GFANZ
Glasgow Financial Alliance for Net Zero

Decarbonization Contribution Methodologies

Transition Finance Workshop Series

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Members of the financial sector-specific net-zero alliances comprising GFANZ have signed up to the ambitious commitments of their respective alliances and are not automatically expected to adopt the principles and frameworks communicated within this material, although we expect all members to increase their ambition over time, so long as it is consistent with members' fiduciary and contractual duties and applicable laws and regulations, including securities, banking, and antitrust laws.

Housekeeping

How to use the GFANZ Transition Finance Workshop Series

This series of workshops seeks to familiarize the audience with supplementary guidance on transition finance. The workshops are based on material that was developed by the GFANZ Secretariat and aims to provide financial institutions with background on potential technical methodologies to complement the financial sector's work on reducing financed emissions and execute their individual net-zero transition plans. The guidance presented here do not prescribe a specific course of action but offer information and options to help those financial institutions preparing net-zero transition plans.

Important points to consider before engaging with the material are:

Voluntary information: This workshop presents voluntary, non-binding supplemental information for financial institutions to consider. Financial institutions are encouraged to use this information in conjunction with the voluntary recommendations and guidance but not where superseding jurisdictional requirements on Transition Finance or related disclosure requirements, or contractual requirements, including mandates with clients. Some types of financial institutions may also have unique legal or regulatory constraints that may differ by jurisdiction and that may impact the extent to which individual elements of this workshop can be considered.

Pan-sector approach: The technical information herein aims to be applicable to institutions across the financial sector, but may not be to each individual financial institution or sector-specific alliance. This workshop is principles-based so that it can be interpreted and applied at the discretion of individual financial institutions' own processes and policies. Financial institutions are encouraged to consider this technical information alongside the guidance produced by sector specific net-zero alliances, taxonomies, and other organizations, as appropriate.

Unique roles and application for different financial institutions: Each financial institution is encouraged to review the technical information based on considerations such as its business model, portfolio exposure, relationship with clients and portfolio companies, choice of focus for net-zero financing strategy, and the contractual and regulatory environment within which it operates. The technical information herein should be considered as a resource, not as a specific course of action.

Focus on development and implementation: This workshop aims to provide technical information for further development, highlighting the existence of challenges and different understandings among sector initiatives and to begin to outline potential approaches to assessing and measuring Transition Finance exposure across the four key transition financing strategies, rather than specific guidance on disclosure. Each financial institution should determine specific content, location, and frequency for disclosing relevant information related to Transition Finance, consistent with the guidance of its respective sector-specific alliances, business confidentiality, and jurisdictional requirements, if any.

Living document: The GFANZ Secretariat acknowledges that supporting pathways, data, tools, and methodologies may be nascent or exploratory and may not yet be available for all regions, sectors, and situations, and that policy, regulation, technology, and science are evolving, often at a rapid pace. As financial institutions work to implement the Transition Finance strategies outlined here and in other technical concepts more widely, it is expected that the necessary tools, methodologies, and datasets will further develop.

Acknowledgements

This workshop is based on the GFANZ Secretariat Technical Review Note "Scaling Transition Finance and Real-Economy Decarbonization Methodologies". The GFANZ Secretariat is thankful for the participation of the financial industry, NGOs, and subject matter experts. The Note was informed by a review of other relevant frameworks developed by leading initiatives in use by market participants, in addition to four primary types of engagement: 1) Open consultation, 2) Focus groups, 3) Outreach events, 4) Webinars.

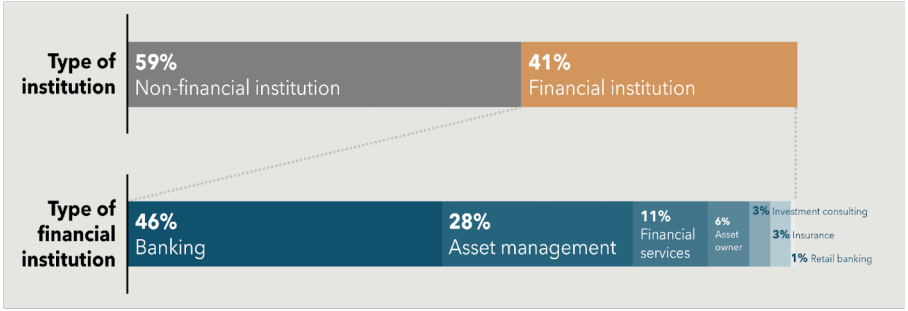
Such engagement served two primary purposes: i) to raise the level of awareness and encourage stakeholders' engagement with GFANZ's work, and ii) to solicit and inform feedback on the proposed transition financing strategies and potential decarbonization contribution methodologies.

Promoted to 15,000+ and engaged 1,700+ individuals across 120 organizations

2,000+ Downloads & **300+** Responses via consultation and bilateral engagements

15,000+ Reached with "Requests for input"

1,700+ Directly engaged via events, workshops, and working groups



The GFANZ workshop series

The **GFANZ Workshop in a Box** series aims to provide an overview of the GFANZ tools and guidance. It is suitable for those new to this space, or for senior management and board members who need a high-level understanding of the challenges of net zero and the GFANZ initiative. The **Transition Finance series** provides a high-level overview of the GFANZ Secretariat's Technical Review Note on *Scaling Transition Finance and Real Economy Decarbonization Contribution Methodologies*.

Basics	**An introduction to net zero, GFANZ, and the NZTP**	
	Where to start with the GFANZ NZTP?	
	Transition Finance: Basics	*Relevant*
GFANZ NZTP themes	**Foundations**	
	Implementation Strategy	
	Engagement Strategy	
	Metrics and Targets	
	Governance	
Real-economy transition plans	**Basics for real-economy transition plans**	
	Themes of real-economy transition plans – Part 1	
	Themes of real-economy transition plans – Part 2	
Transition Finance	**Four Key Transition Financing Strategies**	*Relevant*
	Decarbonization Contribution Methodologies	*This Session*

Workshops are independent of each other and can be viewed in any order. Each workshop takes approximately one hour.

For those less familiar with GFANZ, the **Introduction** workshop provides helpful baseline information on GFANZ and the net-zero transition plan framework.

The **Transition Finance: Basics** workshop provides a high-level overview of the four key transition finance strategies and the decarbonization contribution methodology of Expected Emissions Reductions.

The **Four Key Transition Financing Strategies** workshop**,** dives deeper into the four transition financing strategies and discusses their attributes in more detail.

This workshop on **Decarbonization Contribution Methodologies** outlines proposed methodologies to calculate forward-looking metrics like Expected Emissions Reductions associated with the four transition financing strategies.

Audience participation is encouraged by slides with suggested questions (marked by the symbol to the right) for discussions and where specific examples for the use of the guidance are outlined.

The trainer holding this workshop can find further information as well as a contact form to feed questions or insights from the participation sessions back to GFANZ under this link. Further information on the GFANZ recommendations and ongoing work can be accessed on the GFANZ website.

Introduction

The **Decarbonization Contribution Methodologies** workshop is aimed at those already familiar with net zero, GFANZ, its mission, and the *Transition Finance: Basics* workshop. This workshop reviews how complementary forward-looking metrics, like Expected Emissions Reduction (EER), can enable the scaling of Transition Finance. Additionally, it outlines the potential calculation approaches for EER across the four key transition financing strategies.

Setting expectations of Transition Finance

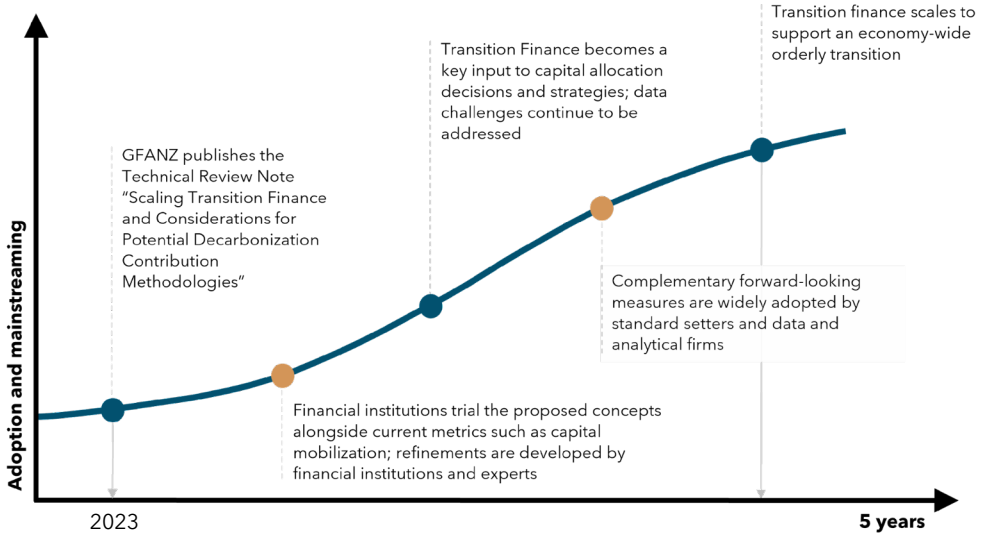
An illustrative timeline of the adoption of Transition Finance and potential decarbonization contribution methodologies

All stakeholders play a critical role in accelerating financing across the four key transition financing strategies.

Policymakers and governments can help to bring clarity to the landscape of transition finance by linking region-specific transition finance activities and national emissions reduction targets, as well as by developing supporting taxonomies, regulations, standards, and enabling policies that facilitate such activities.

The development and operationalization of net-zero transition plans by both financial institutions and real-economy companies continues to be an important lever to enable increased financial flows toward the four key transition financing strategies.

The nascency of decarbonization contribution methodologies require further refinement through testing and adoption by real-economy companies, financial institutions, and technical experts.



In this workshop, you will learn ...

- What are potential Decarbonization Contribution Methodologies?
- How can Decarbonization Contribution Methodologies and forward-looking measures such as EER contribute to real-world emissions reductions and the scaling of Transition Finance?
- How do you calculate EER for:
  - Climate Solutions?
  - Aligned & Aligning entities?
  - Managed Phaseout assets?

Structure of the four key financing strategies workshop

Background: The need to scale Transition Finance

- Reducing financed emissions vs. financing emissions reductions
- GFANZ publications

Decarbonization Contribution Methodologies (DCM) Explained

- What is Expected Emissions Reductions?
- Why it matters: Use cases of Expected Emissions Reductions
- Assessment and Integration of EER with other KPIs
- Proposed Steps for Measuring EER

Calculating EER

- Climate solutions
- Aligned
- Aligning
- Managed phaseout

Financial Institution Use case considerations

- Principles
- Allocation considerations and other adjustments
- Aggregation, Backtesting & Verification
- Testing and adoption

Background:
The need to scale Transition Finance

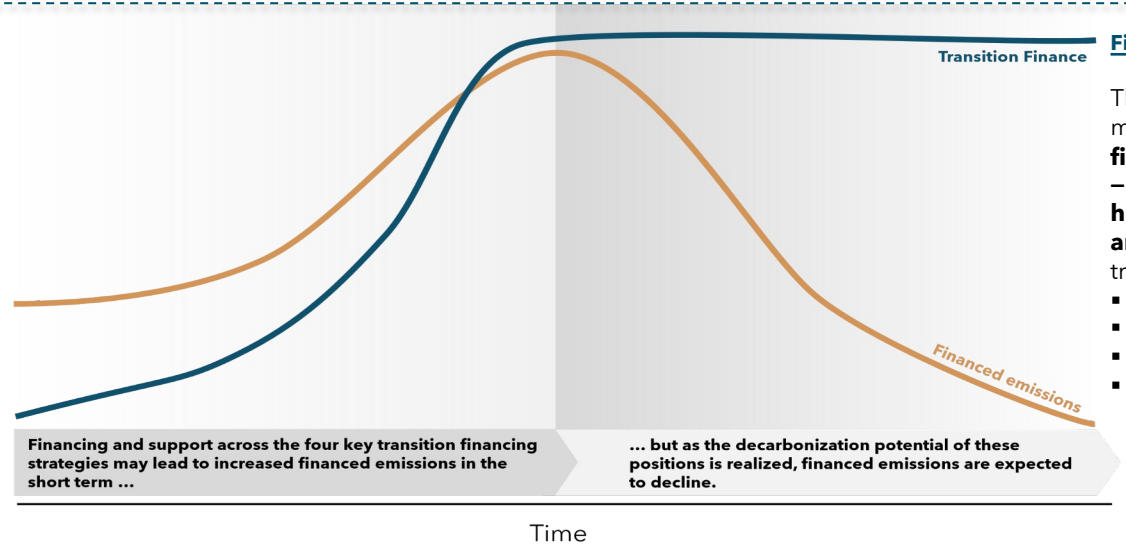
Reducing financed emissions vs. financing emissions reductions

When considering the potential impact to the planetary carbon budget, not all decarbonization and transition opportunities deliver comparable system-wide carbon reductions.

Methodological Challenge: **Global businesses have committed to bridge the funding gap and enable real-economy company transitions to net-zero emissions.** However, current mechanisms that rely solely on historical and point-in-time metrics, targets, and considerations may not adequately drive capital allocation to critical areas, such as heavy-emitting sectors. (For more background on the capital gap please see the TF basics WIB here)

Reducing Financed Emissions:

While important for evaluating how financing activities align with the carbon budget, using solely financed emissions may not drive financing and support for Climate Solutions, can deter financing of high-emitting portfolio holdings and may also deter clients from adopting strategies to meet their own targets.



Financing Emissions Reductions:

The greatest emissions reduction may be achieved **by directing financing and related services to – rather than divesting from – high-emitting sectors, entities, and assets** across the four key transition financing strategies:

- **Climate Solutions**
- **Aligned**
- **Aligning**
- **Managed Phaseout**

Clearly **defining transition finance activities and incorporating forward-looking metrics** as a complementary consideration may more fully capture the "value add" of the decarbonization potential of high-emitting exposures, thereby catalyzing Transition Finance.

GFANZ publications

GFANZ introduced the four key transition financing strategies in its NZTP framework in 2022. The GFANZ Secretariat further developed the strategies and discussed potential forward-looking measures of emissions reduction in 2023.

In the 2022 GFANZ NZTP framework, GFANZ defined Transition Finance and introduced the four key transition financing strategies that would enable an orderly* and inclusive whole-economy transition.

Recommendations and Guidance on Financial Institution Net-zero Transition Plans

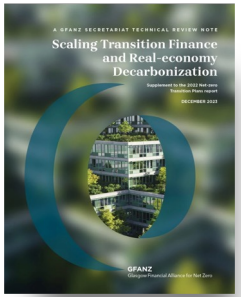
This publication describes how financial institutions across the financial system can operationalize their net-zero commitments and support the real-economy transition.

Download the summary

Download the report

Download the appendix

In 2023, the GFANZ Secretariat provided further details on the four transition financing strategies and discussed potential approaches to calculate Expected Emissions Reductions in the Technical Review Note.



Scaling Transition Finance and Real-economy Decarbonization

This GFANZ Secretariat Technical Review Note further develops the Transition Finance strategies by providing a supplement to the 2022 GFANZ NZTP guidance and discusses potential decarbonization contribution methodologies as a complement to today's metrics.

Download the report

The Technical Review Note on Scaling Transition Finance and Real-economy Decarbonization is in two parts:

Part I is a supplement to the GFANZ NZTP framework and introduces principles-based attributes for each of the GFANZ four key transition financing strategies.

Part II explores forward-looking approaches to evaluate potential decarbonization contributions in support of scaling transition finance and introduces the concept of Expected Emissions Reduction (EER).

This workshop focuses on Part I and involves a deep dive around the four key financing strategies. For more information on Part II, please see its corresponding workshop in a box here.

*GFANZ uses the term "orderly transition" to refer to a net-zero transition in which both private sector action and public policy changes are early and ambitious, thereby limiting economic disruption related to the transition (e.g., mismatch between renewable energy supply and energy demand). For reference, the Network for Greening the Financial System (NGFS), which develops climate scenarios used by regulators and others, defines "orderly scenarios" as those with "early, ambitious action to a net-zero GHG emissions economy," as opposed to disorderly scenarios (with "action that is late, disruptive, sudden and/or unanticipated"). In an orderly transition, both physical climate risks and transition risks are minimized relative to disorderly transitions or scenarios where planned emissions reductions are not achieved. This explanation applies to all mentions of the term "orderly transition" in this workshop

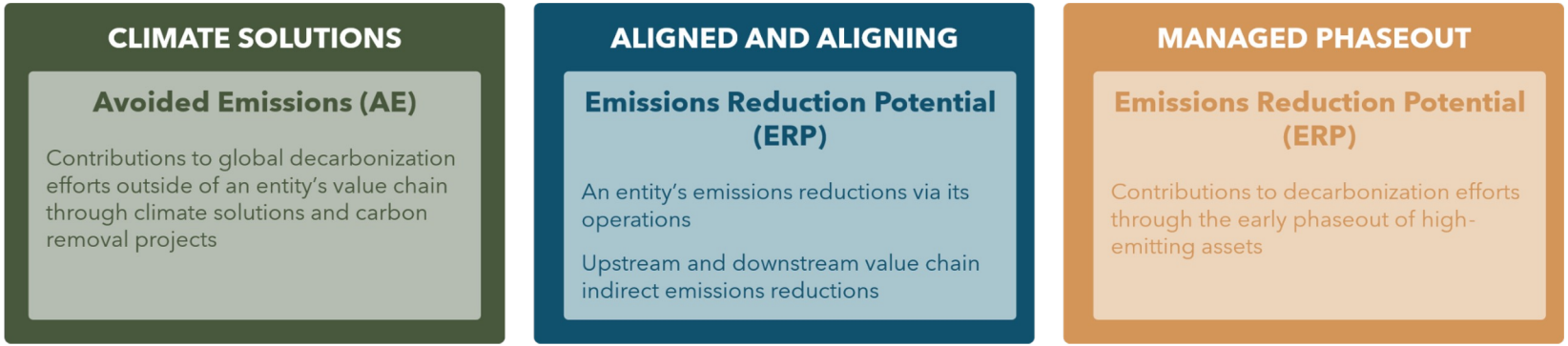
Decarbonization Contribution Methodologies (DCM) Explained

What is Expected Emission Reductions?

GFANZ introduced the concept of Expected Emission Reductions (EER) as a complementary measure to existing KPIs that may offer perspective on the forward-looking emissions reduction potential of holdings and opportunities.

EER offers a potential approach to assess and quantify the future decarbonization contribution potential of exposures, with transparency and awareness of limitations paramount to credible application.

The GFANZ Secretariat Technical Review Note outlines potential decarbonization contribution methodologies for deriving EER for each of the four key transition financing strategies:



Why it matters: Use cases of Expected Emissions Reductions

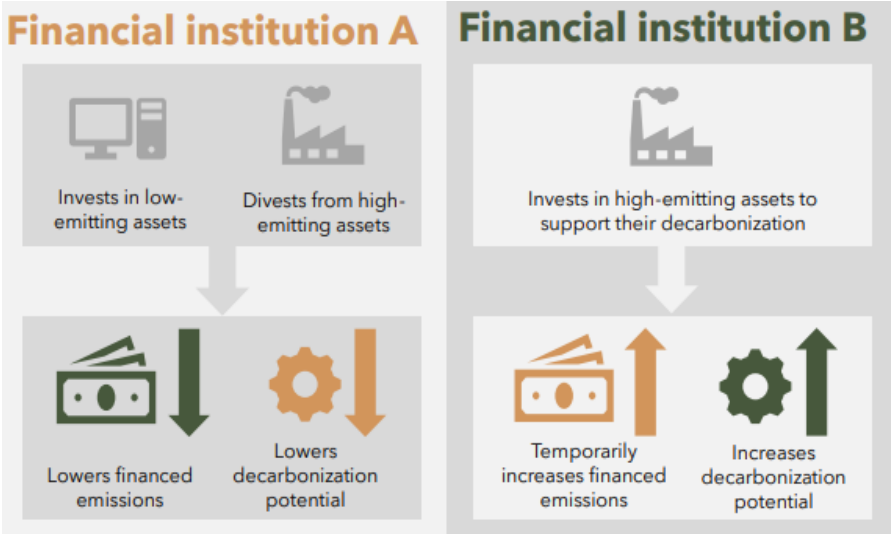
Forward-looking metrics, like EER, together with historical/point-in-time measures (e.g., financed emissions), can provide a more holistic perspective on how financing is supporting the transition.

EER recognizes the **future emissions reduction potential** of companies and assets, providing a more comprehensive view for financial institutions to consider in supporting high-emitting actors alongside lower-emitting counterparts.

As illustrated, by relying only on financed emissions, Financial Institution A may drive financing to assets and entities that are inherently low-emitting or have already decarbonized. **This may result in less decarbonization impact from capital deployed.**

By financing high-emitting assets and companies – backed by a credible net-zero transition plan – **financial institution B may temporarily increase financed emissions, but also may unlock deeper, more significant decarbonization over time** if financial institution B supports those companies to deliver on their own decarbonization strategies.

A real-economy company can calculate its entity-level and/or the EER for their decarbonization levers to provide measures of projected impact and serve as valuable information for financial institutions to inform financing decisions.



The Time Value of Carbon: **GHG emissions reductions today are more impactful than future reductions** because of the escalating nature of climate-related risks. **The earlier the decarbonization potential is realized, the longer the benefit seen by the climate system**, reducing systemic risk and associated negative impacts on global GDP. Hard-to-abate sectors are in need of massive investments in transition finance in the short- to medium- term to avoid the lock-in of high-emitting technologies in the long-term.

Assessment and Integration of EER with other KPIs

EER may be used as a complementary KPI to:

- Support internal assessments and decision-making,
- Inform net-zero transition plans,
- Support Transition Finance planning and capital allocation processes

It may be helpful to assess EER in a dashboard format to measure and monitor progress against strategies over time. For example:

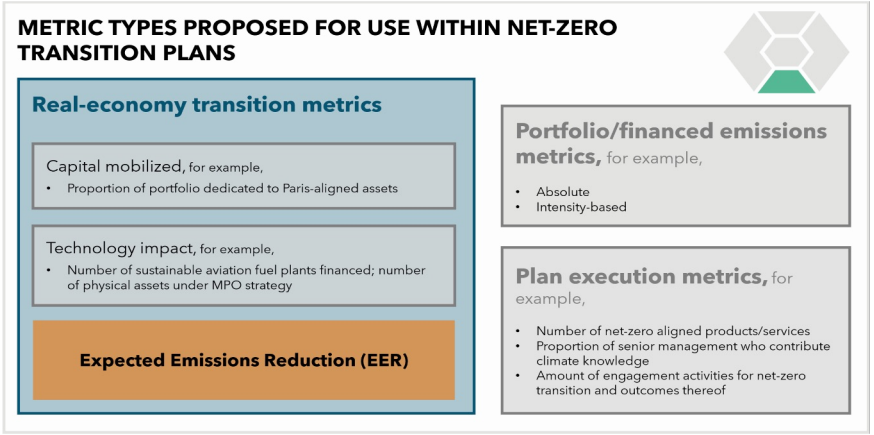
- counterparties' production plans,
- engagement,
- and stewardship statistics could be featured alongside capturing capital deployed

EER may be integrated with existing metrics to develop new KPIs.

EER may also be assessed in conjunction with other KPIs, such as:

- Capital deployed
- Return on investment (ROI)
- Expected Cumulative Emissions (ECE)

Transition-related metrics for input to internal analysis



EER calculations may be developed in house by FIs based on internal data, or produced by real-economy clients and portfolio companies as part of their net-zero transition plans or in capex requests.

Proposed Steps for Measuring EER

1. Benchmark

(business as usual/baseline)

Climate Solutions – LCA of current high-emitting activity

Aligned/Aligning – Develop a business-as-usual pathway

Managed Phaseout – Current operations

Construct a representation of what would have happened in the absence of the transition-related actions

2. Projection

Climate Solutions – LCA of no/low-emitting alternative

Aligned/Aligning – Forward-looking emissions profile

Managed Phaseout – Retirement phases

Construct the planned emissions impact

3. Calculation

Compare metrics from 1 and 2, expressing the difference: EER

Compare the difference between Benchmark and Projection to express the Expected Emission Reduction

Allocation

To support internal decision-making and link real-economy impact to transition finance strategies

A potential final step is Allocation of the EER to the financial institution, drawing parallels with the allocation of emissions in the creation of a portfolio footprint.

Questions for discussion and reflection

- How can the concept of Expected Emission Reductions (EER) enable the scaling of Transition Finance and/or drive real-economy emissions reductions in your organization?

- How can your organization benefit from using forward-looking metrics, like EER, as a complement to existing KPIs?

- Discuss how EER might be integrated with your institution's current suite of KPIs.
  - Would it best fit in a preexisting dashboard?
  - Would a new tool need to be built for internal use?

Calculating EER

Climate Solutions

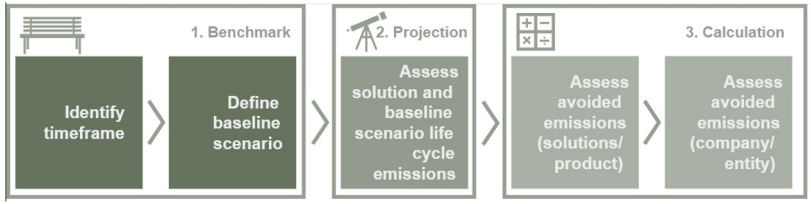
EER Methodology: Avoided Emissions (AE)

The Avoided Emissions method is introduced as one approach to estimate EER associated with Climate Solutions

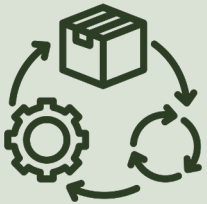
Shown here are the GFANZ Secretariat's proposed steps of EER calculation method mapped to a more detailed five step approach for quantifying EER using the AE approach.

This five-step approach is based on the WBCSD[1] guidance on assessing AE.

Since the focus of Climate Solutions is on end-use emissions reduction, Life Cycle Analysis (LCA) is used to derive EER.



Calculating the EER of Climate Solutions using Life Cycle Analysis (LCA)



- Life Cycle Analysis (LCA) is a methodology for assessing the environmental impact at all stages of the life cycle of a commercial product, process, or service.
- In the case of a manufactured product, environmental impacts are assessed from raw material extraction and processing, through to the product's manufacture, distribution, and use to the recycling or final disposal.
- In absence of sufficient data for LCA, simplifications (such as reducing the emissions boundary to end-use emissions) may be necessary as an interim measure.

[1]WBCSD. Guidance on Avoided Emissions: Helping business drive innovations and scale solutions toward Net Zero, March 2023, p. 28.

Calculating Climate Solutions AE-EER

Benchmark

Step 1: Develop a counterfactual (baseline scenario) of what would have happened in the absence of the Climate Solution

To calculate LCA emissions upstream, production use, and end-of-life emissions data from both the baseline and the Climate Solution is needed

- EERs can vary significantly based on the region where a Climate Solution is deployed
- LCAs should incorporate regional granularity and should consider local environmental conditions, regulations, and resources

In the absence of a baseline scenario, or sufficient data to construct one, BAU pathway scenarios, which are often static, could be used to estimate the reduction potential

Project

Step 2: Project, update, and monitor the baseline scenario

Over the lifetime of the baseline or Climate Solution, specific factors impacting the emissions profile may change (technological advancements, changes in energy mix, policy changes, evolving industry standards, demand changes, etc.)

- These updates are relatively complex to implement as they entail more assumptions and uncertainty
- The emissions characteristics data for both the baseline and Climate Solution should be periodically updated to reflect changes

The time horizon underpinning the baseline should be consistent with the Climate Solution's projected emissions and the production curve used in the calculation assumption

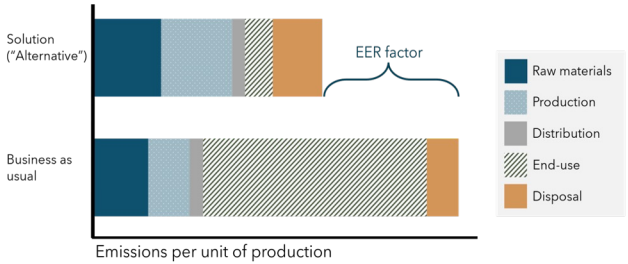
Calculate

Step 3: Calculate AE-EER by taking the EER factor and multiplying it by production

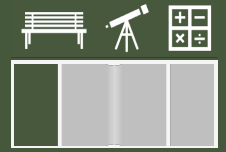
The delta between the BAU from Step 1 and Step 2 is used to determine the EER factor

The EER factor is then multiplied by the production curve

AE-EER = EER factor × production

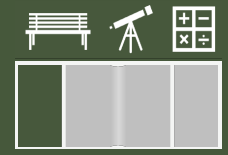


Additional Considerations



Timeframe	Enablers	Aggregation to the portfolio level
When a real-economy company assesses the AE of its products and services, the assessment should be consistent with the timeframe used to assess its direct and indirect emissions as part of the its GHG inventory	Because there currently is no widely accepted methodology for allocating emissions reductions from a Solution to multiple Enablers in the value chain, the entirety of the Solution's AE-EER could be attributed to the Enabler FIs are strongly encouraged to disclose where Enablers are part of the same Solution value chain because aggregating at the portfolio level causes inflated decarbonization impact	**Option 1**: When calculating EER using the AE approach on the "year of sale" basis, the entire life cycle emissions of different Climate Solutions in the portfolio could be aggregated, considering the year when the solutions are sold **Option 2**: AE-EER could be annualized at the Climate Solution level. An annualized EER could also be used to aggregate the potential emissions reduction impacts from multiple Climate Solutions The process of annualizing could be valuable for financial institutions as it allows projecting EER for interim target time horizons, such as the crucial stop-gap date of 2030 which assumes a whole-economy reduction of 50% in GHG emissions.

Climate Solutions AE-EER: Example



Just Climate approach

The investor, Just Climate, seeks to invest in climate solutions with highest climate impact and attractive market returns.[1] Just Climate has three frameworks that are core to its investment process: Climate Impact Quality, Business Quality, and Management Quality. [2] In the Climate Impact Quality framework, Just Climate uses avoided emissions over 10-years as a quantitative measure to assess the scale and timeliness of climate impact.

As part of this assessment, there are also two requirements with respect to the assessment of additionality:

- Is decarbonization of the baseline scenario for these GHG emissions not already happening fast enough to be consistent with a 1.5 degrees C global warming pathway?
- Is the company going to accelerate decarbonization vs. the baseline scenario, for example through reducing costs, historical barriers for adoption, or perceived risk?

Pinpointing the quantitative additionality of a financing decision is challenging. To address this, Just Climate employs a structured approach that assesses various barriers, sourced from the GHG Protocol Project Accounting Standard, [3] as a proxy for additionality. The approach involves evaluating the barriers that a specific climate solution could address to expedite decarbonization vs. the baseline scenario.

Barrier Types	Barrier questions to support Just Climate's assessment of additionality
Technology	• Is a sector lacking the needed technology to decarbonise? (either a new technology that displaces a higher GHG one or a significant improvement on an existing technology (e.g., efficiencies))
Financial and budgetary	• Are high costs preventing or slowing down roll out? • Is there limited or no access to capital for this climate solution in a given region? • Are there high perceived risks, resulting in high borrowing costs or lack of access to credit or capital?
Technology operation and maintenance	• Is there a lack of trained personnel capable for installing, maintaining, operating, or managing a technology or facility and lack of education or training resources?
Infrastructure	• Is there inadequate supply or transport infrastructure for inputs, spare parts, fuels, etc.? • Is there a lack of infrastructure required to integrate and maintain new technologies/practices?
Market structure	• Do market barriers or uncorrected market 'failures' impede the adoption of the technology or practice in question?
Institutional / social / cultural / political / consumer behaviour	• Is there institutional or pollical opposition to the implementation of the technology or practice in question? Is there supportive or prohibitive regulation in place? • Is there limited or no institutional capacity required to facilitate the technology or practice in question? • Are there any consumer behaviour-related barriers to accelerating decarbonisation?
Resource availability	• Is there an irregular or uncertain supply of resources required to implement or operate a technology or practice?
Other	TBD

[1]Although Just Climate seeks to deliver the highest climate impact and attractive market returns, this is an aspiration and there is no guarantee this goal will be achieved. [2]Just Climate, Just Climate's Approach to Climate-led Investing and Disclosure, September 2023. [3]Refer to Table 8.1 in The GHG Protocol for Project Accounting.

Aligned & Aligning

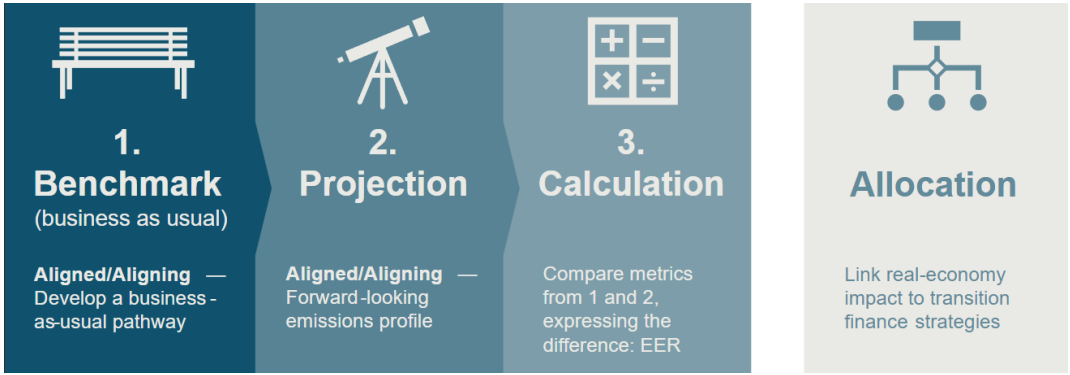
EER Methodology: Emissions Reduction Potential

Emissions Reduction Potential (ERP) is a forward-looking methodology applied at the entity level over a specified time horizon and compared to a BAU baseline pathway

ERP seeks to measure the decarbonization efforts inside of an entity's emissions boundaries and can include both reductions of direct emissions (e.g., emissions occurring during an automobile company's manufacturing process) as well as indirect emissions in the entity's value chain (e.g., procuring electricity or sourcing steel to manufacture the automobile).

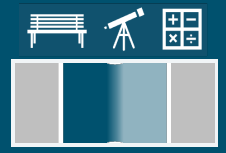
This method draws on key concepts from the CDP's Emerging Climate Technology Framework (2021)[1]

When computing a forward-looking emissions profile, the method takes into consideration the reduction commitments and targets of entities, for example, based on their net-zero transition plans.



[1]CDP notes that the Framework was released requiring further iteration and development. The concepts drawn on include distinguishing between a reference and a projected scenario while adhering to principles necessary for implementation. These principles, as outlined on pages 11-17, are critical to ensuring credibility, achieving intended impacts, and avoiding unintended consequences. The use of ERP in this Technical Note has been applied more broadly across the whole economy.

Calculating Aligned & Aligning ERP-EER



Step 1: Construct the BAU benchmark (determining baseline emissions)

Two approaches are contemplated for beginning the construction of a BAU benchmark:

1. Using entity-specific current or historical emissions data
2. Allocating sectoral and regional emission to the entity

In both cases the starting point would be applied over a time horizon and then modified based on information judged to be known or probable, e.g., policies that target emissions reductions or business strategies that would impact operational emissions.

Step 2: Calculate the entity's forward-looking emissions profile (emissions projections)

Two sources of data for an Aligned or Aligning entity's forward-looking emissions profile could be considered for this process:

1. The entity's net-zero reduction target backed by a net-zero transition plan, and
2. Historical emissions trends

Financial institutions may wish to balance actual historical emissions performance with forecasted plans based on a weighted target assessment to gauge the ambition (of the commitment) against probable performance (actual emissions reductions achieved in the future). For more information on weighting please see slide 29.

Step 3: Calculate the Aligned or Aligning Expected Emissions Reductions

Firms will then take the difference between the weighted forward looking emissions profile projection and the baseline emissions projection to determine the ERP of the Aligned or Aligning entity.

EER-ERP = Emissions Projections - Baseline Emissions

Benchmark: Baselining considerations

Determining a Basis for BAU

Guidance for a BAU benchmark might be:

- Provided by the Aligned or Aligning entity itself, based on its net-zero transition plan and/or related climate disclosures
- Constructed from sector and region-specific average emissions intensity factors and an entity's revenues and/or production data, depending on the denominator of the intensity factor

Guidance on Including Scope 3 Emissions

Scope 3 emissions for an entity are material if its respective sector average Scope 3 emissions contribute more than 40% of total sector average emissions and if the absolute magnitude of emissions is high.

Per the GFANZ report on *Measuring Portfolio Alignment (PAM)*, material sectors may include oil and gas, automotive, electric utilities, consumer staples, and chemicals.

Policy and Market Considerations

Relevant policies are those that may introduce demand efficiencies, e.g., building codes with more stringent insulation standards that reduce energy use, or may impact energy system emissions with a broader impact across the building sector.

Monitoring and Updating

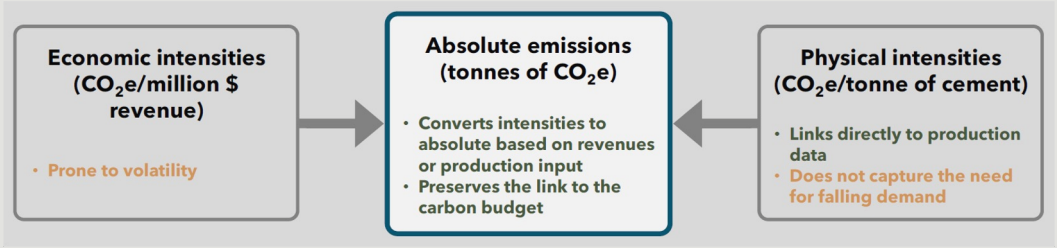
Updates to BAU benchmarks should occur regularly and will help the financial institution understand the drivers of EER.

To address resource constraints, financial institutions could establish expected trigger events that may necessitate an update to benchmarks as part of their monitoring processes, e.g., policy developments

Calculation considerations

When constructing a BAU benchmark, a clear link between Transition Finance activities and the remaining carbon budget can be emphasized by converting intensities to absolute cumulative emissions. Such approaches are common in net-zero target-setting protocols.[1] The figure below highlights the data flow from entity-specific intensities as the starting point and converting to absolute GHG emissions based on revenues or production input.

The use of intensities and absolute emissions for constructing the BAU pathway for the ERP calculation



[1]NZBA and NZAOA both report on sector targets with physical entities and absolute emissions for sub-portfolios.

Project: Weighted Target Assessment

Financial institutions may wish to further adjust emission reduction targets for elements of the real-economy company's net-zero targets and/or net-zero transition plans. In these cases, financial institutions would undertake due diligence on the quality of the entity's net-zero commitment using a weighting system, outlined in the table* below.

Score	Weighting categories	Weight for entity stated target [%]	Weight for historical emissions [%]
5 (Lowest)	• No target commitment	0	100
4	• Long-term net-zero commitment • No target validation	25	75
3	• Net-zero commitment • Interim targets aligned to net-zero pathway • No target validation • Some executive oversight linked to target	50	50
2	• Net-zero commitment • Interim targets aligned to net-zero pathway and covering material Scope 3 footprint • Target validation by third party • A net-zero transition plan has been established and executive oversight is linked to the target • Low-carbon production and capex plans are in line with the target commitment	75	25
1 (Highest)	• Net-zero by 2050 commitment • 2030 interim targets aligned to net-zero pathway and covering material Scope 3 footprint • Target validation by third party • A net-zero transition plan has been established and implemented and executive oversight is linked to the target • Low-carbon production and capex plans are in line with the target commitment • Actual emissions performance and KPIs are aligned with net-zero pathways for at least two continuous reporting cycles	100	0

Financial institutions may wish to balance actual historical emissions performance with forecasted plans based on a weighted target assessment to gauge the ambition (of the commitment) against probable performance (actual emissions reductions achieved in the future).

Such weightings may be tailored to the specific entity being assessed and may depend on several factors being in place, such as:

- Net-Zero Transition Plans
- Low carbon capex aligned with the target commitment
- Interim targets and adequate governance measures

For Aligned and Aligning entities weighting categories may also be drawn from the Transition Finance Attributes for Aligned and Aligning (See the Transition Finance WIB for more details).

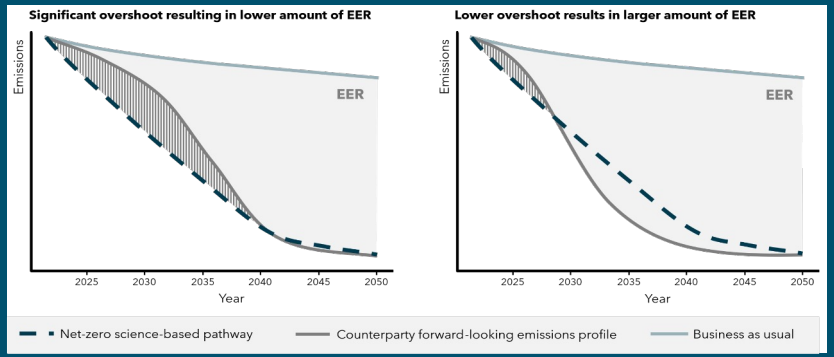
When applying this technical information and assessing the indicators that drive the target weighting, practitioners should be cognizant of the pathway used to set the target (1.5 degrees C, 2 degrees C, etc.).

This approach may also be relevant as NZTPs take time to fully develop.

*The weighting indicators in the above table are not exhaustive but rather aim to highlight the most important considerations. Practitioners are encouraged to utilize the indicators they deem most predictive when assessing the likelihood that a company will achieve its stated targets.

Interpretation: Net-zero perspective and timing impact

Importance of the Net-zero Perspective

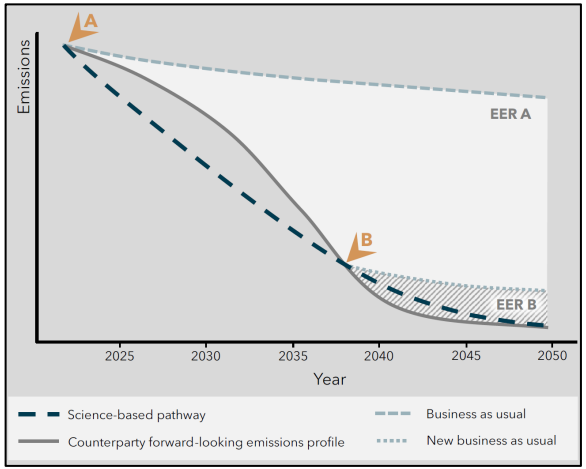


Understanding how close an entity is to the net-zero benchmark provides insight on the materiality of the EER

In this context, benchmark divergence measures can be useful tools as they measure a carbon budget over/undershoot based on cumulative emissions.

Overshooting the benchmark significantly results in lower EER and vice versa.

Timing impact on EER

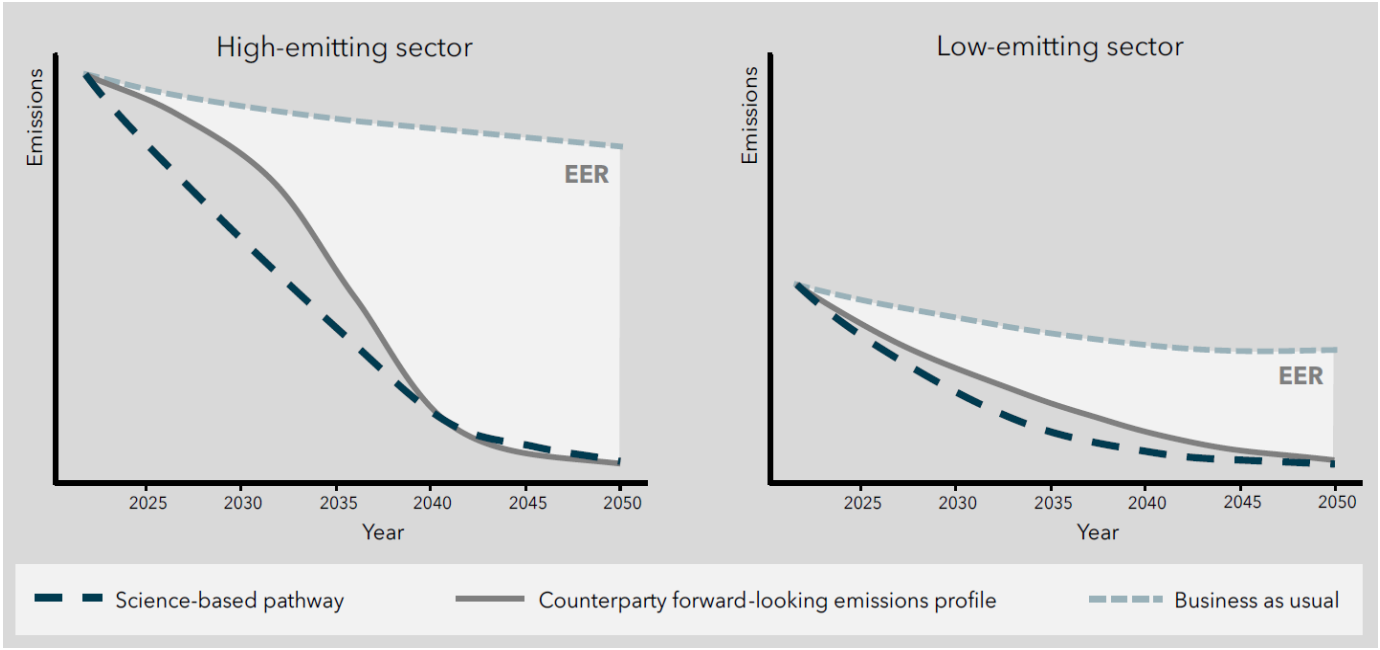


The earlier (point A) the financial institution adds an Aligned/Aligning entity to its portfolio, the higher the potential EER (EER A vs EER B).

For Aligning entities in particular, the timing of financing decisions may impact the amount of EER associated.

Interpretation: Sector Emissions Impact on EER

The GFANZ definition of Transition Finance encompasses both low and high-emitting sectors, recognizing financing and support to help transform high-emitting sectors will play a pivotal role in shaping future low-carbon economies.



Providing **financing to high-intensity sectors**, such as cement and steel, will result in a **higher absolute EER** compared to providing financing to low-emitting sectors, such as video conferencing software.

In the context of Aligned and Aligning, the Mission Possible Partnership[1] provides sector transition strategies for seven critical sectors[2] that provide useful input about average intensities for high-emitting sectors, relevant solutions, and achievable target intensities for particular timeframes

[1]Mission Possible Partnership. Sector Transition Strategies. [2]Aviation, trucking, shipping, steel, aluminum, concrete and chemicals.

Deep Dive: Determining materiality using Expected Cumulative Emissions

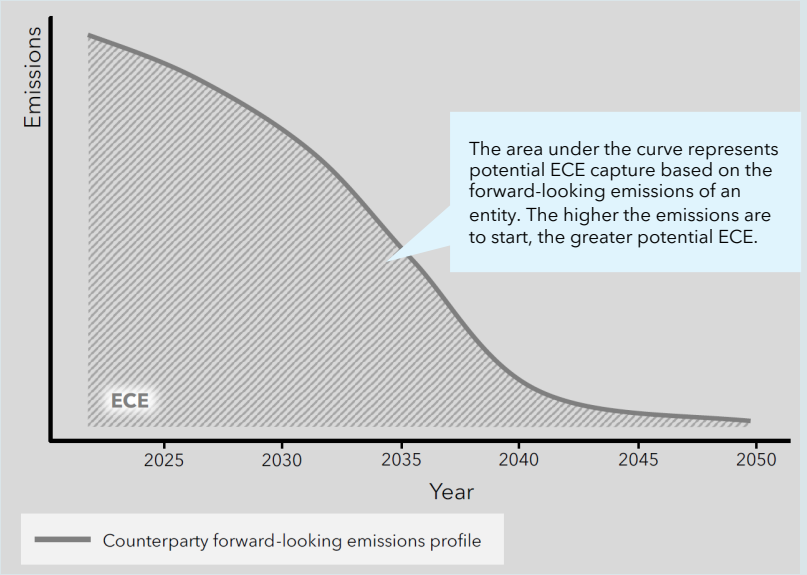
Expected Cumulative Emissions (ECE)

Determining the BAU scenario is often challenging as it involves making predictions of the emissions that would have occurred in the absence of a specific intervention or project. This prediction can be complex and may involve uncertainties tied to factors like economic growth, technological advancements, policy changes, and other external variables. Expected Cumulative Emissions (ECE) could be a valuable and complementary measure for assessing an entity's future absolute emissions in comparison to the remaining carbon budget as outlined by the IPCC.[1]

ECE represents the cumulative total expected remaining emissions of an entity on its journey to net zero.[2] **ECE denotes the remaining emissions of an entity based on the weighting of an entity's reduction commitment, as represented by the forward-looking area under the curve (see the figure below).**

ECE could be used as a key indicator to understand the materiality of emissions reduction impacts compared to an entity's overall remaining emissions by looking at the ratio between EER and ECE.

A project is material if the ratio between EER and ECE is significantly larger than 1



[1]IPCC. AR6 Synthesis Report: Climate Change 2023, March 2023. [2]This could also be an asset's remaining lifetime in the context of Managed Phaseout

Managed Phaseout

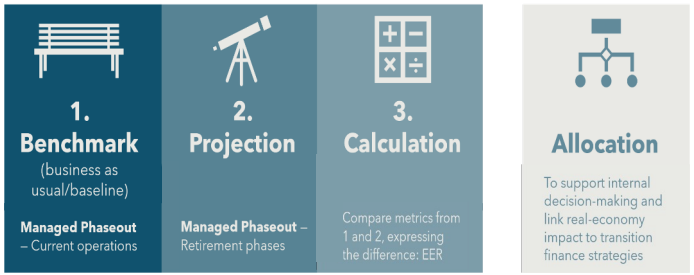
EER Methodology: Emissions Reduction Potential

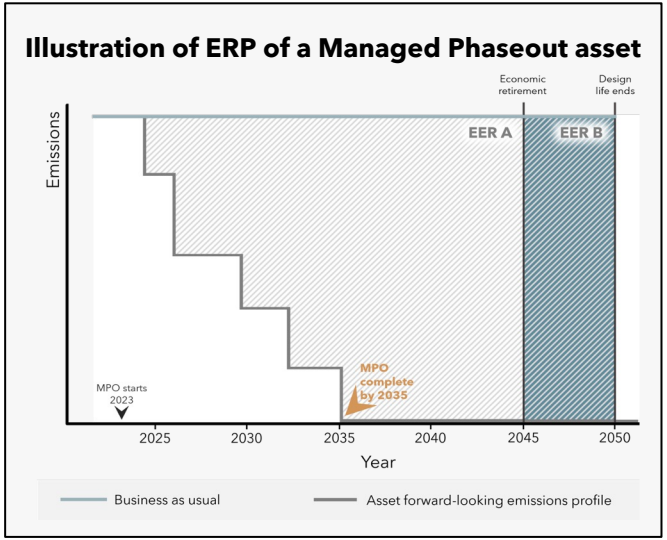
Emissions Reduction Potential (ERP) is a forward-looking methodology applied over a specified time horizon and compared to a BAU baseline pathway

Retiring high-emitting assets early represents an important decarbonization strategy to achieve net-zero emissions.

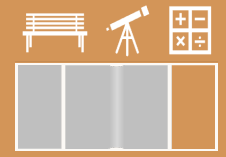
When quantifying the EER for Managed Phaseout strategies, the source of the emissions reductions derives from a high-emitting asset's operations (Scope 1-3).

To determine EER, the ERP quantification method proposed for Aligned and Aligning entities will also be applied to MPO opportunities.





Calculating Emissions Reduction Potential



Benchmark

Step 1: Determine the BAU Benchmark

- An initial BAU benchmark could be grounded on current emissions data of the Managed Phaseout asset, for example current absolute emissions and intensities of a coal-fired power plant (CFPP)
- The emissions history of the high-emitting asset may provide a starting point for the business-as-usual benchmark
- Moreover, business forecasts will be useful to gauge the plant's future energy production

Project

Step 2: Construct the Managed Phaseout projection

The phaseout of a physical asset involves a number of steps between the commitment and the final retirement of the asset

- These steps may encompass both technical and social considerations, including initiatives such as demand-side reductions and the scaling of renewable energy, and therefore may reflect interim emissions reduction targets and detailed phaseout plans
- Where this information is available and judged to be credible, any steps that impact the interim emissions profile of the asset can be integrated with the forward-looking emissions profile
- Practitioners may consider applying a target weighting, similar to the one suggested in the Aligned and Aligning section, to conduct thorough due diligence on the viability and/or progress of the phaseout commitment (see slide 29 for more information on Weighted Target Assessments)

Calculate

Step 3: Calculate Managed Phaseout EER

EER-ERP = Managed Phaseout Projections (Step 2) - Baseline Emissions (Step 1)

Benchmark: BAU construction and projection

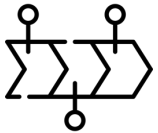
BAU Construction

Simple
- Current plant (asset) intensity levels are held constant for the projection period
- Physical intensities are translated into cumulative absolute emissions based on entity-specific production units over the period chosen

Advanced
- The shape of future expected reduction trajectories (e.g., based on IEA STEPS or NGFS Current Policies) is applied to current plant intensity for the projection period

Potential Technical / Social Considerations
- **National targets on phaseout of high-emitting asset** – for example, baseline constructed with science-based pathways (e.g., IEA STEPS) and corresponding phaseout dates
- Entity/asset-level operation and depreciation conditions
- **System-level factors** – for example, government commitments, regional energy transition over time

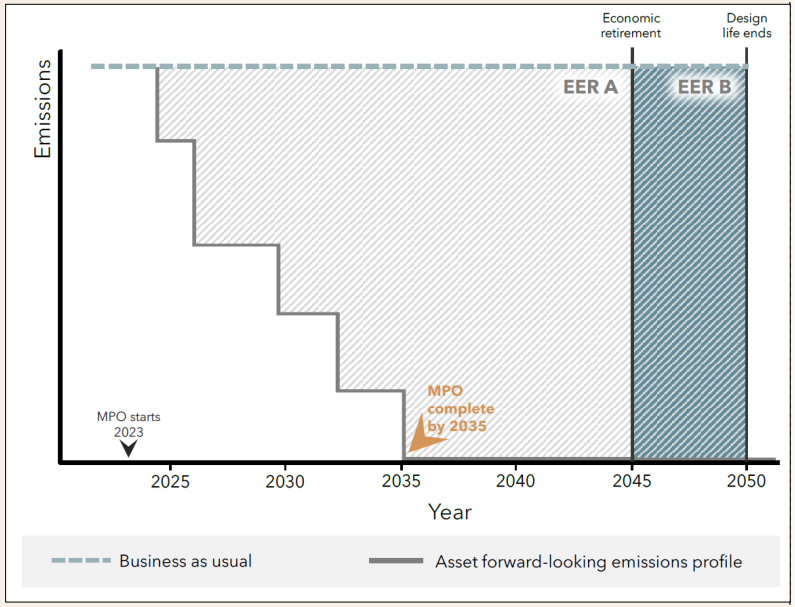
Potential Data Required
- Current generation capacity of the high-emitting asset
- Associated emissions factor of the high-emitting asset based on plant efficiency
- Retirement timeline based on plant design life or economic timeline
- Plant utilization rate
- Plant operating life and technical age



Timeline Considerations: BAU retirement timelines could be based on a number of factors, such as:
- **Design life (ceiling on plant age)** – for example, design life for CFPPs in the APAC region has been approximated to be 40 years182
- **Economic lifetime**, taking into account policy and energy market developments, such as adoption pathways for the switch to renewable energy
- **Economic retirement year** – for example when the cost of operating a plant exceeds expected revenue, and/or when operating costs exceed the plant's value to the power system, especially in terms of its contribution to grid reliability

Deep Dive: Calculating MPO Example

Calculating Managed Phaseout EER *(Example: Early phaseout of a CFFP)*



To the left is a sample ERP calculation for the early phaseout of a Coal Fired Power Plant (CFPP)

The plant has set several interim milestones for capacity reduction starting in 2023 before retiring early in 2035, with adjusted utilization rates over the retirement period

The area bounded by this projection, the BAU emissions benchmark, and the BAU retirement date represents the EER

- Depending on the chosen BAU retirement date, the EER will be larger (EER B) or smaller (EER A).
- In this example, the business-as-usual operation of the asset (the benchmark) is assumed to maintain the asset's current generation capacity and emissions intensity over the plant's lifetime

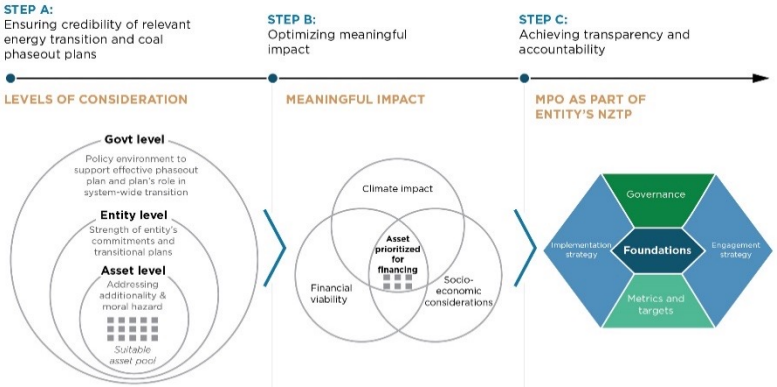
An economic retirement date that also includes policy changes to the energy mix and demand projections for the asset shows an earlier date and smaller EER than the design life end date

- Hence, the choice of the baseline retirement date is a key decision point

Deep Dive: The Importance of a Phaseout Plan

Components of a credible phaseout plan

Phaseout plans are specific to the asset and/or captured as part of the financial institution's or owner/operator's phaseout strategy. In the Financing the Managed Phaseout of Coal-Fired Power Plants in Asia Pacific (December 2023) report a three-step process is emphasized for the phaseout of high-emitting assets at the government, entity, and asset level, which ensures meaningful impact by linking climate impact, financial viability, and socio-economic considerations, as well as anchoring the phaseout with robust real-economy phaseout or net-zero transition plans. The phaseout plan may include estimates of CapEx and OpEx requirements. Planned CapEx and OpEx may also be used as an indicator/KPI that tracks capital allocation as part of progress toward phaseout; consider specific CapEx needs, such as carbon efficiency; decommissioning; general CapEx to support early retirement; etc.



! Further details on Phaseout Plans and the APAC report recommendations are available here in the Transition Finance workshop

Monitoring & Updating Phaseout Plans

Given the numerous logistical and other steps to a Managed Phaseout plan, and in line with the recommendations in the Metrics and Targets theme of the NZTP, additional KPIs can be used to track phaseout progress, such as:

- Meeting interim target milestones, such as step-wise emissions reductions
- Allocating capital expenditure according to the phaseout plan
- Just transition considerations, such as local, socioeconomic (e.g., retraining the workforce), political, and cultural factors

Updating the emissions profile as the Managed Phaseout entity implements mitigation efforts will also provide good monitoring of the progress of the plan.

Successful Managed Phaseout transactions can be incorporated into monitoring at the portfolio level as well.

Financial Institution Use case considerations

Principles

These overarching five principles can support the credible analysis and quantification of decarbonization contribution:

Be transparent and verifiable: Documenting, referencing, and publicly providing methods, data, assumptions, and information that are used increases transparency, supports others in their efforts, and allows for third-party verification or assurance where such methodologies exist.

Link to net-zero transition: Establishing the link and consistency between the portfolio, portfolio holding, and/or client identified as Transition Finance, and the contribution to an orderly net-zero transition across the whole economy contributes to the credibility of the process and relevance to decision-making.

Be consistent over time: Consistent application of the concepts in this Note, including documenting changes to data, methods, and assumption, allows for comparisons over time.

Balance conservativeness, science-based, and practicalities: Where possible and practicable, use of the best available, fact-based information developed through a scientific process helps identify probable variables and pathways for conservative analysis.

Support action in a timely manner: Prioritizing short- to medium-term emission reduction actions recognizes the need for achieving milestones by 2030 in order to preserve the best possible chance of averting environmental tipping points.

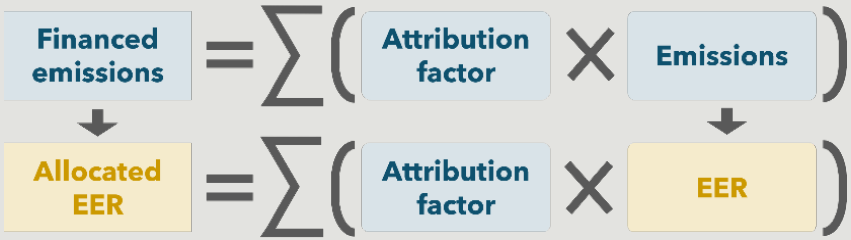
Allocation considerations and other adjustments

Financial institutions may consider allocating a portion of an asset or entity's EER to support internal analyses and assessments that inform their net-zero transition plans.

While there is no existing allocation approach to be applied specifically to EERs, **one option is to follow the Partnership for Carbon Account Financials (PCAF) standard's attribution factor that is based on the ownership principle.**

The financial institution's share of EER using this allocation approach would be proportional to the share of its exposure relative to the total value of the borrower or investee (selected based on type of financing, e.g., debt or equity)[1] (as shown in Equation 2).

The known use of proceeds for these financing instruments could, moreover, be linked to the key attributes outlined in Part I of this Note to ensure that the transaction is credible and contributes to real-economy decarbonization in a meaningful way.



Another relevant consideration is the distinction between primary and secondary market exposures and connecting this consideration to the two main levers financial institutions have: actively financing and supporting the transition activities in the primary market or engaging to incentivize companies to operate in a more climate friendly manner.

Where proceeds are unknown or general purpose, financial institutions should be transparent about the lower degree of association when allocating EER.

[1] PCAF. Financed Emissions: The Global GHG Accounting & Reporting Standard Part A. December 2022.

Aggregation, Backtesting & Verification

Aggregation

Given the distinct approaches for calculating EER, **the measure is not suited for aggregation at the portfolio level.**

Financial institutions may use the EER approach to understand the emissions reduction impact for each of the four key transition financing strategies.

The EER for each of the key transition financing strategies should therefore be measured and assessed separately and not aggregated together across different transition financing strategies (e.g., the EER for Managed Phaseout to be considered separately from the EER for Climate Solutions).

In addition, the EER measure should not be netted with Scope 1, 2, or 3 financed emissions (i.e., portfolio footprint or GHG inventory) for the financing strategy. For example, Scope 1 emissions for Aligning holdings should be measured and assessed separately from the EER for those same holdings.

Backtesting & Verification

On an annualized basis, comparing forward-looking projections of allocated EER against realized emissions reductions may provide more transparency regarding the actual real-economy impact achieved over time.

The greater the alignment between realized reductions and projected estimates, the higher the confidence in the accuracy of the projected numbers can accrue over time.

The iterative process of comparing projections with actual results may improve the quality of EER predictions over time.

Verification of assumptions, data sources, and methodologies by third-party sources, where available, would support and enhance credibility

Testing and adoption

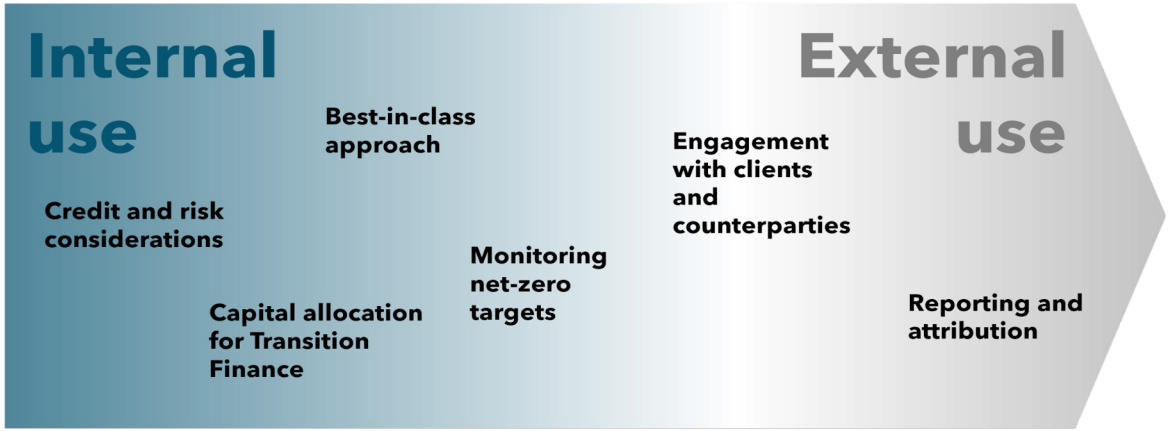
EER may be used to support different stages of a financial institution's net-zero transition.

In the short-term, financial institutions may consider employing EER as a tool for internal decision-making, for example, to allocate financing and support to different opportunities. Alongside conventional financial metrics and other climate-related indicators, EER could serve as an input to identifying opportunities with greater expected emissions reductions in the real economy.[1]

Given data and methodological challenges and complexities, FIs need to establish the systems and infrastructure to support the ongoing calculation and/or use of EER. FIs also need to work with real economy clients / portfolio companies to get EER and/or the data required for its calculation.

As EER becomes more commonly used, data will become more available and the underlying methodology will become more refined. Potentially, EER could one day also be used for external purposes (i.e. to support engagement and disclosure).

Potential illustrative EER use cases



Please see slide 44 for the areas for further work that will support EER's movement across the potential use cases listed here.

[1]The EER might also have potential for inclusion within other existing frameworks to prioritize investment opportunities in service of net-zero targets. For example, the EER could feature into assessments of best-in-class opportunities to prioritize financing or be used to guide engagement efforts over time.

End thoughts

Areas for Further Work

Key areas of further work

Relationship to other frameworks and methodologies	Encourage stakeholders to support further development of the concepts and approaches identified in this Note
Data availability, consistency, and quality	Encourage further research and analysis by sector and industry experts to develop more consistent approaches for the real economy and financial sector
Methodology issues and concepts	Expect ongoing refinement and development of concepts presented in this Note

The GFANZ Secretariat recognizes that many topics and concepts covered in this workshop are still nascent and/or require further development

- Common themes and gaps include:
  - Concerns about the availability of data, including with respect to real-economy companies, regional and sector benchmark scenarios, life-cycle analysis
  - Concerns about the quality, consistency, and comparability of data needed to conduct analyses
  - Desire to simplify data input needs and the desire for additional guidance on metrics, including how to calculate key metrics
- Ensure baseline scenarios are credible; do not overestimate the benefits offered by any specific entity or asset; and are potentially revisited to ensure the estimated impacts are realized
- Refine the approach to allocate EER to the financial institution to support internal assessment and other use case applications.
- More work on the EER concept and outputs is needed to encourage market acceptance and adoption
  - Third-party verification of the approaches, for example with regard to choosing a baseline or weighting the targets for Aligned and Aligning entities, would support wider acceptance and adoption
- Further work on how to derive and allocate the potential decarbonization contribution of Enablers is needed
- Considerations for aggregation of EER
- Temporal and risk-based adjustments, including the “time value of carbon”

Questions for discussion and reflection

- Given your current portfolio exposures, which teams would need to be involved and what data points would you need to begin calculating EER?

- If you already incorporate forward-looking metrics, are there any areas of ongoing challenges or potential learning points you could discuss with the broader institution?

- Discuss where EER may be calculated or sourced based on existing data (internal data or coming directly from real-economy clients and portfolio companies)

In this workshop, you have learned ...

What are potential Decarbonization Contribution Methodologies?

&

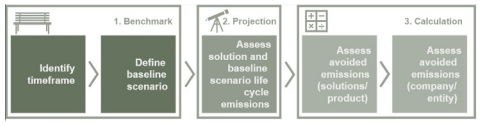
How can DCMs and forward-looking measures such as EER contribute to real-world emissions reductions and the scaling of Transition Finance?

- GFANZ introduced the concept of Expected Emission Reductions (EER) as a complementary measure to existing KPIs that may offer a potential forward-looking approach to assess and quantify the decarbonization contribution potential of exposures
- The GFANZ Secretariat Technical Review Note outlines potential decarbonization contribution methodologies for deriving EER for each of the four key transition finance strategies: Avoided Emissions (AE) and Emissions Reduction Potential (ERP)
- The greatest emissions reduction may be achieved by directing financing and related services to – rather than divesting from – high-emitting sectors, entities, and assets across the four key transition financing strategies
- EER can provide a more holistic perspective on how financing can support the transition and ultimately catalyze the financing of emissions reductions

How do you calculate EER for:

Climate Solutions (AE)

- The Avoided Emissions (AE) method is introduced as one option to estimate potential EER associated with Climate Solutions
- A five-step approach, based on the WBCSD guidance for assessing AE, is recommended for benchmarking, projecting, and ultimately calculating EER.
- Since the focus of Climate Solutions is on end-use emissions reduction, Life Cycle Analysis (LCA) is a critical component used to derive EER.



Aligned & Aligning (ERP)

- Emissions Reduction Potential (ERP) is a forward-looking methodology applied over a specified time horizon and compared to a BAU baseline pathway to determine EER for Aligned, Aligning, and Managed Phaseout entities
- ERP seeks to measure the decarbonization efforts inside of an entity's emissions boundaries and can include both reductions of direct emissions as well as indirect emissions in the entity's value chain. ERP takes into consideration the reduction commitments and targets of entities, for example, based on existing net-zero transition plans or phaseout plans.
- Financial institutions may wish to balance actual historical emissions performance with forecasted plans based on a weighted target assessment (with particular importance placed on assessing the quality and feasibility of the entity's NZTP or phaseout plan

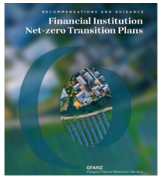
- Overshooting the benchmark significantly results in lower EER and vice versa
- The earlier the financial institution adds an Aligned or Aligning entity to its portfolio the higher the BAU
- Providing financing to high-carbon-intensity sectors will result in a higher absolute EER
- Expected Cumulative Emissions (ECE) could be a valuable and complementary measure for assessing an entity's future absolute emissions in comparison to the remaining carbon budget

Managed Phaseout (ERP)

- The emissions history of the high-emitting asset may provide a starting point for the business-as-usual benchmark
- Potential Technical / Social Considerations include National targets on phaseout of high-emitting asset and system level factors
- BAU retirement timelines could be based on a number of factors, such as design life (ceiling on plant age), Economic lifetime, and Economic retirement year.

GFANZ publications

Three publications detail the GFANZ NZTP framework and transition finance for financial institutions as well as its application in the real economy:



Recommendations and Guidance on Financial Institution Net-zero Transition Plans

This publication describes how financial institutions across the financial system can operationalize their net-zero commitments and support the real-economy transition.

Download the summary
Download the report
Download the supplemental material

Expectations for Real-economy Transition Plans

This report distils existing guidance to bring clarity and help companies in the real economy develop credible transition plans. Additionally, the report brings much-needed consistency on metrics and data points required by financial institutions to evaluate the progress and credibility of companies' net-zero transition plans.

Download the report

Scaling Transition Finance and Real-economy Decarbonization

This GFANZ Secretariat Technical Review Note further develops the Transition Finance strategies by providing a supplement to the 2022 GFANZ NZTP guidance and discusses potential decarbonization contribution methodologies as a complement to today's metrics.

Download the report

Four additional reports give a more detailed insight into focus areas:

Guidance on Use of Sectoral Pathways for Financial Institutions

This publication offers guidance and a framework to help financial institutions evaluate suitability of sectoral pathways in their transition planning process and implementation efforts.

Download the report

Measuring Portfolio Alignment: Enhancement, Convergence, and Adoption

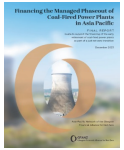
This publication provides a practitioner perspective for measuring the alignment of investment, lending, and underwriting activities with the goals of the Paris Agreement and critical 2050 global net-zero objectives.

Download the report

Managed Phaseout of High-emitting Assets

This publication provides a preliminary and high-level approach to support the identification of and guidance on assets where managed phaseout could be appropriate.

Download the report



Financing the Managed Phaseout of Coal-Fired Power Plants in Asia Pacific (December 2023)

This report, which addresses financing the managed phaseout of coal-fired power plants in the Asia-Pacific region, aims to provide practical, voluntary guidance for net zero-committed financial institutions considering the financing of coal phaseout transactions.

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Appendix: Constructing a BAU emissions budget

This table provides a summary of the suggested methods for defining a BAU benchmark grouped as simple, intermediate, and advanced

Once the starting point of the BAU benchmark has been established, other inputs are needed to assess how to project the current emissions profile over a chosen time horizon, as discussed below.

Projecting business as usual over time

Given the pressing need for nearer-term mitigation actions, the ERP calculation can be performed on a short-to-medium-term time horizon.

This shorter time horizon would focus on the urgency of delivering emissions reductions in this decade and may also be deemed more credible as an entity's reduction activities could be more certain in the short term.

Depending on availability of emission reduction solutions, different time horizons could also be considered:

- A five-to-ten-year time horizon may be appropriate for the broader economy
- For hard-to-abate sectors where low/no-emitting solutions are still being scaled, a longer horizon (e.g., 15 years) may be required

Potential approaches for Aligned/Aligning BAU benchmark

Approach	Time Horizon	BAU Construction	Considerations	Data Required
1. Simple	10-15 years, with 2030 and 2035 as anchor dates	• Current revenue or physical intensities of portfolio companies are held constant. • Company-specific revenues or physical intensities are converted into cumulative absolute emissions based on revenues or production units over the period chosen.	• Decarbonization policies in relevant national markets • Assumptions about market share and sales growth • Historical GHG emissions trends • Efficiency measures that can be expected from sector/entity • Periodic updates: 3-5 years	• Entity-specific GHG Emissions/Revenue • Entity-specific GHG Emissions per unit of physical activity (for example CO_2e/tonnes of steel) • Company revenues or production output
2. Intermediate		• BAU has a specific forward-looking intensity trajectory based on region and sector-specific current policy scenarios (e.g., IEA STEPS, NGFS Current Policies reduction rates for industrial sectors, or MPP Sector Pathways).[165] • The BAU trajectory starts from the entity's current economic or physical intensity and is translated into cumulative absolute emissions based on projected entity-specific production units or economic values (e.g., revenues) over the period chosen.		All of the above + • Forward-looking current policies emissions intensity data (economic or physical), derived from, e.g., IEA STEPS, NGFS Current Policies for Industrials, or MPP Sector Pathways[166]
3. Advanced		• Creating a BAU emissions budget reflecting the entity's sectoral and regional average emissions intensity.[167] • This approach creates a forward-looking, company-specific emissions budget reflecting the average carbon intensity of the relevant sectoral/regional composition of the entity. As a result, a company with a lower-than-average carbon intensity does better than BAU compared to its peers, all other things being equal.		• All of the above