



FINANCING A SUSTAINABLE
EUROPEAN ECONOMY

A satellite map of Europe and the surrounding seas, with the twelve gold stars of the European Union flag arranged in a circle over the landmass. The text 'Report on BENCHMARKS' is overlaid in white.

Report on **BENCHMARKS**

HANDBOOK OF
CLIMATE TRANSITION BENCHMARKS AND PARIS-ALIGNED
BENCHMARKS

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¹ See Appendix C for Lead Authors, Platform Members and Observers.

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Introduction to Version 2.0 of the Handbook of Climate Transition Benchmarks and Paris-Aligned Benchmarks

This first 2019 version of this Handbook was a response to frequently asked questions (FAQs), which the TEG benchmarks subgroup members encountered when presenting the EU Climate Transition Benchmark (EU CTB), the EU Paris Aligned Benchmark (EU PAB)², and the benchmarks' disclosure guidance on environmental, social or governance (ESG) issues.³ The Handbook commences by (i) clarifying the 7% Reduction Trajectory and (ii) matters of terminology. It continues by explaining (iii) the anti-greenwashing measures, (iv) data sources and estimation techniques as well as (v) related classification. Finally, (vi) ESG disclosure matters are discussed and (vii) further aspects are highlighted. Detailed appendices provide computation and sector mapping recommendations.

The TEG benchmarks subgroup aimed to write the Handbook in the most accessible of manners. Readers looking for more technical information are very welcome to email relevant subgroup members.

The Data Science Hub of the second Platform in Sustainable Finance has added further FAQs to this second version while preserving the Handbook structure.⁴ For each FAQ, the handbook indicates if it was responded to by the TEG subgroup in 2019 or the PSF Data Science Hub in 2025 as well as which publications of the TEG, the first or the second Platform on Sustainable Finance may be relevant. While the Handbook focuses on EU Paris-Aligned Benchmarks and EU Climate Transition Benchmarks, the recommendations also applies to derived concepts.⁵

² Both benchmarks will be referred to as Climate Transition Benchmarks or Climate Transition Investing in the following.

³ The final report underlying these presentations was published in September 2019 (Hoepner et al., 2019)

⁴ All but three (partially) outdated FAQs of the TEG were preserved in their existing form.

⁵ See, for instance: https://finance.ec.europa.eu/publications/platform-sustainable-finance-report-investing-transition-benchmarks_en

1. The 7% Reduction Trajectory

1.1 Is the technical recommendations of at least 7% on average per annum greenhouse gas (GHG) intensity reduction at the portfolio or the company level? [TEG subgroup, 2019]

The technical recommendation is at the portfolio level. It is derived from the IPCC's 1.5°C trajectory with no or limited overshoot (Table 2.4 Years 2020-30 CO₂e, Rogelj et al., 2018). To follow this trajectory, the global economy should decrease its emissions at 7% per year. If an index portfolio claims to represent a portion of the economy in line with the Paris agreement, it needs to follow this decarbonisation rate.

There is no specific requirement as to the GHG intensity reductions of individual companies.

1.2 Is the technical recommendation of at least 7% on average per annum greenhouse gas (GHG) intensity reduction calculated arithmetically or geometrically? [TEG subgroup, 2019]

The technical recommendation is calculated geometrically. An example of the calculation is provided in Appendix A to this Handbook.

1.3 How can benchmark administrators achieve the at least 7% on average per annum GHG intensity reduction? [TEG subgroup, 2019]

Benchmark administrators have at least two mechanisms to achieve the at least 7% on average per annum reduction in GHG intensity.

First, they can focus on their benchmark portfolio's constituent weights. Constituent weights describe the degree to which each individual company contributes to the computation of the overall benchmark. They always add up to 100%. A company with a higher constituent weight attracts more equity investment or bond financing than a company with a lower constituent weight. Hence, companies are incentivised or rewarded through the assignment of higher constituent weights compared to the weights they would be entitled to purely based on their market capitalisation. Thus, benchmark administrators can achieve reductions in GHG intensity by reducing the constituent weights of high intensity sectors or companies while simultaneously increasing the constituent weights of low intensity sectors or companies, respectively. This process of decreasing high intensity constituent weights while increasing low intensity constituent weights has to be performed simultaneously to ensure that the overall constituents' weights of the benchmark portfolio add up to 100% at any point in time.

Second, benchmark administrators can aim to identify firms which are likely to reduce their GHG intensity by at least 7% in the upcoming year. This mechanism is likely to be processed with an extrapolation or a more advanced estimation. The better the benchmark administrator is in identifying firms which reduce their GHG intensity by at least 7% per annum, the less the benchmark administrator has to rely on constituent weights in achieving the reduction. In essence, benchmark administrators using this second mechanism implicitly engage high intensity companies with the message that their constituent weights will be reduced proportionally unless they achieve the relevant GHG intensity reductions at the company level.

1.4 Is alignment with the Paris Agreement assessed at index, sector or company level? [TEG subgroup, 2019]

Alignment with the Paris Agreement Goals can only happen at the planetary level and must include as little assumptions as possible. Following Ban Ki-moon's famous words 'we have no plan B since we have no planet B', alignment with the +1.5°C target can only be sufficiently assessed, if one knows instead of assumes the behaviour of all relevant polluting sectors or companies.

Thus, individual companies or sectors may be compatible or incompatible with Paris alignment but the claim that they would be Paris-aligned is hard to scientifically justify, as their Paris alignment will depend on many factors outside their control. A full investor portfolio however represents a self-sufficient model economy potentially including all relevant polluting sectors or companies. Such a portfolio can allocate GHG intensity budgets to sectors and firms and can reduce its GHG intensity on average by at least 7% per annum geometrically calculated.

Our view is aligned with Joeri Rogelj, lead author of the IPCC's 1.5°C report. Dr. Rogelj confirmed to the TEG benchmarks subgroup that the IPCC's sector pathways are very useful guidance for relevant stakeholders and certainly compatible for 1.5°C alignment but that the degree of compatibility would depend on choices made in other sectors. In other words, an index portfolio that is on an at least 7% on average per annum trajectory may be considered Paris-aligned in the next decade if launched in 2020, while an individual sector which follows its pathway may be compatible for Paris alignment but the success of this alignment depends too much on choices made in other sectors to claim success instead of just compatibility with success.

1.5 Do the Climate Transition Benchmarks encourage companies to become 'net zero'?

[TEG subgroup, 2019]

Yes, absolutely, especially in High Climate Impact sectors! Companies which achieve net zero status (i.e. all their remaining annual GHG emissions are captured via natural or technological means within their own operations) are naturally a preferred choice of benchmark administrators to receive the constituent weights allocations removed from high GHG intensity firms. The only better choice for benchmark providers than net zero companies from a GHG intensity reduction perspective would be net negative companies (i.e. natural or technological means within their own operations capture more than their remaining annual GHG emissions)

Net zero or negative emissions companies means, for the current purpose of climate benchmarks, that companies are able to prove that their direct operations are able to capture via natural or technological means controlled by them any Scope 1, 2 or 3 GHG emissions caused by these companies. While a growing number of companies are claiming carbon neutrality or a net zero status already via the purchase of rights on carbon markets or certified emissions reductions (CER), the TEG benchmarks subgroup is currently aware of valid technical concerns as to the verification of these emission reductions and hence only recommends their eligibility when they represent part of a company's operations. The subgroup furthermore considers emission reduction certificates only a viable option for companies at later stages of their 2020 to 2050 trajectory, once they have reduced the majority of their GHG emissions themselves and exhausted technically feasible options for further reductions in sectors with inevitable GHG emissions (e.g. cement).⁶

1.6 Why do the trajectories start at -30% and -50% GHG intensity compared to the investable universe? [TEG subgroup, 2019]

The Level 1 legislation set high ambitions for the EU CTB and EU PAB. The two climate benchmarks aim at reallocating capital towards a low-carbon and climate resilient economy. They should allow a significant level of comparability of climate benchmarks while leaving benchmarks' administrators with an important level of flexibility in designing their methodology; they should provide investors with an appropriate tool that is aligned with their

⁶ Above said, the subgroup acknowledges that there are potential trajectories on different types of emissions: (i) Absolute emissions: these absolute emissions should follow the -7% trajectory (already in the recommendation); (ii) Avoided emissions: the positive contribution of companies outside their value chain (not captured by the reduction of their absolute emissions) could be related to their products or services (manufacturing insulation materials) or an additive positive contribution (emission reduction certificates); (iii) Sequestered emissions: Emissions removals by the companies activities (e.g. forestry) or an additive positive contribution (e.g. emission sequestration certificates).

investment strategy; they should increase transparency on investors' alignment with the needs of ambitious climate scenarios; and they should prevent greenwashing.

These ambitions, which are even higher for the EU PAB than for the EU CTB, explain the departure points for the trajectory in three steps. First, any departure point with a higher GHG intensity than the investable universe would have been greenwashing. Second, to provide investors with an ambitious, yet appropriate tool, the departure point for the EU CTB had to be around the level of GHG intensity reduction achieved by low carbon indices today. -30% with a progressive inclusion of scope 3 is a suitable point of departure from this perspective. Third, to ensure that the EU PAB would be more ambitious than the EU CTB it had to depart from a more rigorously decarbonized point for which -50% appears a reasonable choice that should be attractive to benchmarking both passive and active investment strategies.

1.7 What to do in case the Enterprise Value computation for a company returns a negative result? [TEG subgroup, 2019]

In the report of September 30th 2019, we use the classic definition of “Enterprise Value ... [being] defined as the sum of the market capitalization of common stock at fiscal year end, the market capitalization of preferred equity at fiscal year-end, and the book values of total debt and minorities' interests minus the cash and cash equivalents held by the enterprise” (p. 41). This definition relies *inter alia* on companies accounting the concept of ‘cash equivalents’ with high levels of integrity. In practice, rare exceptions can occur in which firms report ‘cash equivalents’ but the financial market does not consider these truly as equivalent to cash and hence discounts their value, potentially leading to negative enterprise values.

If a benchmark administrator is concerned about this rare phenomenon, then the subgroup recommends excluding cash and especially cash equivalents from the computation of Enterprise Value. Such an exclusion would result in the concept of Enterprise Value Including Cash (EVIC).

‘Enterprise Value Including Cash (EVIC)’ is defined as the sum of the market capitalization of ordinary shares at fiscal year end, the market capitalization of preferred shares at fiscal year-end, and the book values of total debt and minorities' interests. No deductions of cash or cash equivalents are made to avoid the possibility of negative enterprise values.

1.8 How does the Enterprise Value inflation adjustment work? [TEG subgroup, 2019]

Enterprise Values can vary year on year. An increasing average enterprise value of the index constituents can lead to an overall GHG intensity reduction where no actual GHG emissions reductions took place. Hence, it is crucial to adjust for inflation in enterprise values as follows:

In case the average enterprise value of the index constituents has risen during the last calendar year, any constituents' enterprise value should be adjusted for this enterprise value inflation by dividing the enterprise value of each constituent by an enterprise value inflation adjustment factor.

1.9 Do EU CTB and EU PAB work the same way in equities and fixed income? [TEG subgroup, 2019]

EU CTB and EU PAB work very similar across asset classes but there are two important differences between applications in equities and applications in fixed income, largely due to the fact that the equity market is predominantly a secondary market while the fixed income market is more primary and often directly finances corporations, (infrastructure) projects, activities or even, on occasions, budget deficits.

First, fixed income investors buying at issuance directly provide cash flow to corporations while exchanges of cash in secondary equity markets do not directly affect corporate cash flow. Hence, while both climate benchmarks are prevented in equities to move out of high climate impact sectors to ensure that climate transitioning investors maintain their influence via engagement and voting, such a prevention would have been counterproductive in fixed income, as it could force climate transitioning investors to refinance activities that are detrimental to climate change mitigation and adaptation.

Second, some companies issue bonds but they do not list on equities markets. For these companies, the enterprise value should be computed using the book value of equity, since the market value of equity does not exist. Some benchmark administrators may be concerned that this affects the comparability of the GHG intensity of bonds issued by public and private firms. Thus, the subgroup suggests fixed income benchmarks to compute the 7% reduction trajectory based on GHG intensity and/or absolute GHG emissions.

1.10. Should PABs and especially CTBs launched with less than 25 years left to the 2050 Net Zero target year increase their decarbonisation? [Platform, 2025]

It is evident that as we get closer to the year 2050 the GHG intensity reductions have to get stricter to reach the net zero. For instance, if a Climate Transition benchmark with a base year 2030 follows the 30% baseline year and 7% annual self-decarbonisation trajectory, it would result in 16.4% remaining GHG emissions in the year 2050.

In order to stay on the 1.5-degree trajectory while retaining the familiar 7% headline reductions, the [Platform on Sustainable Finance's \(PSF\) Usability Report of October 2022](#)⁷ recommended introducing a constraint on the baseline year. Specifically, the Platform recommended that the climate benchmark base year shall be restricted to no later than 2023.

With such constraint, the minimum GHG intensity reduction as well as the further annual emissions reductions would be calculated with 2023 or earlier as base year, despite benchmarks being launched at a later date. If, for example, a benchmark is launched in 2027, it would have to reduce the GHG intensity to satisfy the reductions that would have accrued if the benchmark was launched in base year, i.e., 2023. That would include the minimum GHG intensity reduction of 30% or 50% and the annual 7% reductions for four years from 2023 to 2027.

1.11 Which trajectory should be applied by multi asset portfolios or mandates? [Platform, 2025]

If a portfolio has, on average, more than 50% of its assets in listed equities over the last 3 years, the listed equities PAB and CTB rules are recommended. Otherwise, the fixed-income PAB or CTB rules are suitable, which include the listed equity rules as one of two options. The rules ensure that the appropriate climate benchmarks are applied based on the asset composition of the portfolio, whether it is equity-focused or includes fixed-income assets.

⁷ https://finance.ec.europa.eu/system/files/2022-10/221011-sustainable-finance-platform-finance-report-usability_en_1.pdf

1.12 Shall the EVIC Inflation Adjustment factor be calculated at portfolio or constituent level? [Platform, 2025]

Based on the previous [Platform on Sustainable Finance's \(Platform\) Report on Usability from October 2022](#),⁸ the Platform “recommends basing the inflation adjustment factor directly on the constituent itself. As the name suggests, the inflation adjustment factor is the individual benchmark constituent EVIC at the end of a calendar year, divided by its EVIC at the end of a base year” (p. 157). The corresponding mathematical formulae and a discussion of its implications can be found in the referenced report.

This amendment ensures clarity and proper flow while maintaining the original meaning.⁹

⁸ https://finance.ec.europa.eu/system/files/2022-10/221011-sustainable-finance-platform-finance-report-usability_en_1.pdf

⁹ Please note that the mechanism EVIC inflation adjustment should also be applied to the initial baseline decarbonisation of 30% (CTB) or 50% (PAB) to ensure that not only emission intensities but also absolute emissions are meeting the baseline decarbonization requirements vis a vis the market universe.

2. Terminology

2.1 Carbon intensity, CO₂e intensity, GHG intensity: which term is the preferred one? [TEG subgroup, 2019]

We prefer the term GHG intensity. Carbon intensity is misleading as it strictly speaking does not include greenhouse gases beyond CO₂. CO₂e intensity is a rather cumbersome and unusual term.

2.2 Equity Exposure constraint, Sector Allocation Constraint, Weighting Constraint: which term is the preferred one? [TEG subgroup, 2019]

We prefer the term Equity Exposure Constraint, as the constraint applies to equities only and ensures that equity investors retain exposure and thereby influence in high climate impact sectors.

2.3 Can the EU Climate Transition Benchmark and the EU Paris-Aligned Benchmark be applied outside the European Union? [TEG subgroup, 2019]

Yes, benchmark administrators wishing to employ one of the climate transition benchmarks on global universes or universes of African, American, Asian or Australian firms can easily apply the same concept and apply for recognition.

2.4. Is the EU Paris-Aligned Benchmark's definition of 'controversial weapons' intended to differ from the definition in the Sustainable Finance Disclosure Regulation (SFDR)? [Platform, 2025]

The notion of 'controversial weapons' can be understood in diverging ways. In its initial report on Paris-aligned and Climate Transition Benchmarks in 2019, and when referring to the exclusion of controversial weapons (as part of the recommendations submitted to the European Commission), the Platform (TEG at the time) did not intend for this recommendation to be perceived as excluding more weapons than those listed in the relevant Principal Adverse Impact Indicator in the subsequent Sustainable Finance Disclosures Regulation (Commission Delegated Regulation (EU) 2022/1288 of 6 April 2022) – that is to say anti-personnel mines, cluster munitions, chemical weapons, and biological weapons. To clarify the notion of controversial weapons, the Platform therefore recommends that reference is made to that Principal Adverse Impact Indicator. The Platform recommends the Commission to clarify its understanding of "controversial weapons" in Delegated Regulations 2020/1818 and 2020/1816.

2.5. Is the EU Paris-Aligned Benchmark's definition of gaseous fuels intended to include green hydrogen? [Platform , 2025]

When submitting its initial report on Paris-aligned and Climate Transition Benchmarks in 2019, the Platform (TEG at the time), when referring to the exclusion of gaseous fuels as part of the recommendations submitted to the European Commission, did not intend this clause to exclude green hydrogen, as green hydrogen is by definition produced from renewable energy sources. The Platform still recommends that green hydrogen is not excluded from Paris-aligned and Climate Transition Benchmarks. The Platform recommends the Commission to clarify its position as regards the possible exclusion of green hydrogen from the definition of gaseous fuels in Delegated Regulation (EU) 2020/1818.

3. Anti-Greenwashing Measures

3.1 How can the 'Equity Exposure Constraint' prevent greenwashing of equity indices?

[TEG subgroup, 2019]

An equity index which had a very low GHG intensity does not include any high climate impact sectors is arguably not contributing to the energy transition but instead hiding from the problem. Since equity investors rarely directly contribute cash to the companies, they can contribute to the transition through (i) engagement and voting and (ii) providing a decarbonization example for other investors.

To ensure that equity indices embrace both opportunities, the Equity Exposure Constraint prevents the climate transition benchmarks from having a lower exposure to the aggregation of all high climate impact sectors than the investable universe while decarbonizing at least 7% on average per annum geometrically calculated. This implies that the climate transition benchmarks are likely to reallocate capital (i) between high impact sectors rewarding those sectors that decarbonize more successfully as well as (ii) within each individual high impact sector rewarding those companies that decarbonize more successfully.

3.2 Does the Equity Exposure Constraint force indices to hold 'brown'¹⁰ constituents? [TEG subgroup, 2019]

No, it does not. The Equity Exposure Constraint requires indices to hold a certain percentage of its constituent weights within any of nine NACE section codes: A, B, C, D, E, F, G, H, L. These NACE section codes include thousands of companies that are usually not referred to as 'brown' by existing sustainable investment approaches.

3.3 How do the EU PAB activities exclusions work? [TEG subgroup, 2019]

The activity exclusion work is a two-step process. First, undesirable activities are identified for avoidance. Second, enforcement thresholds are defined in terms of percentage of revenues. If companies engage in these activities beyond the enforcement threshold, benchmark administrators will have to exclude these companies from the EU PAB.

¹⁰ The subgroup understand brown constituents as those with a high GHG intensity (i.e. GHG/EVIC).

3.4 What was the rationale for the revenue thresholds of the EU PAB activity exclusions?

[TEG subgroup, 2019]

The share of fossil fuels in global primary energy supply is expected to heavily decrease in IPCC's 1.5°C scenario with no or limited overshoot. Amongst the fossil fuels, different energy sources can be classified depending on their contribution to global warming and their ability to be used in a transitioning phase. From 2020 to 2050, coal is expected to drop by at least 57% and up to 99%. Oil is expected to drop by at least 9% and up to 93% while gas has a wider expected range of evolution given its expected use during the transition – primarily as a replacement for coal – although the median expected range is a drop by 40%.

While the level of uncertainty is high regarding the future of fossil fuels in these scenarios, a clear priority emerges between coal, oil and gas. For EU PABs, the subgroup has therefore decided to set stringent exclusion criteria based on revenue thresholds in line with expected drops in use (i.e. 1% for coal, 10% for oil and 50% for natural gas)

3.5 Why is the difference between Deviation and Risk measures crucial in the context of EU PABs and EU CTBs? [Platform, 2025]

The climate transition period presents significant challenges, as we experienced the physical impacts of climate change while mitigation efforts are underway but not yet fully realised. Both of these factors pose considerable risks to financial assets, both in absolute terms and relative to market benchmarks. Deviation measures such as Standard Deviation or Tracking Error do not effectively capture and measure these climate transition risks. They tend to confuse deviation in both directions with risk itself and hence result in a less accurate measurement of risk. This approach also shifts focus from actual risk management to simply managing deviations, which can limit opportunities for climate transition investments, as these often involve larger deviations from the market. Over the long term, using deviation measures can prevent meaningful climate transition strategies, as they may diverge too much from global benchmarks that include political decisions from entities outside the EU Green Deal. Adopting actual risk measures such as Semi-Standard Deviation or Trailing Error¹¹ ensure that risk is measured by investors and policy makers without the inclusion of upside deviations and hence more suitable for navigating the climate transition.¹²

¹¹ See here for a technical definition of Trailing Error: https://finance.ec.europa.eu/publications/platform-sustainable-finance-report-investing-transition-benchmarks_en

¹² For a more extensive discussion of this point, please see De Smet, Hoepner & Schneider (2025) 'Risk Measures for Investing during the Climate Transition Age'

4. Data Sources and Estimation Techniques

4.1 How to estimate missing or underreported GHG emissions data? [TEG subgroup, 2019]

In cases where GHG emissions data across any of the three scopes is missing or underreported, it has to inevitably be estimated by benchmark administrators or sourced from third party data providers which have conducted the relevant estimations. If these estimations exceed the ‘true’ GHG emissions of companies, then they provide an incentive for companies to commence or enhance their reporting to signal that the GHG intensity is actually better than estimated by benchmark administrators. However, if these estimations are on par or especially below the ‘true’ GHG emissions of companies, then they provide a disincentive for companies to commence or enhance their reporting, as this would make them look worse.

Hence, the subgroup recommends conducting corporate GHG data estimations based on the United Nation’s (1992) precautionary principle: *If in doubt, err on the side of the planet not the side of the company*. Applying the precautionary principle ensures that corporate GHG data is not underestimated and hence companies have incentives to commence or enhance reporting their GHG emissions.

4.2 How to estimate firm specific scope 3 GHG emissions data? [TEG subgroup, 2019]

Corporate Scope 3 emissions are significantly harder to estimate than Scope 1 or even Scope 2, whereby upstream Scope 3 emissions are even harder to estimate than downstream Scope 3 emissions. The subgroup is very aware of this challenge and hence does not expect benchmark administrators to have firm specific Scope 3 emissions estimations for all emissions sources in the near future. Instead, the subgroup would understand if those Scope 3 emission estimations were based on sector and/or activity characteristics of each firm (e.g. Scope 3 as sector/activity derived multiples of Scope 1 emissions). That said, the subgroup recommends that the main emissions sources (e.g. use of sold products in case of oil & gas or automotive) should be estimated on a per firm basis whenever possible to ensure a meaningful selection of individual assets.

4.3 How timely should the CO2e data which is used in the PAB's and CTB's decarbonization trajectories be? [Platform, 2025]

The CO2e data used should be as up-to-date as technically feasible. Benchmark administrators are encouraged to ensure that the vast majority - ideally all - constituents with complete CO2e disclosures have their data incorporated into the trajectory calculation within no more than 180 days after their fiscal year-end.

4.4 Scope 1 CO2e emissions can be reported under the 'operational control' method excluding subsidiaries which are under the parent's 'financial control'. Is this valid? [Platform, 2025]

No, all subsidiaries under a parent entity's financial control must be included in its Scope 1 CO2e emissions. Benchmark administrators should verify compliance with this requirement and, if not met, apply estimates based on the Precautionary Principle.

4.5 Scope 2 CO2e data is often reported in two ways: market-based and location based. Which Scope 2 number should be used to calculate the benchmark decarbonization? [Platform, 2025]

Location-based CO2e reporting relies on average grid data, offering a physically realistic reflection of emissions but lacking firm-specific insights. Market-based reporting, on the other hand, accounts for renewable energy purchasing decisions at firm level. For these decisions to be physically meaningful, the renewable energy consumption has to occur within the same electrical grid where the reporting entity's electricity use takes place. Only when this direct grid match between renewable energy purchase and production is ensured can market-based scope 2 CO2e emissions serve as a valid firm-specific measure. It is recommended to verify this grid match condition when using market-based Scope 2 CO2e data.

4.6 Under Scope 3 CO₂e emissions, should each supplier-customer relationship be treated the same. For instance, is a tyre manufacturer of combustion engine cars to be treated equal to the fuel supplier? [Platform , 2025]

No, supplier-customer relationships vary considerably in terms of responsibility over emissions. For example, fuel suppliers and combustion engine manufacturers are directly responsible in the CO₂e missions of combustion engine vehicles, whereas tyre and seat cover manufacturers have little, if any, control over these CO₂e emissions. The Platform encourages differentiated treatment of supplier-customer relationships wherever possible.

5. Related Classifications

5.1 Which sector classifications shall be used? [TEG subgroup, 2019]

NACE codes shall be used. For ease of translation to alternative sector classification systems, translations to BICS, GICS, ICB, and TRBC are provided in Appendix B. The information available in Appendix B to this Handbook should be considered valid at the date the handbook is published. In order to facilitate the use by all interested parties, the TEG recommends that those matching tables between proprietary classifications and the NACE Codes should be published on relevant website(s) and should be updated regularly.¹³

5.2 What to do in case of ‘unusual’ classification decisions by the respective sector classification scheme? [TEG subgroup, 2019]

When using NACE codes directly rather than translated to alternative sector classification systems, benchmark administrators should be aware that companies have significant discretion in determining the NACE codes of their legal entities. For instance, a gas company may issue bonds through the legal entity which serves as; ‘financial holding’ and was therefore classified as financial services rather than oil & gas. Hence, benchmark administrators are strongly recommended to use the NACE code of the respective legal entity or entities in the corporate structure which actually undertakes the value generating activities rather than the NACE code of the legal entity which issued the security.¹⁴

¹³ The TEG Subgroup displays all industry classification systems matched to NACE in alphabetical order, which were in a position to provide a detailed mapping at the time of writing. Any representative willing to be included with their in depth NACE mapping in updates to the Handbook is very welcome to contact the relevant TEG subgroup members.

¹⁴ Anyone observing unusual classification decisions by NACE or equivalent classification schemes is very welcome to contact the relevant subgroup members, as all this information will enhance the quality of the review process.

5.3 Since Financials include Scope 3 Category 15 since December 2024, shall they be classified as high or low impact sector? [Platform, 2025]

According to the [Platform on Sustainable Finance's \(PSF\) Usability Report of October 2022](#)¹⁵ benchmark administrators should have flexibility in deciding whether to classify NACE Code K as a high- or low-impact sector. Specifically, “[t]he Platform therefore recommends allowing the benchmark providers an additional level of flexibility in terms of treatment of the financial and insurance sector constituents. It is recommended that benchmark providers are able to choose whether to treat the financial and insurance sector equities as high or low impact sector constituents.”(p. 159)

¹⁵ https://finance.ec.europa.eu/system/files/2022-10/221011-sustainable-finance-platform-finance-report-usability_en_1.pdf

6. ESG Disclosures

6.1. Can you explain the relevance of the disclosure requirements in section 3.1? Are these mandatory disclosures required of all benchmarks? [TEG subgroup, 2019]

The KPIs provided in the report are mandatory disclosures for benchmarks that pursue ESG objectives, based on the relevant asset class. Benchmarks that do not pursue ESG objectives can opt out of disclosing ESG KPIs altogether. However, given the market pressure from investors for more harmonized and more transparent ESG disclosures by index providers, it is important that all benchmarks – with the exclusion of interest rate and exchange rate benchmarks – aim to integrate ESG factors and therefore are provided with a harmonized list of disclosures.

6.2. Shall ESG ratings be compared at the aggregate or Key Performance Indicator (KPI) level? [TEG subgroup, 2019]

We are aware of the limited correlation of the various aggregated ESG ratings. We also know that these correlations increase substantially when compared at the level of individual equivalent KPIs (e.g. executive remuneration, gender diversity). Hence, KPI level comparisons are more meaningful than aggregate comparisons of ESG ratings. The results of comparisons at the aggregated ‘ESG level’ originate quite naturally from the ESG rating providers use of different philosophies, different KPI dictionaries and different ESG assessment systems. Investors do not expect various buy side earnings forecasts to correlate very highly and similarly investors may not want to expect aggregated buy side ESG ratings to correlate strongly.¹⁶

¹⁶ Please note that ESG ratings are not necessarily comparable to credit ratings due to different practices with respect to solicitation. See, for instance, www.deepdata.ai for the expectation of financial independence in ESG assessments.

6.3. How to treat negative revenue values in the disclosure of Weighted Average Carbon Intensity (WACI)? [Platform, 2025]

Revenue can turn negative for various reasons, such as ‘contra revenues’ (e.g. product refunds) or negative ‘interests’ from investment returns. Such numbers can be substantial, with several firms reporting billions in negative revenue in FY 2022. This phenomenon represents a severe challenge for disclosure of WACI (or alternative forms of revenue-based carbon intensity), as it artificially lowers WACI, creating an effect equivalent to negative emissions without any negative emissions occurring physically. Hence, it is strongly advised to ensure that only positive revenue components are included in the calculation of WACI, excluding any negative components that could either turn total revenue negative or reduce its positive value.

7. Further Aspects

7.1 Is the technical recommendations of at least 7% on average per annum reduction related to the United Nations Emissions Gap report published in November 2019? [TEG subgroup, 2019]

The United Nations' Emissions Gap report published in November 2019 requests nations to reduce their GHG emissions annually by 7.6% (Rogelj et al., 2019). This number is strikingly similar to the 7% employed in EU Climate Transition Investing. Hence, it is natural to ask if they are related.

When the TEG subgroup developed the Climate Transition Investing approach based on the IPCC's 1.5°C trajectory with no or limited overshoot in May 2019, neither member had knowledge of the United Nations work and, as such, the TEG number was not inspired by the United Nations work. That said, the subgroup derived the 7% from the IPCC's trajectory between 2020 and 2030 (Table 2.1, Rogelj et al., 2018) and it seems likely that the team behind the United Nations Emissions Gap report followed an equivalent process.

7.2 Can asset managers also employ a climate transition investing approach or is this approach limited to benchmark administrators? [TEG subgroup, 2019]

Anyone is very welcome to employ the climate transition investing philosophy: asset owners, asset managers, private investors, academics, students and so on. The subgroup very much welcomes anyone to use the climate transition investing and challenge us with questions and further ideas for advancement.

The actual EU CTB and EU PAB labels are, at this stage, only targeted at investment indices, which are administered by benchmark administrators. That said, anyone could develop the ambition to become a benchmark administrator.

7.3 Some of my colleagues have little background knowledge in finance. How can I explain Climate Transition Benchmarks to them, maybe with a metaphor? [TEG subgroup, 2019]

The metaphor we like to use is a diet. We all know diets from our daily lives, where individuals aim to reduce their calories in take to lose weight or halt weight gain and avoid negative health consequences. Similarly, the planet has to reduce GHG emissions to halt temperature increases and avoid the climate emergency from worsening. Much like the Climate Transition Benchmark aiming to reduce its GHG emissions by at least 7% year on year to regain a healthy balance within 30 years, an individual used to overeating may aim to reduce his/her calorie intake by at least 7% week on week to arrive at healthy balance within 30 weeks.

Anyone with experience in dieting will be aware that the two most important aspects are (i) discipline and (ii) measurement. Without discipline for reducing calories at least 7% each and every week, the diet is unlikely successful. Without accurate measurement, i.e. taking your accurate weight once a week, the diet is hard to manage, and one may not know when to increase intensity or when one achieved success. Furthermore, diet plans can be useful but only if they are immediately followed up by discipline and measurement. A diet plan that permits an individual to consume all the chocolates that are already in the household before commencing the actual diet is experiencing too much ‘overshoot’ to have a decent chance at success.

Similarly, an individual’s diet is like an asset owner’s portfolio. One eats a variety of different foods and a diversification in food intakes is healthy. That said, some foods have significantly more calories than others. Hence, the individual who diets can only continue to eat the same allocations of say high calorie chocolate, low fat yogurts and low-calorie salad if the chocolate producers reduce their calories per 100g by at least 7% on average each period. Otherwise, the individual needs to reduce his/her consumption of chocolates by at least 7% each period and instead eat more yogurt or a lot more salad. This final aspect of the redistribution of weight from high calorie foods to low calorie foods is crucial to understand metaphorically, as it shows how Climate Transition Benchmarks do not only reduce an asset owner’s exposure to high GHG intensity activities in line with the IPCC trajectory but simultaneously also have the opportunity to support greener activities with the freed-up capital.

7.4 Now my colleague understands how Climate Transition Benchmarks work. But why would the most polluting companies, especially those outside the EU, listen to the benchmark administrators and their investors? [TEG subgroup, 2019]

Companies, particularly those with large mining or drilling operations, have a lot of debt, which they need to regularly re-finance via the issuance of new shares or, more commonly, new bonds. If investors reduce their re-financing of mining and drilling activities that intensify the climate crisis and instead increase their re-financing of climate crisis mitigating activities as foreseen in the at least -7% trajectory, then they are increasing the cost of (debt) capital for unsustainable activities while making sustainable activities more affordable. Since large European asset owners invest globally and not just within the European Union, this ‘cost of re-financing’ effect has a good chance of being impactful at the planetary level.

7.5. Post 2019, how successful have EU PABs and EU CTBs been commercially? [Platform , 2025]

EU PABs and EU CTBs have been highly successful commercially, significantly enhancing the competitiveness of the European asset management industry. The latest figures published by the European Commission in 2024 show that €180bn in assets under management meet the criteria of the EU climate transition benchmarks and EU Paris aligned benchmarks – collectively known as the EU climate benchmarks – with expectations to surpass the €200bn mark soon. These climate benchmarks have been recognised by major investment institutions as solid tools to support investors’ decarbonisation pathway strategies.¹⁷

¹⁷ https://finance.ec.europa.eu/sustainable-finance/tools-and-standards/eu-taxonomy-sustainable-activities/eu-taxonomys-uptake-ground_en

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TEG Appendix A: Example calculation of the 7% on average per annum reduction, geometrically calculated, for a 2020 Base Year

Calendar Year	Maximum GHG Intensity compared to Reference Universe		Reference Universe with Scope 3 integration
	CTB	PAB	
2020	70.00%	50.00%	Investable Universe in Base Year (i.e. 2020) with Scope 3 emissions considered for NACE Level 2 codes: 05, 06, 07, 08, 09, 19, 20
2021	65.10%	46.50%	Investable Universe in Base Year (i.e. 2020) with Scope 3 emissions considered for NACE Level 2 codes: 05, 06, 07, 08, 09, 19, 20
2022	60.54%	43.25%	Investable Universe in Base Year (i.e. 2020) with Scope 3 emissions considered for NACE Level 2 codes: 05-33, 41-43, 49-53, 81
2023	56.30%	40.22%	Investable Universe in Base Year (i.e. 2020) with Scope 3 emissions considered for NACE Level 2 codes: 05-33, 41-43, 49-53, 81
2024	52.36%	37.40%	Investable Universe in Base Year (i.e. 2020) with Scope 3 emissions considered for all NACE Level 2 codes
2025	48.70%	34.78%	Investable Universe in Base Year (i.e. 2020) with Scope 3 emissions considered for all NACE Level 2 codes
2026	45.29%	32.35%	Investable Universe in Base Year (i.e. 2020) with Scope 3 emissions considered for all NACE Level 2 codes
2027	42.12%	30.09%	Investable Universe in Base Year (i.e. 2020) with Scope 3 emissions considered for all NACE Level 2 codes
2028	39.17%	27.98%	Investable Universe in Base Year (i.e. 2020) with Scope 3 emissions considered for all NACE Level 2 codes
2029	36.43%	26.02%	Investable Universe in Base Year (i.e. 2020) with Scope 3 emissions considered for all NACE Level 2 codes
2030	33.88%	24.20%	Investable Universe in Base Year (i.e. 2020) with Scope 3 emissions considered for all NACE Level 2 codes

TEG Appendix B: NACE to BICS, GICS, ICBS & TRBC Matching

[omitted for brevity – please see Version 1 of Handbook]

Appendix C: Platform Members and Observers

a. Chair

Organisation	Name
Comisión Nacional del Mercado de Valores (CNMV)	Helena Viñes Fiestas

b. Rapporteur(s)

Organisation / Subgroup Name	Name
AXA / SG 1	Clémence Humeau
EPA Network / TWG	Astrid Matthey
European Investment Bank (EIB) / SG 3	Bertrand Magné
Orgalim / TWG	Andreas Brunsgaard
Skandinaviska Enskilda Banken (SEB) AB (publ) / SG 3	Karl-Oskar Olming
UNEP FI / SG 1	Elodie Feller

c. Members

Organisation	Name
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Allianz SE	Jörg Ladwein
AXA	Clémence Humeau
BusinessEurope	Erik Berggren
CDP Worldwide (Europe) gemeinnützige GmbH	Hélène Procoudine-Gorsky
Climate Bonds Initiative (CBI)	Sean Kidney
EPIA SolarPower Europe / ENEL	Giulia Guinardi
Eurochambres	Karolina Opielewicz
Eurometaux	Mukund Bhagwat
European Alliance for Sustainable Finance in waste management and recycling	Daniel Houska
European Banking Federation aisbl	Hans Biemans
International Sustainable Finance Centre z.	Linda Zeilina
Natural Resources Institute Finland	Esa-Jussi Viitala
Orgalim	Andreas Brunsgaard
Skandinaviska Enskilda Banken (SEB) AB (publ)	Karl-Oskar Olming
SMEunited	Gerhard Huemer
Sustainable Finance Observatory	Nicola Koch
Sustainalytics	Anne Schoemaker
Water Europe	Gonzalo de la Cámara
Type A	Agnieszka Slomka-Golebiowska
Type A	Andreas Hoepner
Type A	Bernabé Alonso Farinas
Type A	Camille Leca
Type A	Linda Romanovska
Type A	Ottorino Morresi
Type B	Marie Baumgarts

d. Directly appointed members

Organisation	Name
EU Agency for Fundamental Rights (FRA)	Adrianna Bochenek
European Banking Authority (EBA)	Ali Erbilgic
European Environment Agency (EEA)	Andreas Barkman
European Insurance and Occupational Pensions Authority (EIOPA)	Pamela Schuermans
European Investment Bank (EIB)	Aldo M. Romani
European Investment Fund (EIF)	Merilin Hörats
European Securities and Markets Authority (ESMA)	Angeliki Vogiatzi

e. Observers

Organisation	Name
Bloomberg L.P.	Nadia Humphreys
Business and Science Poland	Lukasz Blonski
Cassa Depositi e Prestiti SpA	Gaia Ghirardi
CEFIC	Liesbeth Timmermans
European Bank for Reconstruction and Development (EBRD)	Maya Hennerkes
European Central Bank (ECB)	Matthias Rau-Goehring
European Financial Reporting Advisory Group (EFRAG)	Kerstin Lopatta
European Network of the Heads of Environment Protection Agencies (EPA Network)	Natalie Glas
European Stability Mechanism (ESM)	Carlos Martins
European Trade Union Confederation (ETUC)	Marco Cilento
Organisation for Economic Co-operation and Development (OECD)	Raphael Jachnik
Principles for Responsible Investment (PRI)	Elise Attal
SGI Europe	Filippo Brandolini
United Nations Environment Programme Finance Initiative (UNEP FI)	Elodie Feller
World Green Building Council	Julie Emmrich
Type A	Eila Kreivi

