GREENHOUSE GAS PROTOCOL

Mitigation Goal Standard

EXECUTIVE SUMMARY

An accounting and reporting standard for national and subnational greenhouse gas reduction goals

WORLD RESOURCES INSTITUTE

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1. Context

Greenhouse gas (GHG) emissions are driving climate change and its impacts around the world. Every degree increase in temperature will produce increasingly unpredictable and dangerous impacts for people and ecosystems. As a result, there is an urgent need to accelerate efforts to reduce GHG emissions.

National, subnational, and city-level governments are developing and implementing various types of climate change mitigation goals. Robust GHG accounting and reporting methods are needed for governments to track progress toward their goals and to ensure that goals are being met. Transparency is also needed around how goals have been designed in order to inform mitigation strategies and provide credibility to stakeholders.

In this context, the World Resources Institute convened a global multistakeholder process to develop the GHG Protocol *Mitigation Goal Standard*—an international voluntary standard intended to help governments at all levels design, assess, and report progress toward their GHG emission reduction goals in a relevant, consistent, complete, accurate, and transparent manner. Box 1 further explains this process.

Box 1 How the standard was developed

This standard was developed by the Greenhouse Gas Protocol (GHG Protocol). The GHG Protocol is a partnership of businesses, nongovernmental organizations (NGOs), governments, academic institutions, and others convened by the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD). Launched in 1998, the GHG Protocol has the mission to develop internationally accepted GHG accounting and reporting standards and tools, and to promote their adoption in order to achieve a low emissions economy worldwide. All GHG Protocol standards and guidance are available at www.ghgprotocol.org.

The first draft of the *Mitigation Goal Standard* was developed in 2012 by a Technical Working Group, with strategic input from the project's Advisory Committee. It was reviewed by the Review Group. In 2013, the second draft was pilot tested for several goals to test how the standard works in practice. Pilots were conducted at the national or subnational level in Chile, India, Israel, South Africa, the United Kingdom, and the United States. The standard was revised based on pilot testing feedback and circulated for public comment in July and August 2014.

In parallel, the GHG Protocol *Policy and Action Standard*—an international voluntary standard for estimating the greenhouse gas effects of policies and actions—was developed through the same standard development process.

2. Why use the standard

The *Mitigation Goal Standard* helps governments accomplish the following:

- Design a mitigation goal, which entails
  - understanding the advantages and disadvantages of various types of mitigation goals and
  - informing the choice of mitigation strategies used for achieving the goal.
- Define accounting methods for tracking progress.
- Calculate allowable emissions in the target year(s) in order to understand future emissions levels and emission reductions associated with meeting the goal.
- Assess and report progress toward meeting a goal, which entails
  - evaluating what additional actions are needed to achieve the goal,
  - publicly reporting goal progress and assessment methods, and
  - meeting stakeholder demands for transparency.
- Assess and report whether a goal has been achieved.

In the absence of international rules, the standard may also be useful for designing and assessing goals under the United Nations Framework Convention on Climate Change (UNFCCC), including intended nationally determined mitigation contributions, quantified emission limitation or reduction commitments (QELRCs), and nationally appropriate mitigation actions (NAMAs) framed as mitigation goals, as well as goals in the context of low emissions development strategies (LEDS), and/or other domestic or international mitigation commitments.[1]

Relationship to other GHG accounting standards

Before choosing to use the *Mitigation Goal Standard*, users should consider the broader landscape of GHG accounting standards to decide on the most appropriate standard to use.

GHG emissions can be accounted for at the country, city, company, or facility level using GHG inventories. GHG accounting can also be used to estimate GHG reductions from specific projects, policies, or actions, or to assess progress toward GHG mitigation goals. Table 1 provides an overview of standards and guidelines available for measuring emissions, emission reductions, and goal progress at multiple levels. Taken together, the methods provide a basis for comprehensive GHG management.

Development of a GHG inventory is a critical first step toward establishing a GHG reduction goal. GHG inventories provide information on the magnitude of emissions and are the foundation for tracking progress toward goals over time. However, assessing mitigation goals requires

Table 1 Methods for measuring and reporting GHG emissions, emission reductions, and goal progress

Type of GHG measurement	Countries	Cities and subnational jurisdictions	Companies/ organizations
GHG emissions inventory	Intergovernmental Panel on Climate Change (IPCC) *Guidelines for National Greenhouse Gas Inventories*	Global Protocol for Community Scale Emissions (GPC)	GHG Protocol *Corporate Standard*
GHG reductions	GHG Protocol *Policy and Action Standard* (for policies and actions) *GHG Protocol for Project Accounting* (for projects)		
Goal progress	GHG Protocol *Mitigation Goals Standard*		GHG Protocol *Corporate Standard*

additional methods beyond the inventory to account for transfers of emissions units from market mechanisms (such as offset credits and tradable allowances) and to account for mitigation in the land sector, which may differ from accounting methods used for national inventories. By providing these additional methods, as well as guidance on goal design, the *Mitigation Goal Standard* enables governments to clearly and consistently design and track progress toward their goals.

3. Who should use the standard

The standard is primarily intended for national and subnational governments, in any country or region, that are designing or assessing economy-wide or sectoral goals. Companies and organizations may also find this guidance useful. They may also refer as well to Chapter 11 of the GHG Protocol *Corporate Accounting and Reporting Standard* for specific guidance on corporate mitigation goals. The standard may also be useful for research institutions and NGOs that are assessing the emissions impacts of mitigation goals and tracking progress toward their achievement.

4. When to apply the standard

The standard is designed to help governments at each stage of the goal-setting process, from design to implementation and assessment.

- **Before implementation of the goal:** Design a mitigation goal and define the accounting methods for tracking progress.
- **During the goal period:** Track and report progress toward the goal.
- **At the end of the goal period:** Assess and report whether the goal has been achieved.

The frequency and timing of the application of the standard depends on each user's objectives and resources. The most comprehensive approach is to apply the standard when designing a goal, annually (or regularly) during implementation, and after implementation at the end of the goal period.

5. Overview of steps

Figure 1 surveys the steps in the standard and the corresponding chapters. Goal assessment is an iterative process, with accounting and reporting procedures occurring at each step. Not all of the steps outlined in the figure will be relevant to all users. For example, Chapters 8 and 9 would not be relevant for users at the beginning of the goal period.

Figure 1 **Overview of steps for mitigation goal accounting**

Overarching steps	Detailed steps	Chapter
Design goal/methods	Design a mitigation goal	4
	Estimate base year or baseline scenario emissions	5
	Account for the land sector	6
Calculate allowable emissions	Calculate allowable emissions in the target year(s)	7
Assess progress/ achievement	Assess progress during the goal period	8
	Assess goal achievement at the end of the goal period	9
Verify	Verify results (Optional)	10
Report	Report results and methodology used	11

5.1 Design the mitigation goal

To inform the design of the goal, users should consider global mitigation needs and jurisdiction-specific mitigation opportunities and development and policy objectives. Recent findings from climate science, such as IPCC reports, can help users understand the magnitude of emission reductions needed to limit warming. Users may also choose to identify mitigation opportunities using mitigation assessment methods, which indicate the magnitude of available reduction opportunities and the potential costs and benefits associated with each.

Goal design involves several choices. This includes, for example, the selection of which emissions to include in the goal boundary, such as the geographic area, sectors, greenhouse gases, and in-jurisdiction and out-of-jurisdiction emissions that will be covered by the goal. Other fundamental choices include the selection of the mitigation goal type (see Table 2) and the timeframe of the goal, including whether it is a single-year or multi-year goal.

Table 2 Overview of mitigation goal types

Goal Type	Description	Reductions in what?	Reductions relative to what?
Base year emissions goal	Reduce, or control the increase of, emissions by a specified quantity relative to a base year. For example, a 25% reduction from 1990 levels by 2020.	Emissions	Historical base year emissions
Fixed-level goal	Reduce, or control the increase of, emissions to an absolute emissions level in a target year. One type of fixed-level goal is a carbon neutrality goal, which is designed to reach zero net emissions by a certain date.	Emissions	No reference level
Base year intensity goal	Reduce emissions intensity (emissions per unit of another variable, typically GDP) by a specified quantity relative to a base year. For example, a 40% reduction from 1990 base year intensity by 2020.	Emissions intensity	Historical base year emissions
Baseline scenario goal	Reduce emissions by a specified quantity relative to a projected emissions baseline scenario. A baseline scenario is a reference case that represents future events or conditions most likely to occur in the absence of activities taken to meet the mitigation goal. For example, a 30% reduction from baseline scenario emissions in 2020.	Emissions	Projected baseline scenario emissions

Note: Goals may be framed in other ways beyond the four types described above. For example, this standard is not directly applicable to goals framed in terms of energy efficiency, renewable energy, or other targets not expressed in terms of GHG emissions or emission reductions. However, much of the guidance may still be relevant.

Users also need to decide whether the goal will be achieved solely by emission reductions in the jurisdiction or with the use of transferable emissions units from market mechanisms. Transferable emissions units include offset credits generated from emission reduction projects or programs, such as the Clean Development Mechanism, and emissions allowances from emissions trading programs.

Another key choice is that of goal level, which defines the overall GHG emission reductions associated with achieving the goal. Box 2 summarizes the key considerations included in this chapter for goal design that can maximize emission reductions, measurability, and completeness.

Box 2 Key considerations for designing a goal that can maximize emission reductions, measurability, and completeness

If the objectives are to maximize emission reductions, measurability, and completeness, users should consider the following when designing mitigation goals:

- **Choice of goal type:** Base year emissions goals and fixed-level goals are simpler to account for, more certain, and more transparent than base year intensity goals and baseline scenario goals, because allowable emissions in the target year(s) can be easily calculated at the beginning of the goal period, and progress can be tracked using the GHG inventory alone without the need for additional models, socioeconomic data, or assumptions. Users seeking to accommodate short-term emissions increases should consider adopting base year emissions goals or fixed-level goals that are framed as a controlled increase in emissions from a base year.
- **Choice of goal level:** The goal level should significantly reduce emissions below the jurisdiction's business-as-usual emissions trajectory (taking into account currently implemented and adopted mitigation policies) and correspond to an emissions trajectory that is in line with the level of emission reductions necessary to avoid dangerous climate change impacts, as determined by the most recent climate science.
- **Choice of goal timeframe:** Multi-year goals have a better chance of limiting cumulative emissions over the goal period than single-year goals, and such goals enable understanding of anticipated emissions levels over multiple years, rather than only a single year. Adopting a combination of short-term and long-term goals provides more clarity for long-term planning and better ensures a decreasing emissions pathway.
- **Use of transferable emissions units:** Ensuring that any transferable emissions units applied toward a goal meet the highest quality principles and are generated in the target year or period ensures the most environmental integrity and best enables consistent accounting. Mechanisms for tracking units between buyers and sellers can be used to strengthen the environmental integrity of mitigation goals and prevent double counting.
- **Minimizing leakage:** Emissions increases outside of the goal boundary can be minimized by including significant out-of-jurisdiction emissions in the goal boundary, which may be especially relevant for subnational jurisdictions such as cities.

5.2 Estimate base year or baseline scenario emissions

The next step is to estimate base year or baseline scenario emissions. Users with base year emissions goals or base year intensity goals need to choose a base year of historical emissions data to use as a reference point for tracking reductions over time. Users with baseline scenario goals need to develop a baseline scenario, which is a reference case that represents the future emissions most likely to occur in the absence of a mitigation goal. (Baseline scenarios are sometimes also referred to as business-as-usual (BAU) scenarios.) Developing a baseline scenario typically requires a wide variety of inputs, such as data on emissions drivers (economic activity, energy prices, energy technology, and population growth), assumptions about how emissions drivers are expected to change over time, and data on any included policies.

5.3 Account for the land sector

In most sectors, tracking progress toward a goal is accomplished by comparing GHG inventory emissions over time. However, this approach may not be appropriate for the land sector given the significant role that emissions from nonhuman activities can play, such as pest outbreaks and other natural disturbances, and the role that earlier land management may play on influencing emissions and removals during the goal period. Furthermore, how emissions and removals from the land sector are incorporated into the mitigation goal can have a significant impact on the ambition of the goal and the overall emission reductions achieved. Therefore, the standard provides separate guidance to help users choose how to treat the land sector and how to account for land sector emissions and removals.

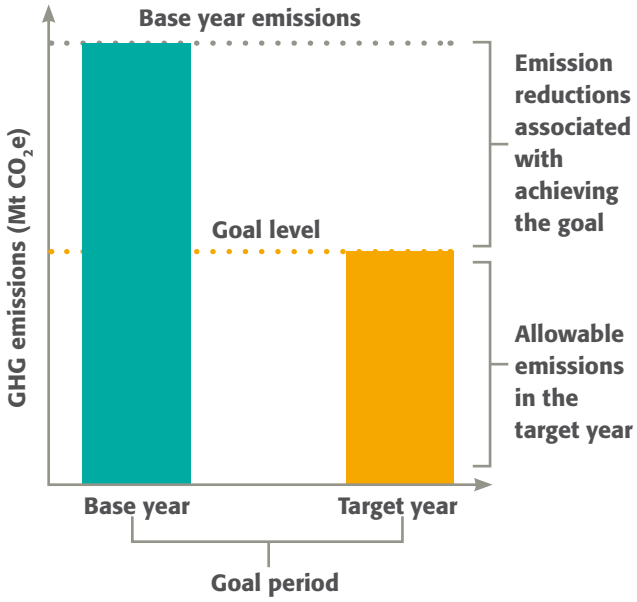
5.4 Calculate allowable emissions in the target year or period

Allowable emissions are the maximum level of emissions in the target year that are consistent with achieving the goal. They represent the goalpost for performance tracking and are therefore critical for enabling users to assess progress and determine goal achievement. Figure 2 illustrates the concept of allowable emissions in the target year for a base year emissions goal. The standard provides guidance and equations for calculating allowable emissions for each of the four goal types.

5.5 Assess progress during the goal period

During the goal period, users should regularly assess and report progress. The standard provides guidance on how to calculate the change in emissions between the beginning of the goal period and the reporting year. This information helps decision makers and stakeholders understand trends in emissions during the goal period and progress achieved toward the goal. The standard also enables users to calculate the additional emission reductions needed to achieve the goal, which is critical for designing mitigation strategies that deliver sufficient reductions. Lastly, the standard provides guidance for assessing why emissions have changed since the start of the goal period. This information helps determine whether changes result from mitigation policies or other factors, such as changes in economic activity. The resulting information can inform changes to an existing goal as well as inform the design of future mitigation goals and policies. See Figure 3 for an illustration of assessing progress.

Figure 2 Allowable emissions in the target year for a base year emissions goal



5.6 Assess goal achievement at the end of the goal period

At the end of the goal period, governments and stakeholders need to know whether or not the goal has been achieved. To determine goal achievement, allowable emissions are compared with accountable emissions. Accountable emissions include target year emissions—emissions and removals within the goal boundary in the target year—as well as sales and retirement of transferable emissions units, if applicable, and change in net land sector emissions, depending on how the land sector is treated in the goal design (see Figure 4).

If accountable emissions are equal to or less than allowable emissions, then the goal has been achieved. The standard provides guidance and equations for accountable emissions, as well as for ensuring that the double counting of transferable emissions units is prevented and the environmental integrity of the goal is upheld.

5.7 Verify results

After carrying out a goal assessment, users may choose to verify the results of the analysis. While verification is not a requirement, it can increase user and stakeholder confidence in the results of the report.

5.8 Report results

Publicly reporting the results of the goal assessment is the final step of the standard and is critical for ensuring transparent GHG accounting. The standard provides a list of information to include in the goal assessment report, including information about goal design, methodological choices, and accounting methods.

Figure 3 Assessing progress for a base year emissions goal

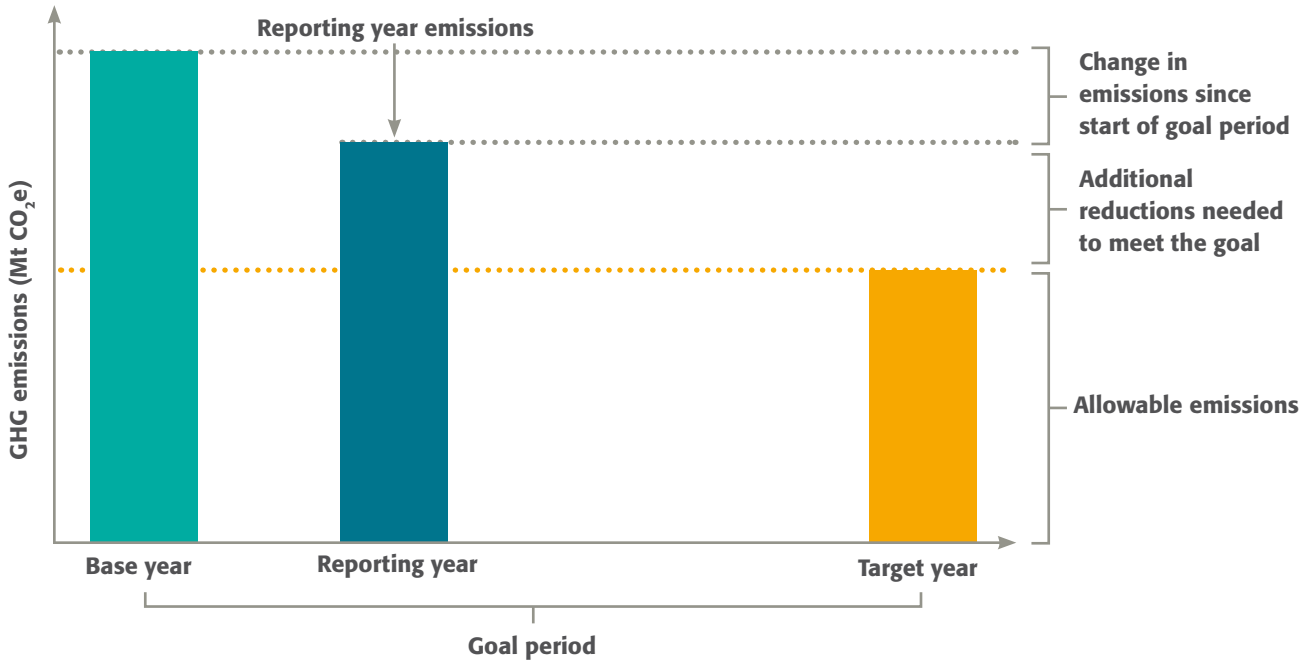
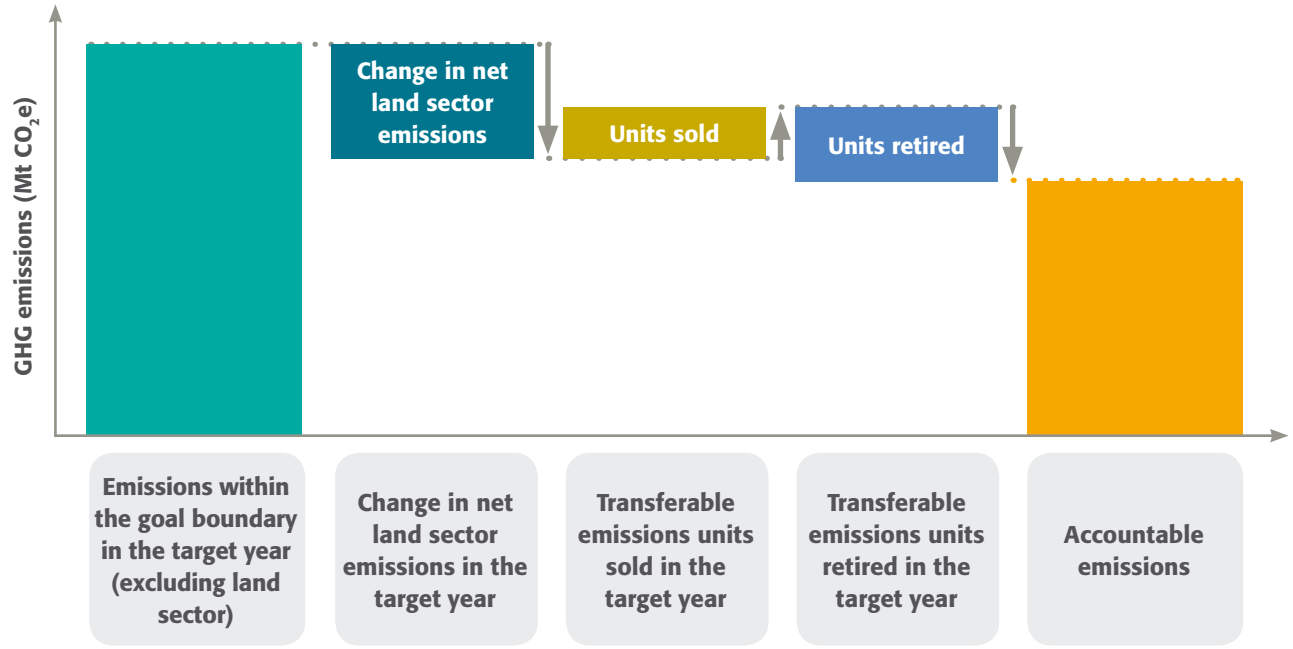


Figure 4 Calculating accountable emissions



Endnote

1 This standard would be superseded by any international or domestic accounting and reporting requirements.

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About the World Resources Institute

WRI is a global research organization that works closely with leaders to turn big ideas into action to sustain a healthy environment—the foundation of economic opportunity and human well-being.

Our Challenge

Natural resources are at the foundation of economic opportunity and human well-being. But today, we are depleting Earth's resources at rates that are not sustainable, endangering economies and people's lives. People depend on clean water, fertile land, healthy forests, and a stable climate. Livable cities and clean energy are essential for a sustainable planet. We must address these urgent, global challenges this decade.

Our Vision

We envision an equitable and prosperous planet driven by the wise management of natural resources. We aspire to create a world where the actions of government, business, and communities combine to eliminate poverty and sustain the natural environment for all people.

GREENHOUSE GAS PROTOCOL

The Greenhouse Gas Protocol provides the foundation for sustainable climate strategies. GHG Protocol standards are the most widely used accounting tools to measure, manage and report greenhouse gas emissions.