

# Guidance on Setting a GHG Reduction Goal

**E**PA offers flexibility in goal setting because every company has a unique set of GHG emissions sources and reduction opportunities. Once Partners have completed their base year GHG inventory, EPA works closely with Partners to set an individualized GHG reduction goal. This goal must be:

- *Corporate-wide (including at least all U.S. operations)*
- *Based on the most recent base year for which data are available*
- *Achieved over 5 to 10 years*
- *Expressed as an absolute GHG reduction or as a decrease in GHG intensity*
- *Aggressive compared to the projected GHG performance for the Partner's sector*

## Goal Evaluation Considerations

Partners represent a diverse group of companies, including energy producers, manufacturers, and service-oriented businesses. What EPA considers an aggressive goal may vary for different sectors and for different companies depending on a variety of factors:

- **Sector Issues.** *Historically, GHG intensity tends to decrease over time in most sectors as equipment is replaced with newer, more efficient technology. This trend can be rapid in sectors where capital stock turns over quickly, and much slower in traditional*

*manufacturing sectors. The rate of intensity improvement can also be affected by the growth rate of the sector.*

- **Company Issues.** *Partners within the same sector can have different GHG emissions sources and a wide range of reduction opportunities. In addition, some Partners have undertaken GHG reduction activities prior to joining Climate Leaders. These actions are taken into consideration when evaluating a Partner's proposed goal.*

## Goal Evaluation Methodology

EPA individually evaluates each proposed GHG reduction goal through the following process:

- *The goal is evaluated against a projected benchmark GHG emissions improvement rate for each Partner's sector. In cases where a Partner operates in multiple sectors, a weighted average is used. The benchmark is a combination of projected average energy intensity improvement and any projected process-related emissions intensity changes. EPA expects every goal to be markedly better than the projected benchmark performance for the Partner's sector.*
- *EPA also considers a Partner's current emissions intensity when evaluating its GHG reduction goal. By comparing the Partner's current performance to its sector, EPA recognizes that many companies have already made significant reductions in their GHG*

*emissions or GHG intensity. Companies that are currently very efficient for their sector will not be expected to commit to a reduction goal that is as aggressive as companies that are less efficient than their sector average.*

## **Defining Projected Sector Benchmarks for GHG Emissions Performance**

*The first step in evaluating a Partner's goal is to create a benchmark for comparison. EPA currently uses the following models to help develop an appropriate benchmark:*

- *For commercial and industrial companies, EPA uses both the U.S. Department of Energy's National Energy Modeling System (NEMS) and the Bureau of Labor Statistics' (BLS) forecast input/output tables for the U.S. economy to project benchmark energy intensity improvement by sector.*
- *To project GHG emissions from electric generators, EPA uses the Integrated Planning Model (IPM) developed by ICF Resources Inc.*

*In cases where emissions from industrial processes are a significant source of a Partner's inventory (such as cement or semiconductor manufacturing), EPA performs additional analysis based on sector-specific sources of process-related emissions data and projections. These data are then combined with the projected energy intensity improvement to develop a benchmark GHG emissions improvement rate for the Partner's sector.*

## **Choosing a Key Performance Indicator for Normalized Goals**

*EPA allows goals to be expressed as an absolute GHG emissions reduction or as a decrease in GHG intensity. Absolute GHG reduction goals compare total GHG emissions in the goal year to those in a base year. GHG intensity goals allow a company to account for increases or decreases in production over time. The ratio of GHG emissions over an appropriate normalizing factor becomes the Partner's key performance indicator to measure GHG intensity. Normalizing factors are typically measured in physical units (e.g., tons of steel) or economic units (e.g., value of shipments). Due to the large variability in economic metrics, Climate Leaders generally prefers metrics based on physical values, which track year-to-year changes in emissions intensity more accurately. However, for companies that produce a wide diversity of products, using an economic metric might be more appropriate. EPA offers technical assistance to help Partners choose a suitable key performance indicator.*

## **Reporting and Goal Tracking**

*Climate Leaders Partners report annual GHG inventory data to EPA to document progress towards their reduction goal. Partners with a worldwide goal report domestic and international emissions separately as well as reporting a worldwide total. This system allows EPA to ensure that Partners are demonstrating leadership through achieving a portion of their GHG reductions in the United States. Once Partners meet their initial Climate Leaders goal, EPA will work with them to set a new reduction goal.*

## Absolute and Intensity Targets

Partners may select either an absolute emissions target or an intensity target. Absolute targets track reductions in the total emissions of an

organization. Intensity targets track reductions per unit of output of the organization, and may be applicable where growth of the organization may offset efficiency improvements or other reductions. Table 11-1 compares the two types of targets.

**Table 11-1: Comparison of Absolute and Intensity Targets**

Parameter	Absolute Target	Intensity Target
Reduction Type	Specified quantity of reductions to the atmosphere.	Reductions per a business metric.  No guarantee that there will be less GHG emissions to the atmosphere – absolute emissions may rise even if intensity goes down (and output increases).
Metric Definition	Not applicable	May be difficult to define a single common business metric for companies with diverse operations.  If a monetary variable is used for the business metric (i.e., dollar of revenue or sales), it <i>should</i> be adjusted for changes in product prices, product mix, and inflation – adds complexity to the tracking process.
Confidentiality	Not applicable—no business metric assigned to target	May be an issue—data on the business metric needs to be reported
Effects from Base Year Recalculations	Significant structural changes add complexity to tracking progress over time	GHG changes due to production fluctuations are usually not required
Relation to Organic Growth or Decline	Recognizes a company for reducing GHGs by decreasing production or output	Unrelated
Comparisons of GHG Intensity/Efficiency	Does not allow for comparison of GHG performance between companies, if they choose to do so	Comparability of GHG performance between companies may be increased

## Identifying GHG Reduction Opportunities

Partners may find it easiest to begin the process of meeting a goal by examining their Climate Leaders GHG inventory and developing a list of emission reduction activities. Figure 11-1 illustrates the broad palette of emission reduction choices individual companies and facilities might consider. Once the Partner has assembled an array of emission reduction opportunities, the firm should consider establishing evaluation criteria to prioritize the reduction activities. Such evaluation criteria might include:

- Cost to implement
- Collateral benefits to the firm, the environment, and the community
- Net Return on Investment
- Time to implement

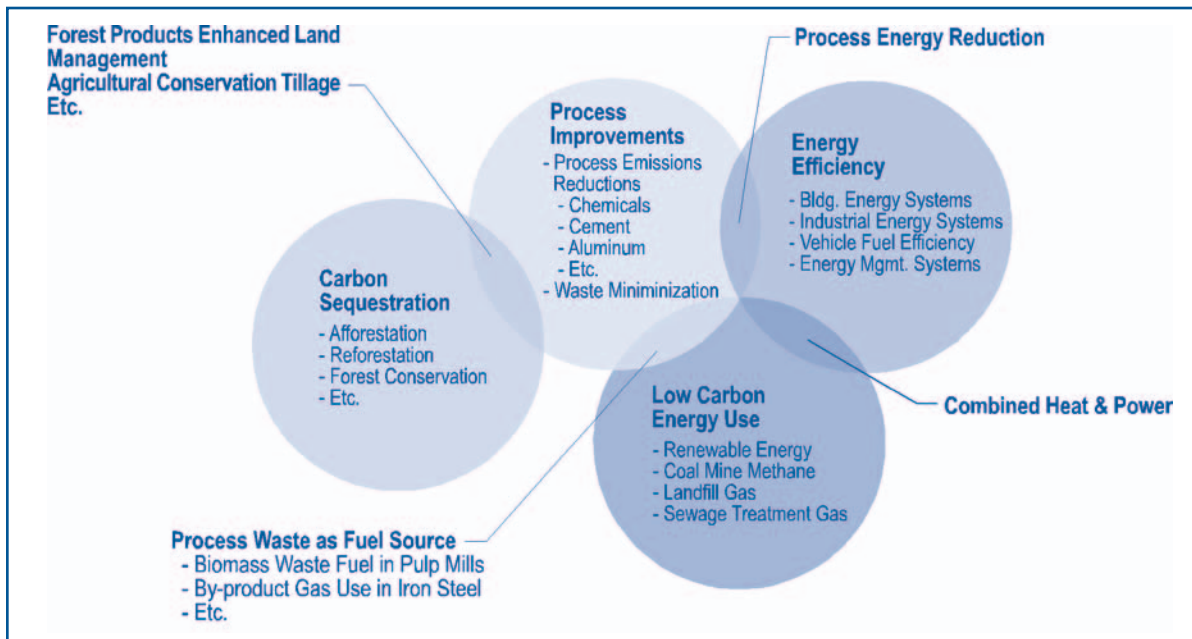
- Contribution to core business
- Contribution to brand image
- Obstacles to implementation

With an evaluation protocol in place, the company can then best evaluate top preferences for emission reduction activities over the 5 to 10 year time horizon and construct a defensible, credible, achievable GHG reduction goal.

In addition to considering emission reduction opportunities within a company’s direct and indirect core emissions inventory and upstream/downstream optional emissions inventory, companies may also use emission offset projects towards completion of their GHG reduction goal.

As depicted in Figure 11-1, emission reduction (or sequestration) opportunities generally fall into four main categories:

**Figure 11-1: Opportunities for GHG Reduction**



- *Energy Efficiency*
- *Low Carbon or No Carbon Energy Use*
- *Process Optimization*
- *Carbon Sequestration*

*The emissions associated with the generation of imported electricity, heat, or steam are a special case of indirect emissions. For many companies, electricity usage represents one of the most significant opportunities to reduce GHG emissions. Companies can reduce their use of electricity and/or use it more efficiently by investing in energy efficient technologies. Additionally, emerging green power markets enable some companies to switch to less GHG-intensive electricity suppliers. Companies can also install an efficient co-generation plant onsite to replace the import of more GHG-intensive electricity from the grid. Incorporating indirect emissions from electricity, heat, and steam usage into the core emissions reporting facilitates the transparent accounting of such choices.*

*Process optimization can result in directly reduced GHG and conventional pollutant emissions. In addition to these direct emission reductions, indirect emission reductions may occur from improvements in energy efficiency, resource efficiency, waste minimization, and emissions reductions.*

*Carbon can be sequestered in sinks including soil, woody debris, living plants, and even wood products. Challenges inherent in inventorying sequestered carbon include scientific uncertainty in measurement accuracy and precision, and questions about permanence, duration, and leakage.*

*No specific process for constructing a reduction goal is required by the Climate Leaders program. However, Table 11-2 lays out a recommended strategy and describes the typical steps to efficiently create a credible, achievable goal.*

**Table 11-2: Steps in Setting and Tracking Performance Toward a GHG Target**

<b>Obtain senior management commitment.</b>
Implementing a reduction target is likely to necessitate changes in behavior and decision-making throughout the organization, and requires establishing an internal accountability and incentive system, as well as adequate resources.
<b>Decide on the target type (absolute vs. intensity).</b>
An absolute target is expressed in terms of a reduction over time in a specified quantity of GHG emissions to the atmosphere (i.e., tons of CO <sub>2</sub> -equivalents), whereas an intensity target is expressed as a reduction in the ratio of GHG emissions relative to another business metric (i.e., tons of CO <sub>2</sub> -equivalents per ton of product, per kWh, ton-mileage, etc) or some other metric such as sales, revenues, or office space.
<b>Decide on the target boundary.</b>
<i>Under the Climate Leaders program, targets must be for reduction of CO<sub>2</sub>-equivalents on a absolute or intensity basis, for a minimum of core direct and indirect emissions from U.S. operations.</i>
<b>Choose the target base year.</b>
<i>Under the Climate Leaders program, for the purpose of assessing a company's performance against its emission reduction goal, the most current year that a Partner has data available should be its base year (fixed base year).</i>
<b>Define the target time period.</b>
<i>Under the Climate Leaders program, the goals should be based on prospective reductions beginning with the base year and looking 5-10 years into the future.</i>
<b>Decide on the use of project offsets or credits.</b>
A GHG target can be met from internal reductions at sources included in the target boundary, or through additionally using offsets that are generated from GHG reduction projects that reduce emissions at sources outside the target boundary. It is important to ensure credibility of the offsets (see Chapter 8), specify the origin and nature of the offsets when reporting, as well as to check that the offsets have not also been counted toward another organization's target (i.e., via contract).
<b>Establish a target double counting policy.</b>
For example, the policy must ensure that a GHG offset is not counted toward the target by both the selling and purchasing organizations. For an internal reduction project, the missions need to be added back to the inventory if the reductions are subsequently "sold" as an offset to another company.
<b>Decide on the target level.</b>
In addition to the guidelines and requirements from Steps 1 through 7, considerations include understanding key drivers affecting GHG emissions, developing reductions strategies, looking at the future of the company, factoring relevant growth factors, evaluating existing environmental plans or energy plans that will affect GHG emissions, and benchmarking GHG emissions with similar organizations.
<b>Track and report progress against the target.</b>
<i>EPA Annual GHG Inventory Summary and Goal Tracking Form tracks progress against the target.</i>