regional/national 1.5°C pathways. Members shall especially not finance upstream greenfield projects beyond those already committed by the end of 2021. <p>Further guidance and/or modification will be given in a forthcoming position paper on oil & gas.</p> <ul style="list-style-type: none"> ■ For gas, members shall not invest in assets which are not aligned with science-based or government-issued regional/national 1.5°C pathways. <p>Further guidance and/or modification will be given in a forthcoming position paper on Oil and Gas.</p>
Assets included in target boundary	<p>The Alliance recommends that members initially set emissions reduction targets on infrastructure assets in carbon-intensive sectors (i.e., Carbon Intensive Energy Infrastructure) and where they have >20% ownership or a board seat.</p> <p>For all other infrastructure assets (such as renewable energy infrastructure, lower ownership shares, and debt investments), the aforementioned Private Assets guidance applies.</p>
Target (incl. Timeline)	<p>Alliance members shall publicly disclose carbon reduction targets for private equity high-emitting infrastructure assets where they have i) ownership of >20%, ii) a board seat, or iii) any new assets within 12 months of joining the Alliance.</p> <p>All other infrastructure assets shall be phased in according to the asset class phase in schedule. Alliance members shall set targets on the basis of absolute carbon emissions or emission intensity.</p>
Reporting (incl. Timeline)	<p>Alliance members shall report carbon accounting for Carbon-Intensive Energy Infrastructure by the end of 2022. Alliance members shall report annual Scope 1 and 2 emissions for 100% of all other energy infrastructure assets by 2025.</p>

Key definitions

The Alliance reviewed a wide range global, regional and in-house definitions of infrastructure. The Alliance agreed to use the European Commission’s Solvency II definition, published in 2017, as follows:

“An infrastructure investment is defined as being an investment in an entity or corporate group which derives the substantial majority of its revenues from owning, financing, developing or operating infrastructure assets. Infrastructure assets mean physical assets, structures or facilities, systems and networks that provide or support essential public services.”⁷³

The Alliance uses ‘greenfield’ to describe new infrastructure projects that lack the constraints of prior work and existing infrastructure assets undergoing major CAPEX (e.g., re-constructing a coal power plant into a gas power plant). All other infrastructure assets are considered brownfield.

The Alliance recognizes that asset owners may hold infrastructure assets, either listed or unlisted, across different asset classes within their portfolios. This chapter is written from the perspective of a stand-alone, unlisted infrastructure asset class. Alliance members should decide, and clearly communicate, whether infrastructure assets that sit outside their infrastructure portfolio fall under their infrastructure reduction target or sit within the target for another relevant asset class (e.g., an asset owner may decide that listed infrastructure within an equities portfolio falls under their equities reduction target and is measured using the equities carbon accounting methodology).

Asset types in scope are outlined in the Table XIV with a general definition for guidance purposes only.

73 Solvency II amending Delegated Regulation (EU) 2015/35 issued by the European Commission on 8 June 2017 (points 55a and 55b of Article 1: The Solvency II regulations further provide a list of criteria under Article 164a that such investments have to meet in order to be classified as a ‘Qualifying’. By public services we mean electricity, water and so on as described in Table VI, irrespective as to whether the purchaser is a single private entity (e.g., a power plant which sells all production to a single company rather than the public).

Table XIV: Infrastructure Asset Types in Scope

Infrastructure type	Sub-types examples	General definition
Energy infrastructure ⁷⁴	(Carbon Intensive) Energy infrastructure	Carbon-intensive energy infrastructure are the physical assets that enable large-scale energy generation such as (upstream) coal, gas, nuclear, utilities infrastructure, and low-quality distribution infrastructure.
	(Low Carbon) Energy infrastructure, distribution, and technology	Low carbon energy infrastructure, distribution, and technology encompasses renewables, electricity transmission lines, as well as technologies such as advanced electrical metering, smart building systems, and power plant control systems, and high-quality distribution infrastructure.
Transportation infrastructure	Rail networks, airports; road works (including bridges); public transportation systems; ports.	Transport infrastructure refers to the framework that supports the transportation system. It includes 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 refers 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 includes water treatment plants, water supply systems, sewer systems, and sewage treatment facilities.
Communications infrastructure	Telecom utilities	Communication infrastructure includes wireless, cable, and satellite networks, and data centres.
Waste management infrastructure	Landfills and recycling	Waste management infrastructure includes infrastructure for landfills, converting waste to energy (WTE), and recycling or composting.

Source: Net-Zero Asset Owner Alliance Protocol

⁷⁴ In line with forthcoming 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

It is recommended that the carbon emission measurement of infrastructure assets⁷⁵ 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

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 2020). Such reporting ensures transparency with regards to the emissions profile of greenfield assets that the asset owner is sponsoring, and can be useful to identify carbon lock-in. It also ensures when asset owners provide financing to greenfield projects that is then quickly repaid (resulting in minimal “owned” operational emissions), they report the impact of these projects over their entire lifetime.

Members should attempt to report lifetime emissions for greenfield energy infrastructure projects. Lifetime emissions for other assets 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 2020). 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). In other jurisdictions similar taxonomies are under development.⁷⁶

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.

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

76 Readers may wish to consult the [International Platform on Sustainable Finance](#), which is working to establish common ground among different taxonomies.

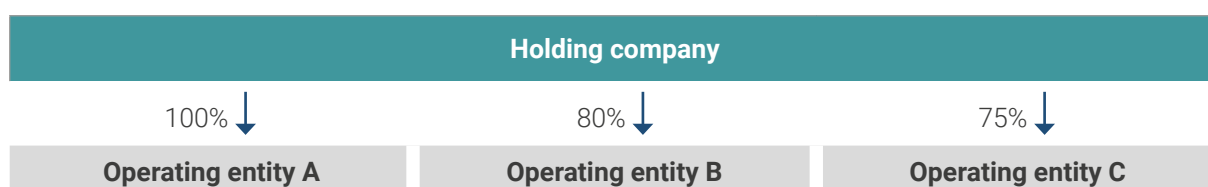
Reporting of lifetime emissions shall be separate to reporting of annual emissions. Once a greenfield project becomes operational, the member should report annual operational emissions as per Chapter 3.

Brownfield assets

Alliance members should measure Scope 1 and 2 emissions on an annual basis for brownfield assets, in line with the GHG Protocol. Scope 3 emissions should be measured wherever possible and material. This should be considered for all infrastructure investments; those held via debt instruments (including Mezzanine) and those held via equity investments (both direct and indirect, including co-investments).

Projects are often structured including various operational entities (OpCos) which 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 a consolidated (virtual) balance sheet (see formula below) of the borrower.

Diagram IV: HoldCo diagram



Source: Net-Zero Asset Owner Alliance Protocol

The Alliance has aligned their accounting methodology with the PCAF Standard for the Financial Industry (PCAF 2020). As per PCAF’s Standard, asset owners 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). 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.

Financed emissions can only be calculated for infrastructure assets where financial data is available. For assets where such data is unavailable, and owned emissions cannot be calculated, rough estimations can still be made based on region- and sector specific

average financial data and the outstanding amount. PCAF provides direction on how to estimate annual emissions in the face of data availability issues.⁵⁸

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. This differs from other asset classes where the argument can be made that revenues are linked to the amount of carbon produced, for many infrastructure types this logic does not hold.

For infrastructure concessions the total value of the concession shall be used and kept constant during the concession term.

Target setting for infrastructure

There are multiple ways in which asset owners are exposed to infrastructure: through equity, debt, or another asset class. The investment type determines, in part, the level and type of influence investors can have on infrastructure assets.

As outlined below, members **shall** take a holistic approach to carbon reductions within their infrastructure portfolios, independently of is it equity or debt. At a minimum, Alliance members **shall**:

- measure and report the annual emissions of **Carbon-Intensive Energy** Infrastructure within their infrastructure portfolio by 2022.
- Set carbon reduction targets for those **equity infrastructure assets**:
 - where they own greater than 20%, or
 - where they have a seat on the board,⁷⁷ or
 - that qualify as carbon intensive energy infrastructure.
- support the phase-out of fossil fuels required by 1.5°C scenarios.
- not provide new finance to infrastructure assets whose purpose or emissions cannot be aligned with the Alliance net-zero ambitions which are guided by IPCCs no or limited overshoot scenarios, OECM and the IEA's NZE2050. This recommendation holds especially for investments in coal, Oil and Gas:
 - For **coal**, Alliance members **shall** follow the [Alliance's position paper regarding thermal coal](#).
 - For **oil**, members **shall not** finance assets which are not aligned with science-based or government-issued regional/national 1.5°C degree pathways, especially not finance upstream greenfield projects beyond those already committed by the end of 2021. Further guidance will be given in a forthcoming position paper on Oil and Gas.
 - For **gas**, members **shall not** invest in assets which are not aligned with science-based or government-issued regional/national 1.5°C degree pathways. Further guidance will be given in a forthcoming position paper on Oil and Gas.

⁷⁷ This follows international accounting standards where significant influence is assumed, see IAS 28.5 If an entity holds 20% or more of the voting power of the investee, it is presumed that the entity has significant influence. This does not include seats on Fund boards where the fund also invests in Infrastructure. See PCAF (2020) p. 73.

Sovereign debt

Carbon accounting

Table XV: Sovereign Debt Overview

Sovereigns							
Definition	This asset class includes sovereign bonds of all maturities issued in domestic or foreign currencies. Sovereign debt is typically issued by the central government or treasury department. ⁷⁸ Sub-sovereigns, supra-nationals, and municipals are explicitly not part of this outline and will be considered in a separate workstream.						
Emissions in Scope	<p>Alliance members should report all scopes separately. 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 on a stand-alone. In addition, in order to reflect different ways of treatment of LULUCF accounting of land use, land-use change, and forestry) by countries and investors, Alliance members should report production emissions including and excluding LULUCF.</p> <table border="1"> <thead> <tr> <th>Scope 1</th> <th>Scope 2</th> <th>Scope 3</th> </tr> </thead> <tbody> <tr> <td> <p>Domestic GHG emissions from sources located within the country territory</p> <p>This aligns with the UNFCCC definition of domestic territorial emissions, including emissions from exported goods and services</p> </td> <td> <p>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</p> </td> <td> <p>Emissions attributable to non-energy imports as a result of activities taking place within the country's territory</p> </td> </tr> </tbody> </table>	Scope 1	Scope 2	Scope 3	<p>Domestic GHG emissions from sources located within the country territory</p> <p>This aligns with the UNFCCC definition of domestic territorial emissions, including emissions from exported goods and services</p>	<p>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</p>	<p>Emissions attributable to non-energy imports as a result of activities taking place within the country's territory</p>
Scope 1	Scope 2	Scope 3					
<p>Domestic GHG emissions from sources located within the country territory</p> <p>This aligns with the UNFCCC definition of domestic territorial emissions, including emissions from exported goods and services</p>	<p>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</p>	<p>Emissions attributable to non-energy imports as a result of activities taking place within the country's territory</p>					
Accounting Approach	<p>Members should use PCAF's accounting methodology:⁷⁹</p> $\text{Attributed emissions} = \frac{\text{Exposure to Sovereign Bond (USD)}}{\text{PPP adjusted GBP (international USD)}} \times \text{Sovereign Production Emissions (tCO2e)}$						
Key Metrics	Not Applicable: Target setting approach forthcoming						
Data Availability and Sources	Data can be retrieved from OS Climate.						

78 Under PCAF's standard, DFI or MDB Sovereign Loans may also be included in this definition.

79 The emissions for this asset class should not be consolidated with rest of the portfolio due to inherent double counting.

Scientific Pathway or Benchmark Sources	<p>Alliance members expect all governments to follow through on their Paris Agreement climate commitments as stated in the Alliance's commitment. The overall objective remains to limit global warming to 1.5°C (with no or limited overshoot), while respecting country differences.</p> <p>The Assessing Sovereign Climate-related Opportunities and Risks (ASCOR) project is advancing work on climate assessment of sovereigns especially taking into account societal and just transition considerations. This work will significantly inform the Alliance's view on sovereigns' net-zero alignment and climate financing needs.</p>
Reporting (incl. Timeline)	<p>Alliance members <i>shall</i> internally track and where possible publish carbon data for sovereigns' carbon accounting by YE2023 and report to Alliance by YE2024.</p>
Target (incl. Timeline)	<p>To be developed.</p>

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 decarbonization 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.

Sovereign debt portfolios also highlight the important role governments have in enabling asset owners to succeed in their portfolio decarbonisation. The relationship of portfolio decarbonization 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.

Acknowledging the differences between sovereigns and corporates, the Alliance has nevertheless tried to apply a comparable logic to the accounting methodology (based on PCAF), using three scopes and proposing both absolute and intensity metrics. Due to the differences mentioned above, the carbon⁸⁰ footprint of sovereign debt cannot be combined with the carbon footprint of corporates and will therefore be reported separately.

80 Carbon refers to carbon dioxide and all other relevant GHG gases transferred to CO₂e.

Guiding design philosophy:

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 whilst also having less contributed to cumulative greenhouse gasses already emitted, less resources available to mitigate and/or adapt for climate change. This 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 not have an unintended bias that may result in investments being channelled 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, this Protocol version uses production emissions in line with PCAF’s standards and may be updated to also include consumption emissions as these become more readily available.

The Alliance started working on a target setting approach for sovereign counterparties in 2021, which will be consulted on and reported on in line with the dates mentioned in the remainder of this section over the coming years.

In line with other asset classes, a target setting approach requires carbon footprint measurement (i.e., accounting), accepted assessment methodologies⁸¹ and target-setting methodologies. The Alliance has joined forces with partners in two projects to develop the respective standards: PCAF for carbon footprint accounting and ASCOR for assessment methodology. The target-setting approach will be developed as the final step in the process and will be included in future versions of the Protocol.

Sovereign debt carbon footprint measurement

Asset class definition

This asset class includes sovereign bonds of all maturities issued in domestic or foreign currencies. Sovereign debt is typically issued by the central government or treasury department.⁸² Sub-sovereigns, supra-nationals, and municipals are explicitly not part of this outline and will be considered in a separate workstream.

81 In this case assessment methodologies mean the ability to assess the issuer—a sovereign—in relation to a science-based pathway.

82 Under PCAF, for DFIs or MDB Sovereign Loans may also be included in this definition.

Scope definition

The accounting methodology below is based on the current draft version of PCAF's Global GHG Accounting and Reporting Standard. Please note that this standard is still being reviewed and hence the methodology is subject to change. The Alliance will update the methodology as necessary to reflect potential changes.

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 always need to be reported stand-alone.

Table XVI: Definition of Scope 1, 2 and 3 for Sovereigns

Scope 1	Scope 2	Scope 3
<p>Includes domestic GHG emissions from sources located within a country's territory.</p> <p>This aligns with the UNFCCC definition of domestic territorial emissions, including emissions from exported goods and services</p>	<p>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.</p>	<p>Includes emissions attributable to non-energy imports as a result of activities taking place within a country's territory.</p>

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.⁸³

⁸³ Note, to the best knowledge of the Alliance Scope 2 and 3 data is frequently only available for OECD countries.

Although **Production Emissions** is currently the key metric to account for sovereign GHG emissions, it is also recommended that financial institutions track the GHG emissions of countries more holistically and report Consumption Emissions—even if they are currently not included in the UNFCCC Paris Agreement. In addition, in order to reflect different ways of treatment of LULUCF (accounting of land use, land-use change, and forestry) by countries and investors, asset owners *should* report production emissions including and excluding LULUCF.

Consumption Emissions reflect the demand side of a sovereign’s emissions and account for consumption patterns and trade effects. This metric provides a broader view of a sovereign’s GHG emissions and tackles the issue of carbon leakage that arises due to production shifts from countries where goods and services are consumed later and/or elsewhere. It is also an important metric in the context of broader sovereign responsibility for emissions caused, and may unintentionally benefit certain markets and disadvantage others. As sovereigns focus on production emissions GHG reduction targets, their consumption emissions might follow a different trend. Consumption emissions can be calculated as the sum of Scope 1, 2 and 3 emissions with exported emissions subtracted.

Attribution of emissions

Attribution of emissions for Sovereign Debt is calculated in accordance with PCAF’s requirements:

$$\text{Attributed emissions} = \frac{\text{Exposure to Sovereign Bond (USD)}}{\text{PPP adjusted GBP (international USD)}} \times \text{Sovereign Production Emissions (tCO2e)}$$

Rationale for attribution

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 debt is not a good indication of a country’s total value, as sovereigns rarely finance themselves primarily through debt but through 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, by taking Purchase Power Parity (PPP)–adjusted GDP—the value of a country’s output as a proxy for the ‘value of the country’—adjusted by the PPP factor).

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 and impact on production processes and therefore emissions.

Emissions intensities

In the course of the work of PCAF's sovereign debt working group, the following intensity metrics for normalisation and comparison of sovereign production and consumption GHG emissions intensity, respectively, have been defined as follows:

- For sovereign production: Production Emissions/PPP adjusted GDP
- For consumption emission intensity: Consumption Emissions/Capita

For consumption emissions, PCAF recommends using normalisation per capita. Consumption emissions reflect the demand side of the economy, and normalisation per capita appears natural. In line with the arguments stated above, PCAF recommends using the consumption emissions intensity as an additional metric to obtain a holistic view of a country's GHG emissions.

For all of the metrics, PCAF recommends that financial institutions review at least 5 years of historical data for a better understanding of sovereigns' overall emissions trends and underlying patterns (e.g., production versus consumption) if available.

Sovereign debt assessment

The Alliance is partnering with the ASCOR project to develop a set of indicators and metrics to assess a sovereign's climate risk. The Project will provide a tool that gives investors a common understanding of sovereign exposure to climate risk and of how governments plan to transition to a low-carbon economy. ASCOR will allow investors to assess governments' climate-related commitments, their policy frameworks (including carbon pricing, energy subsidies, the phase-out of combustion vehicles, deforestation, and land use policies) and the actions they are taking to ensure that the benefits of the low carbon transition and of adaptation are shared amongst their citizens.

The approach currently proposes to assess a sovereign's climate risk according to:

- The Sovereign's Emission Pathways
- The Sovereign's Policies for Mitigation and Adaptation to Climate Change
- The Sovereign's Financing needs for mitigation and adaptation

The framework is accounting for "fair share" by evaluating a nation's 2030 emission targets against country specific fair share emission budgets, based on review of scientific literature. The allocations are based on the three main climate equity principles: responsibility, capability, and equality. For responsibility, cumulative historical emissions per capita starting in the year 1970 is taken.⁸⁴ For capability, GDP per capita will be used. For equality, national population levels will be considered.

Once the initial development stage is complete, ASCOR will pilot the indicators and metrics by applying them to a universe of 20 representative countries, covering both developed and emerging markets (e.g., USA, Germany, China, Saudi Arabia).

84 Data availability prior to 1970 is deemed unreliable.

The steps outlined below will then follow:

- Complete development stage of indicators and metrics by Q4 2022,
- Pilot indicators and metrics on 20 countries and engage with key stakeholders and issuers to ensure the framework's usability. Results of assessment expected by Q1 2023, and
- Once launched, the ASCOR tool will publish its analysis as well as the underlying data and indicators, which will enable investors to make regular assessments of all sovereign issuers.

The ASCOR assessment approach would then be available for Alliance members to utilise in assessment of a Sovereign's alignment with no or limited 1.5°C pathways.

Sovereign debt target setting

The final stage of development for Sovereign Debt is the target setting approach. The Alliance envisions collaborating with a range of partners (e.g., SBTi) in developing this approach to advance harmonization and convergence across the ecosystem.

8. Reporting

Reporting on progress is firmly rooted in the Alliance's [Commitment](#) and the [Governance document](#) (which includes a description of the [Accountability Mechanism](#)).

The commitment document signed by C-Suites of all Alliance members, commits member organisations to tracking and communicating on progress, by

- setting intermediate individual targets, in line with the Alliance's Target-Setting Protocol, within 12 months of joining;
- publishing (publicly disclosing) intermediate individual targets;
- disclosing annually and publicly on progress towards intermediate individual targets, including on investment portfolios' emissions profile and emissions reductions;
- reporting intermediate individual targets and annually reporting on progress towards intermediate individual targets, via the internal Alliance reporting template for aggregation and publication in the Alliance progress report; and
- where the Alliance has or establishes a Position, considering to adopt and publish, where applicable, a corresponding individual investment policy or approach, informed by the Alliance's Position, as applicable within twelve months of joining the Alliance, or within twelve months of publication of the Alliance Position.

Each Alliance member is also encouraged to go beyond the Protocol by setting more aspirational ambitions. More ambitious quantitative targets in the areas defined in the Protocol may be submitted through the reporting template. Any target category which is not (yet) covered by the Protocol is not systematically collected; however, members are encouraged to publish such targets independently.

The Alliance's collective progress reporting

The Alliance shall issue an annual progress report reflecting the Alliance's work and achievements. The annual progress report is based on the aggregated data of Alliance members' reporting to cover progress against targets to date. In addition, the Alliance shall issue a more detailed report on quantitative achievements every five years. For this purpose, the Alliance will release some of the submitted data in aggregated form. Member-specific data will only be made available via company links as provided by members to the Alliance.

Member target setting and reporting schedule

Table XVII: Target setting and reporting schedule

	Target Setting	Progress Reporting (against targets set)
Public Disclosure	Alliance members shall publish ⁸⁵ targets within 12 months of joining the Alliance.	Alliance members shall disclose annually and publicly on progress towards intermediate individual targets, including on investment portfolios' emissions profile and emissions reductions. This means reporting on absolute emissions, irrespective of whether intensity targets are set.
Submission to Alliance Secretariat	These targets shall also be submitted ⁸⁶ to the secretariat using the Alliance reporting template for review and aggregation in the progress report within the next reporting period (unless a member joins within 6 months before the start of the reporting then the member should submit against the following year's reporting cycle). Reporting periods always take place in the first half of every year.	Alliance members shall annually submit to the Secretariat (via a reporting template) their progress towards meeting their intermediate targets. Alliance members shall also report publicly and individually on progress against target achievement every five years in line with Article 4.9 of the Paris Agreement (the 'global stocktake'). This progress reporting includes investment portfolio emission profiles and emissions reductions and should be based on the latest year-end portfolio figures. The reported climate data may be from an earlier date due to the updating cycles of data vendors.

Reporting cycle

All Alliance members **shall** set and publish targets within 12 months of joining the Alliance. Collection and review of targets and progress by Secretariat is in line with the reporting cycle schedule below.

85 To 'publish' means to publicly disclose targets within the public domain, and the presentation is the discretion of the Alliance member respecting the member's own publication and communication requirements.

86 To 'report' the initial target means to submit the details of the publish target in accordance with the Alliance template to the Alliance secretariat for review and aggregation in the annual progress report.

Table XVIII: Reporting schedule of initial targets to the Alliance

Year X	Year X Month of joining	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Year X+1	Targets reported to the AOA in Reporting Period of Year X+1	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes				
	Time from joining until target setting	16 months	15 months	14 months	13 months	12 months	11 months	10 months	9 months				
Year X+2	Targets reported to the AOA in Reporting Period of Year X+2									Yes	Yes	Yes	Yes
	Time from joining until target setting									20 months	19 months	18 months	17 months

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