



# TRACKING EMISSIONS OVER TIME GUIDANCE



## INTRODUCTION

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Organizations must track greenhouse gas (GHG) emissions over time in order to measure progress towards GHG targets, publicly report GHG reductions, manage risks and opportunities, and address the needs of investors and other stakeholders.

While it can be valuable to understand changes in an organization's real emissions over time, it is also important to normalize that information to reflect evolutions in organizational structure. For example, an acquisition of an existing facility from a third party could dramatically increase an organization's emissions relative to previous reporting years, even though those emissions do not represent an increase in total emissions released to the atmosphere. By normalizing inventory data, the acquiring organization can better communicate its impacts on total emissions.

Normalization of emissions inventories over time requires that a base year (or base period) GHG inventory be established as the benchmark against which current or future emissions are compared. The base year may need to be periodically adjusted to reflect current organizational structures in order to ensure that a meaningful comparison can be made. Adjustments to base years may not take the place of previously reported data. Instead, this information can be used to generate an alternate report that reflects the appropriate structural organization so that both an organization's emissions in any given year and its emissions trend over time are transparent. Organizations may elect to adjust intervening years in a similar way.

Setting a base year is not a requirement for The Climate Registry (TCR) reporting. However, TCR strongly encourages all members to publicly set a base year and members must set a public base year in the Climate Registered Information System (CRIS) for TCR to recognize any GHG reductions. Base years are required to be set in order for inventories to be in conformance with the international standards on corporate GHG accounting and reporting (the GHG Protocol Corporate Standard and ISO 14064-1: 2018).

Organizations reporting a base year must develop, document and apply a procedure on how they will review and adjust (recalculate) their base year emissions.

## Setting a Base Year

Organizations may establish one or more base year inventories in order to track progress towards one or multiple goals (i.e., concurrent short- and long-term emission reduction targets).

Members choosing to set base years must choose one of the following temporal options for each base year:

- » A single year inventory;<sup>1</sup> or,

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<sup>1</sup> A single year could be defined as a calendar year or a fiscal year. A rolling base year, which involves shifting or rolling the base year forward by a certain number of years at regular intervals of time, is also acceptable. Guidance on setting and adjusting a rolling base year is provided in WRI and WBCSD's [Greenhouse Gas Protocol Corporate Standard](#).

» A base period<sup>2</sup> that reflects an average of annual emissions over several consecutive years.<sup>3</sup>  
Base year inventories must meet the reporting and verification requirements<sup>4</sup> outlined below.

### Base Year Reporting Requirements<sup>5</sup>

- » Reported in accordance with GRP
- » Public disclosure of which Scope 2 method was used for the base year, or if both Scope 2 methods are included in the base year
- » Publicly disclosed explanation of how the base year was selected

### Base Year Verification Options

- » Verified by a TCR-recognized verification body (VB) to a reasonable level of assurance
- » Verified by a third party to a reasonable level of assurance and 5% materiality threshold (accepted for base years that have been previously quantified and reported to another standard)

Members may change the base year to a different year inventory, provided they publicly disclose justification for the change (e.g., base year inventory was changed from 2015 to 2018 due to a major acquisition in 2018 and a lack of complete data to calculate the 2015 emissions from the acquisition).

**Please note:** An organization may have an existing regulatory baseline requirement that it must meet for a mandatory reporting program. This external benchmark does not change or affect the base year with TCR, which is for analysis of a member's entity-wide emissions over time only.

## Adjusting Base Year Emissions

The base year inventory must be adjusted when:<sup>6</sup>

1. A structural change in organizational boundaries (e.g., merger, acquisition, or divestiture) triggers a significant cumulative change in the organization's base year emissions;
2. A change in reporting boundary, calculation methodologies, or improvement in the accuracy of or emission factors<sup>7,8</sup> triggers a significant cumulative change in the organization's base year emissions;  
or,
3. A significant error or a number of cumulative errors that are collectively significant are discovered.

*Significant* is defined as a cumulative change of five percent or larger in an organization's total base year emissions (CO<sub>2</sub>e sum of Scope 1, Scope 2,<sup>9</sup> combustion-based direct biogenic emissions, and combustion-based indirect biogenic emissions associated with consumed energy).

Organizations should not adjust base year emissions in any of the following situations:

- » Acquisition (or insourcing) or divestiture (or outsourcing) of a facility or business unit that did not exist

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2 For simplicity base periods are referred to as base years throughout this document.

3 A multi-year average base period may be appropriate for organizations with unusual fluctuations in emissions that would make a single year's data unrepresentative of the organization's overall emissions profile (e.g., emissions from the agriculture and water sectors may fluctuate widely year to year depending on temperature and rainfall conditions).

4 Base year inventories that are set for internal tracking purposes (and not published through TCR) are not required to be verified.

5 Please contact TCR at [help@theclimateregistry.org](mailto:help@theclimateregistry.org) if you would like TCR to consider recognizing a base year inventory reported in accordance with other requirements.

6 Note: This approach is used for both single year base years and rolling base years.

7 Changes in emission factor or activity data that represent real changes in emissions (e.g., changes in fuel type or technology) do not trigger an adjustment.

8 Organizations must adjust the base year if a significant cumulative change in base year emissions is triggered by a change in methodology used to develop emissions factors (e.g., eGRID), and updated emission factors are provided for the base year.

9 Significance must be evaluated by calculating total base year emissions separately for each Scope 2 method, so that a 5% change in base year emissions from either method would trigger a base year adjustment.

in the base year;

- » Structural changes due to ‘outsourcing’ if an organization is reporting its indirect emissions from relevant outsourced activities in the current reporting year;
- » Structural changes due to ‘insourcing’ (the converse of outsourcing) if the organization already included the indirect emissions associated with the insourced activities in its base year report; or,
- » Organic growth or decline, which refers to increases or decreases in production output, changes in product mix, and closures and openings of operating units owned or controlled by an organization.

When a base year is adjusted, any new requirements that have been incorporated into TCR’s reporting protocols and guidance since the original base year was reported must be met in the base year adjustment.<sup>10</sup> For example, if a base year inventory reported according to General Reporting Protocol (GRP) v. 2.0 is adjusted to account for an acquisition, the organization must account for best practice GHG reporting updates in GRP v. 3.0, including reporting Scope 2 emissions according to the location-based and market-based methods in the adjusted inventory.

The organization must document the context for base year adjustments (including when they occurred) in their base year inventory as well as in subsequent GHG inventories. The organization must also have its third-party VB attest to the accuracy of the base year adjustment.<sup>11</sup>

## TIMING OF RECALCULATION FOR STRUCTURAL CHANGES

If a significant structural change takes place in the middle of the reporting year, emissions should be recalculated for the entire base year, instead of just the corresponding portion of the base year after the structural change occurred in the current year. Recalculating for the entire base year avoids having to recalculate base year emissions again in the succeeding year of reporting.

### Limitations in Calculation Methodologies

When a base year adjustment is triggered by a change in calculation methodologies or emission factors but the methodologies or emission factors are not available for the base year, organizations have the following options:

- » Use a conservative estimate derived from more recent data for the adjustment of the base year;
- » Forego recalculation and disclose the change in methodologies in the base year inventory as well as in every year of reporting after the change was implemented; or,
- » Change the base year to another year where more complete data is available.



### Limitations in Historical Data

Members that have acquired or merged with an organization and do not have access to data needed to use any of TCR’s [approved emission calculation methods](#) for the new company, may instead use an alternative simplified method for adjusting the base year emissions using available data.<sup>12</sup> Alternative simplified methods should be conservative (i.e., err on the side of overestimating rather than underestimating emissions).

<sup>10</sup> The resulting inventory from adjustments made to a base year is known as the base year adjustment.

<sup>11</sup> Base year inventories that are set for internal tracking purposes (and not published through TCR) are not required to be verified when they are established or adjusted.

<sup>12</sup> Examples of alternative methods for estimating base year emissions with limited data are provided in IPCC’s [Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories](#), section 7.3.2.

If absolutely no data for the new company is available, making it impossible to estimate the impact of the organizational change on a member's base year emissions, TCR recommends that the base year be changed to be the current reporting year (which would include the new acquisition, and thus, would reflect the organization's current organizational structure). Organizations should also disclose the structural change to ensure transparency.

## Summary of Public Disclosure Requirements

To enhance transparency, members must publicly disclose the following information related to establishing, changing or adjusting their base year. This public disclosure will appear in CRIS alongside the base year as well as with every subsequent inventory.

- » Explanation of how the base year was selected;
- » Documentation of procedure used to review and adjust base year emissions;
- » Justification for a change to a different base year;
- » Explanation of any base year adjustments and when they occurred; and,
- » Explanation of new methodologies which trigger a base year adjustment but are not available to adjust the base year (if the organization chooses to maintain the same base year without an adjustment to incorporate the new methods).

## SETTING A GHG REDUCTION TARGET

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The inventory base year is often used as a basis for setting and tracking progress towards an emissions reduction target. Setting an aggressive GHG target can motivate GHG reduction efforts at an organization and often results in the identification of additional opportunities for reductions. Establishing a target ensures that GHG management has the attention of an organization's senior level management, who can direct additional funding to GHG reduction projects. Targets can also help drive efficiency and innovation to build resiliency for future resource scarcity and ultimately reduce costs. Setting and working to achieve GHG reduction targets are a way to demonstrate leadership and corporate responsibility to enhance brand reputation and investor confidence, improve employee morale, and assist in the recruiting and retention of qualified employees. See TCR's [Guide to Building Climate Ambition](#) for more information on setting a GHG reduction goal, or contact the Help Desk to schedule a goal-setting consultation.