11 Setting a GHG Target

Setting targets is a routine business practice that helps ensure that an issue is kept on senior management's "radar screen" and factored into relevant decisions about what products and services to provide and what materials and technologies to use. Often, a corporate GHG emission reduction target is the logical follow-up to developing a GHG inventory.

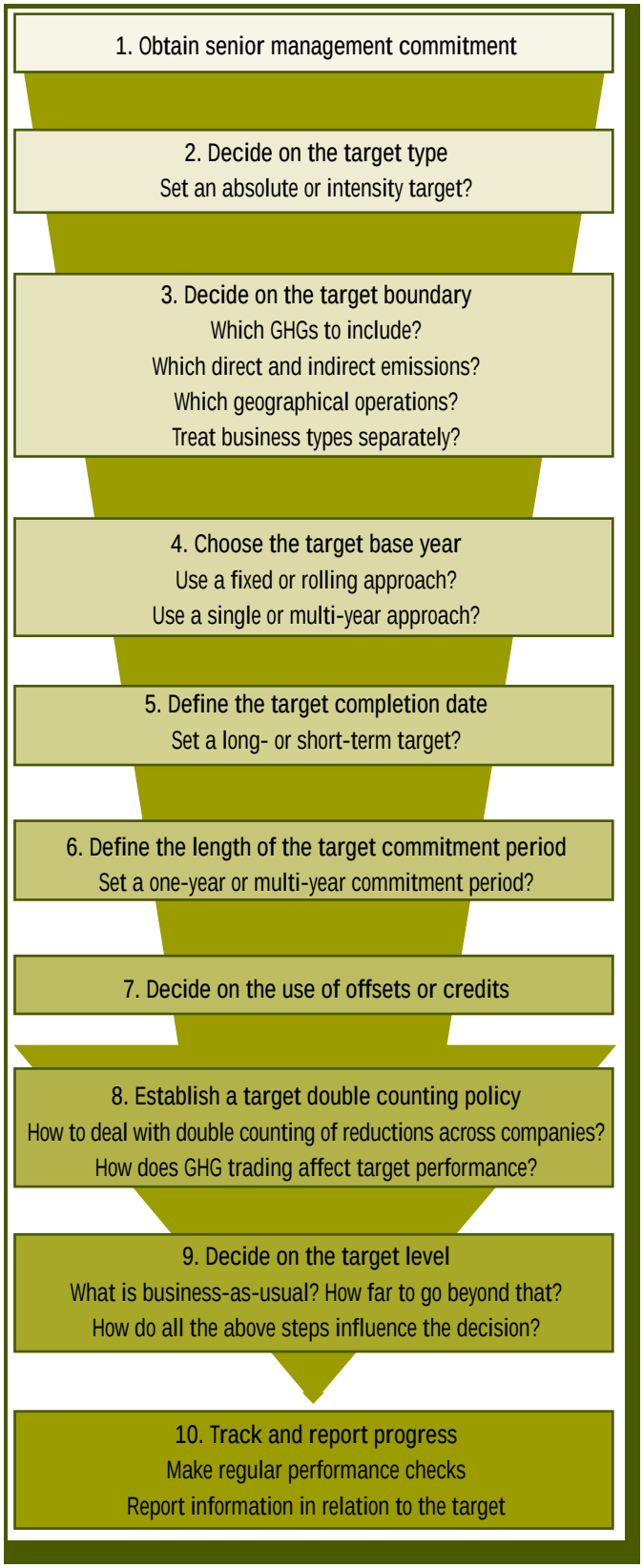
This chapter provides guidance on the process of setting and reporting on a corporate GHG target. Although the chapter focuses on emissions, many of the considerations equally apply to GHG sequestration (see Appendix B). It is not the purpose of this chapter to prescribe what a company's target should be, rather the focus is on the steps involved, the choices to be made, and the implications of those choices.

Why Set a GHG Target?

Any robust business strategy requires setting targets for revenues, sales, and other core business indicators, as well as tracking performance against those targets. Likewise, effective GHG management involves setting a GHG target. As companies develop strategies to reduce the GHG emissions of their products and operations, corporate-wide GHG targets are often key elements of these efforts, even if some parts of the company are or will be subject to mandatory GHG limits. Common drivers for setting a GHG target include:

- MINIMIZING AND MANAGING GHG RISKS
  While developing a GHG inventory is an important step towards identifying GHG risks and opportunities, a GHG target is a planning tool that can actually drive GHG reductions. A GHG target will help raise internal awareness about the risks and opportunities presented by climate change and ensure the issue is on the business agenda. This can serve to minimize and more effectively manage the business risks associated with climate change.
- ACHIEVING COST SAVINGS AND STIMULATING INNOVATION
  Implementing a GHG target can result in cost savings by driving improvements in process innovation and resource efficiency. Targets that apply to products can drive R&D, which in turn creates products and services that can increase market share and reduce emissions associated with the use of products.
- PREPARING FOR FUTURE REGULATIONS
  Internal accountability and incentive mechanisms that are established to support a target's implementation can also equip companies to respond more effectively to future GHG regulations. For example, some companies have found that experimenting with internal GHG trading programs has allowed them to better understand the possible impacts of future trading programs on the company.

FIGURE 12. Steps in setting a GHG target



- DEMONSTRATING LEADERSHIP AND CORPORATE RESPONSIBILITY
  With the emergence of GHG regulations in many parts of the world, as well as growing concern about the effects of climate change, a commitment such as setting a public corporate GHG target demonstrates leadership and corporate responsibility. This can improve a company's standing with customers, employees, investors, business partners, and the public, and enhance brand reputation.
- PARTICIPATING IN VOLUNTARY PROGRAMS
  A growing number of voluntary GHG programs are emerging to encourage and assist companies in setting, implementing, and tracking progress toward GHG targets. Participation in voluntary programs can result in public recognition, may facilitate recognition of early action by future regulations, and enhance a company's GHG accounting and reporting capacity and understanding.

Steps in Setting a Target

Setting a GHG target involves making choices among various strategies for defining and achieving a GHG reduction. The business goals, any relevant policy context, and stakeholder discussions should inform these choices.

The following sections outline the ten steps involved. Although presented sequentially, in practice target setting involves cycling back and forth between the steps. It is assumed that the company has developed a GHG inventory before implementing these steps. Figure 12 summarizes the steps.

1. Obtain senior management commitment

As with any corporate wide target, senior management buy-in and commitment particularly at the board/CEO level is a prerequisite for a successful GHG reduction program. Implementing a reduction target is likely to necessitate changes in behavior and decision-making throughout the organization. It also requires establishing an internal accountability and incentive system and providing adequate resources to achieve the target. This will be difficult, if not impossible, without senior management commitment.

BOX 4. Comparing absolute and intensity targets

ABSOLUTE TARGETS reduce absolute emissions over time (Example: reduce CO_2 by 25 percent below 1994 levels by 2010)

Advantages

- Designed to achieve a reduction in a specified quantity of GHGs emitted to the atmosphere
- Environmentally robust as it entails a commitment to reduce GHGs by a specified amount
- Transparently addresses potential stakeholder concerns about the need to manage absolute emissions

Disadvantages

- Target base year recalculations for significant structural changes to the organization add complexity to tracking progress over time
- Does not allow comparisons of GHG intensity/efficiency
- Recognizes a company for reducing GHGs by decreasing production or output (organic decline, see chapter 5)
- May be difficult to achieve if the company grows unexpectedly and growth is linked to GHG emissions

INTENSITY TARGETS reduce the ratio of emissions relative to a business metric over time (Example: reduce CO_2 by 12 percent per tonne of clinker between 2000 and 2008)

Advantages

- Reflects GHG performance improvements independent of organic growth or decline
- Target base year recalculations for structural changes are usually not required (see step 4)
- May increase the comparability of GHG performance among companies

Disadvantages

- No guarantee that GHG emissions to the atmosphere will be reduced—absolute emissions may rise even if intensity goes down and output increases
- Companies with diverse operations may find it difficult to define a single common business metric
- If a monetary variable is used for the business metric, such as dollar of revenue or sales, it must be recalculated for changes in product prices and product mix, as well as inflation, adding complexity to the tracking process

Royal Dutch/Shell: The target cascade

The Royal Dutch/Shell Group, a global energy corporation, discovered when implementing its voluntary GHG reduction target that one of the biggest challenges was to cascade the target down to the actions of all employees who influence target performance. It was concluded that successful implementation required different targets at different levels of the company. This is because each of the components that underlie absolute GHG emissions is influenced by decision-making at various management levels (from the corporate level down to individual businesses and facilities).

Absolute GHG emissions at a plant (tonnes of CO_2-e.) = Function (MP x BPE x PE)

MP — Quantity of product manufactured by a facility. This is fundamental to the need to grow and is therefore controlled at corporate level. GHG emissions are typically not managed by limiting this component.

BPE — Best process energy use per tonne. The optimal (or theoretical) energy consumed (translates to emissions) by a particular design of plant. The type of plant built is a business-level decision. Significant capital decisions may be involved in building a new plant incorporating new technology. For existing plants, BPE is improved by significant design change and retrofitting. This could also involve large capital expenditure.

PE — Plant efficiency index. An index that indicates how the plant is actually performing relative to BPE. PE is a result of day-to-day decisions taken by plant operators and technicians. It is improved also by the Shell Global Solutions EnergiseTM programme, which typically requires low capital expenditure to implement.

Royal Dutch/Shell found that while this model is probably an oversimplification when it comes to exploration and production facilities, it is suitable for manufacturing facilities (e.g., refineries and chemical plants). It illustrates that an absolute target could only be set at the corporate level, while lower levels require intensity or efficiency targets.

TYPE OF TARGET			ACTIONS THAT REDUCE EMISSIONS	LEVEL OF DECISION-MAKING (IN GENERAL AND ON TARGET)
Reduce absolute emissions			See below	Corporate
	MP: not normally constrained		--------	All levels depending on scale (e.g. new venture, new plant, operational)
	Reduce GHG intensity		See below	Business in consultation with corporate
		Improve BPE (efficiency)	Building new plants with new technology	Business
			Retrofitting and changing design of plants	Business
		Improve PE (efficiency)	Increase plant operating efficiency	Facility, supported by Shell Global Solutions Energise™

2. Decide on the target type

There are two broad types of GHG targets: absolute and intensity-based. An absolute target is usually expressed in terms of a reduction over time in a specified quantity of GHG emissions to the atmosphere, the unit typically being tonnes of CO_2-e. An intensity target is usually expressed as a reduction in the ratio of GHG emissions relative to another business metric.[1] The comparative metric should be carefully selected. It can be the output of the company (e.g. tonne CO_2-e per tonne product, per kWh, per tonne mileage) or some other metric such as sales, revenues or office space. To facilitate transparency, companies using an intensity target should also report the absolute emissions from sources covered by the target.

Box 4 summarizes the advantages and disadvantages of each type of target. Some companies have both an absolute and an intensity target. Box 5 provides examples of corporate GHG targets. The Royal Dutch/Shell case study illustrates how a corporate wide absolute target can be implemented by formulating a combination of intensity targets at lower levels of decision-making within the company.

3. Decide on the target boundary

The target boundary defines which GHGs, geographic operations, sources, and activities are covered by the target. The target and inventory boundary can be identical, or

the target may address a specified subset of the sources included in the company inventory. The quality of the GHG inventory should be a key factor informing this choice. The questions to be addressed in this step include the following:

- WHICH GHGS? Targets usually include one or more of the six major GHGs covered by the Kyoto Protocol. For companies with significant non-CO_2 GHG sources it usually makes sense to include these to increase the range of reduction opportunities. However, practical monitoring limitations may apply to smaller sources.
- WHICH GEOGRAPHICAL OPERATIONS? Only country or regional operations with reliable GHG inventory data should be included in the target. For companies with global operations, it makes sense to limit the target's geographical scope until a robust and reliable inventory has been developed for all operations. Companies that participate in GHG programs involving trading[2] will need to decide whether or not to include the emissions sources covered in the trading program in their corporate target. If common sources are included, i.e., if there is overlap in sources covered between the corporate target and the trading program, companies should consider how they will address any double counting resulting from the trading of GHG reductions in the trading program (see step 8).
- WHICH DIRECT AND INDIRECT EMISSION SOURCES? Including indirect GHG emissions in a target will facilitate more cost-effective reductions by increasing the reduction opportunities available. However, indirect emissions are generally harder to measure accurately and verify than direct emissions although some categories, such as scope 2 emissions from purchased electricity, may be amenable to accurate measurement and verification. Including indirect emissions can raise issues with regard to ownership and double counting of reductions, as indirect emissions are by definition someone else's direct emissions (see step 8).
- SEPARATE TARGETS FOR DIFFERENT TYPES OF BUSINESSES? For companies with diverse operations it may make more sense to define separate GHG targets for different core businesses, especially when using an intensity target, where the most meaningful business metric for defining the target varies across business units (e.g., GHGs per tonne of cement produced or barrel of oil refined).

BOX 5. Selected corporate GHG targets

ABSOLUTE TARGETS

- **ABB** Reduce GHGs by 1 percent each year from 1998 through 2005
- **Alcoa** Reduce GHGs by 25 percent from 1990 levels by 2010, and 50 percent from 1990 levels over same period, if inert anode technology succeeds
- **BP** Hold net GHGs stable at 1990 levels through 2012
- **Dupont** Reduce GHGs by 65 percent from 1990 levels by 2010
- **Entergy** Stabilize CO_2 from U.S. generating facilities at 2000 levels through 2005
- **Ford** Reduce CO_2 by 4 percent over 2003-2006 timeframe based upon average 1998-2001 baseline as part of Chicago Climate Exchange
- **Intel** Reduce PFCs by 10 percent from 1995 levels by 2010
- **Johnson & Johnson** Reduce GHGs by 7 percent from 1990 levels by 2010, with interim goal of 4 percent below 1990 levels by 2005
- **Polaroid** Reduce CO_2 emissions 20 percent below its 1994 emissions by year-end 2005; 25 percent by 2010
- **Royal Dutch/Shell** Manage GHG emissions so that they are still 5 percent or more below the 1990 baseline by 2010, even while growing the business
- **Transalta** Reduce GHGs to 1990 levels by 2000. Achieve zero net GHGs from Canadian operations by 2024

INTENSITY TARGETS

- **Holcim Ltd.** Reduce by the year 2010 the Group average specific[3] net CO_2 emissions by 20 percent from the reference year 1990
- **Kansai Electric Power Company** Reduce CO_2 emissions per kWh sold in fiscal 2010 to approx. 0.34 kg-CO_2/kWh
- **Miller Brewing Company** Reduce GHGs by 18 percent per barrel of production from 2001 to 2006
- **National Renewable Energy Laboratory** Reduce GHGs by 10 percent per square foot from 2000 to 2005

COMBINED ABSOLUTE & INTENSITY TARGETS

- **SC Johnson** GHG emissions intensity reduction of 23 percent by 2005, which represents an absolute or actual GHG reduction of 8 percent
- **Lafarge** Reduce absolute gross CO_2 emissions in Annex I countries 10 percent below 1990 levels by the year 2010. Reduce worldwide average specific net CO_2 emissions 20 percent below 1990 levels by the year 2010[3]

4. Choose the target base year

For a target to be credible, it has to be transparent how target emissions are defined in relation to past emissions. Two general approaches are available: a fixed target base year or a rolling target base year.

- USING A FIXED TARGET BASE YEAR. Most GHG targets are defined as a percentage reduction in emissions below a fixed target base year (e.g., reduce CO_2 emissions 25 percent below 1994 levels by 2010). Chapter 5 describes how companies should track emissions in their inventory over time in reference to a fixed base year. Although it is possible to use different years for the inventory base year and the target base year, to streamline the inventory and target reporting process, it usually makes sense to use the same year for both. As with the inventory base year, it is important to ensure that the emissions data for the target base year are reliable and verifiable. It is possible to use a multi-year average target base year. The same considerations as described for multi-year average base years in chapter 5 apply.

  Chapter 5 provides standards on when and how to recalculate base year emissions in order to ensure like-with-like comparisons over time when structural changes (e.g., acquisitions/divestitures) or changes in measurement and calculation methodologies alter the emissions profile over time. In most cases, this will also be an appropriate approach for recalculating data for a fixed target base year.

- USING A ROLLING TARGET BASE YEAR. Companies may consider using a rolling target base year if obtaining and maintaining reliable and verifiable data for a fixed target base year is likely to be challenging (for example, due to frequent acquisitions). With a rolling target base year, the base year rolls forward at regular time intervals, usually one year, so that emissions are always compared against the previous year.[4] However, emission reductions can still be collectively

TABLE 5. Comparing targets with rolling and fixed base years

	FIXED TARGET BASE YEAR	ROLLING TARGET BASE YEAR
How might the target be stated?	A target might take the form "we will emit X% less in year B than in year A"	A target might take the form of "over the next X years we will reduce emissions every year by Y% compared to the previous year"[5]
What is the target base year?	A fixed reference year in the past	The previous year
How far back is like-with-like comparison possible?	The time series of absolute emissions will compare like with like	If there have been significant structural changes the time series of absolute emissions will not compare like with like over more than two years at a time
What is the basis for comparing emissions between the target base year and completion year? (see also Figure 14)	The comparison over time is based on what is owned/controlled by the company in the target completion year.	The comparison over time is based on what was owned/controlled by the company in the years the information was reported[6]
How far back are recalculations made?	Emissions are recalculated for all years back to the fixed target base year	Emissions are recalculated only for the year prior to the structural change, or ex-post for the year of the structural change which then becomes the base year.
How reliable are the target base year emissions?	If a company with a target acquires a company that did not have reliable GHG data in the target base year; back-casting of emissions becomes necessary, reducing the reliability of the base year	Data from an acquired company's GHG emissions are only necessary for the year before the acquisition (or even only from the acquisition onwards), reducing or eliminating the need for back-casting
When are recalculations made?	The circumstances which trigger recalculations for structural changes etc. (see chapter 5) are the same under both approaches	

stated over several years. An example would be "from 2001 through 2012, emissions will be reduced by one percent every year, compared to the previous year." When structural or methodological changes occur, recalculations only need to be made to the previous year.[7] As a result, like-with-like comparisons of emissions in the "target starting year" (2001 in the example) and "target completion year" (2012) cannot be made because emissions are not recalculated for all years back to the target starting year.

The definition of what triggers a base-year emissions recalculation is the same as under the fixed base year approach. The difference lies in how far back emissions are recalculated. Table 5 compares targets using the rolling and fixed base year approaches while Figure 14 illustrates one of the key differences.

RECALCULATIONS UNDER INTENSITY TARGETS

While the standard in chapter 5 applies to absolute inventory emissions of companies using intensity targets, recalculations for structural changes for the purposes of the target are not usually needed unless the structural change results in a significant change in the GHG intensity. However, if recalculations for structural changes are made for the purposes of the target, they should be made for both the absolute emissions and the business metric. If the target business metric becomes irrelevant through a structural change, a reformulation of the target might be needed (e.g., when a company refocuses on a different industry but had used an industry-specific business metric before).

5. Define the target completion date

The target completion date determines whether the target is relatively short- or long-term. Long-term targets (e.g., with a completion year ten years from the time the target is set) facilitate long-term planning for large capital investments with GHG benefits. However, they might encourage later phase-outs of less efficient equipment. Generally, long-term targets depend on uncertain future developments, which can have opportunities as well as risks, which is illustrated in Figure 13. A five-year target period may be more practical for organizations with shorter planning cycles.

6. Define the length of the commitment period

The target commitment period is the period of time during which emissions performance is actually measured against the target. It ends with the target completion date. Many companies use single-year commitment periods, whereas the Kyoto Protocol, for example, specifies a multi-year "first commitment period" of five years (2008–2012). The length of the target commitment period is an important factor in determining a company's level of commitment. Generally, the longer the target commitment period, the longer the period during which emissions performance counts towards the target.

- EXAMPLE OF A SINGLE YEAR COMMITMENT PERIOD. Company Beta has a target of reducing emissions by 10 percent compared to its target base year 2000, by the commitment year 2010. For Beta to meet its target, it is sufficient for its emissions to be, in the year 2010, no more than 90 percent of year 2000 emissions.
- EXAMPLE OF A MULTI-YEAR COMMITMENT PERIOD. Company Gamma has a target of reducing emissions by 10 percent, compared to its target base year 2000, by the commitment period 2008–2012. For Gamma to meet its target, its sum total emissions from 2008–2012 must not exceed 90 percent of year 2000 emissions times five (number of years in the

FIGURE 13. Defining the target completion date

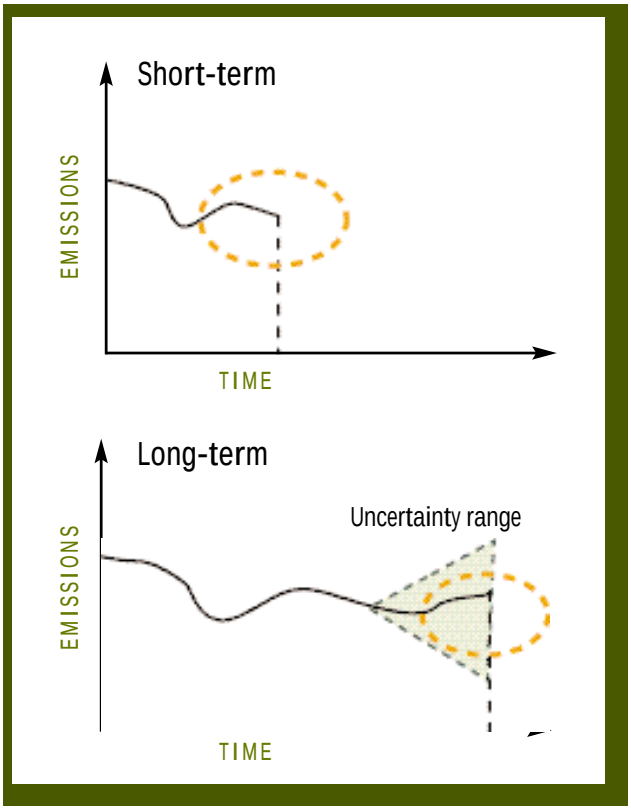
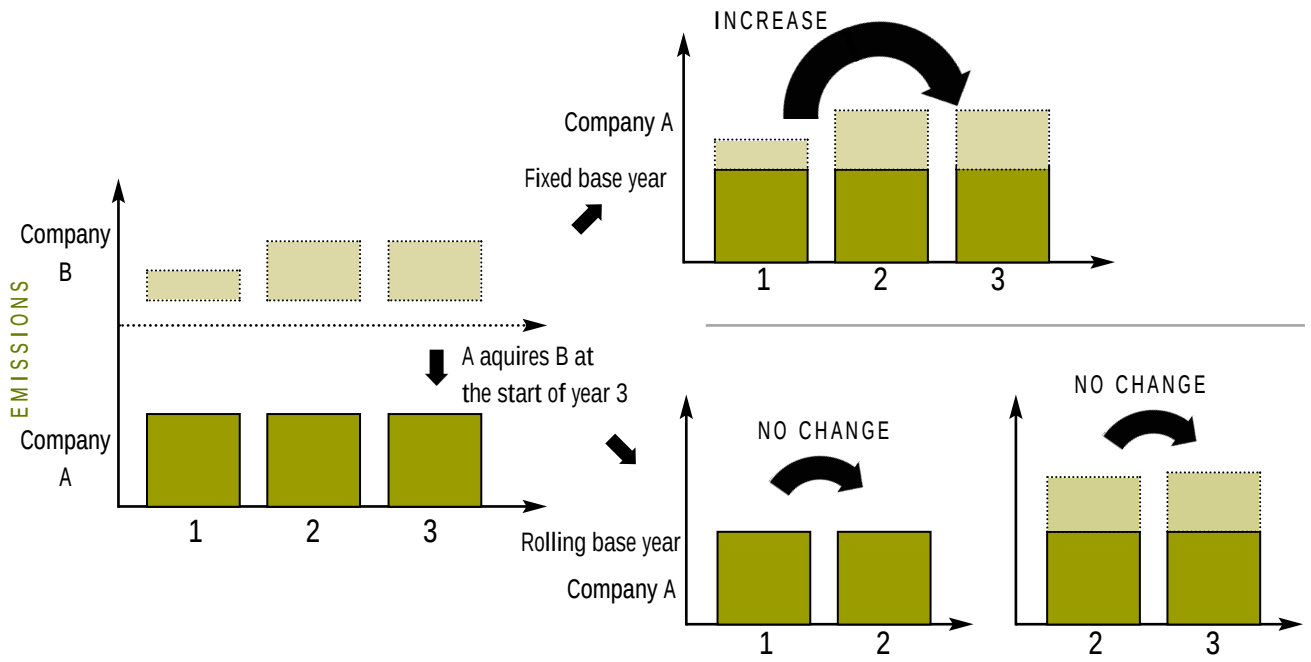


FIGURE 14. Comparing a stabilization target under the fixed and rolling target base year approach



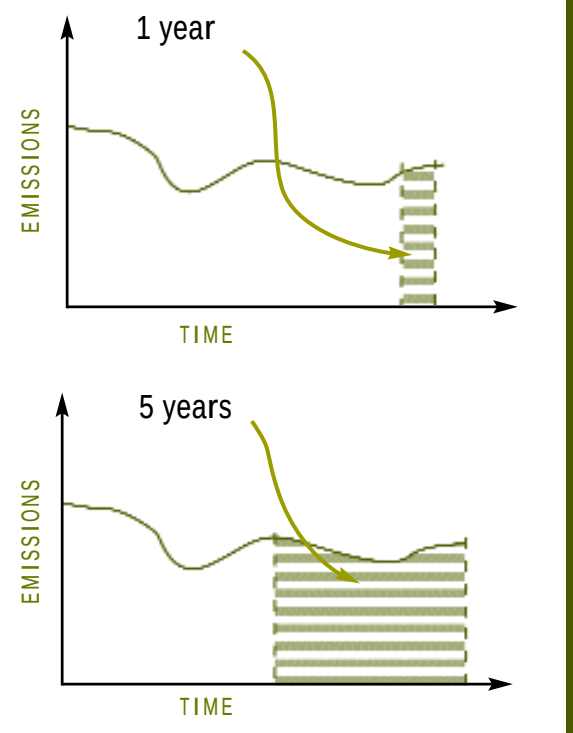
A stabilization target is one that aims to keep emissions constant over time. In this example, company A acquires company B, which has experienced organic GHG growth since the target base year (or "starting" year). Under the rolling approach, emissions growth in the acquired company (B) from year 1 to year 2 does not appear as an emissions increase in relation to the target of the acquiring company (A). Thus company A would meet its stabilization target when using the rolling approach but not when using the fixed approach. In parallel to the example in chapter 5, past GHG growth or decline in divested facilities (GHG changes before the divestment) would affect the target performance under the rolling approach, while it would not be counted under the fixed approach.

commitment period). In other words, its average emissions over those five years must not exceed 90 percent of year 2000 emissions.

Target commitment periods longer than one year can be used to mitigate the risk of unpredictable events in one particular year influencing performance against the target. Figure 15 shows that the length of the target commitment period determines how many emissions are actually relevant for target performance.

For a target using a rolling base year, the commitment period applies throughout: emission performance is continuously being measured against the target every year from when the target is set until the target completion date.

FIGURE 15. Short vs. long commitment periods



7. Decide on the use of GHG offsets or credits[8]

A GHG target can be met entirely 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 (or enhance sinks) external to the target boundary.[9] The use of offsets may be appropriate when

the cost of internal reductions is high, opportunities for reductions limited, or the company is unable to meet its target because of unexpected circumstances. When reporting on the target, it should be specified whether offsets are used and how much of the target reduction was achieved using them.

CREDIBILITY OF OFFSETS AND TRANSPARENCY

There are currently no generally accepted methodologies for quantifying GHG offsets. The uncertainties that surround GHG project accounting make it difficult to establish that an offset is equivalent in magnitude to the internal emissions it is offsetting.[10] This is why companies should always report their own internal emissions in separate accounts from offsets used to meet the target, rather than providing a net figure (see step 10). It is also important to carefully assess the credibility of offsets used to meet a target and to specify the origin and nature of the offsets when reporting. Information needed includes:

- the type of project
- geographic and organizational origin
- how offsets have been quantified
- whether they have been recognized by external programs (CDM, JI, etc.)

One important way to ensure the credibility of offsets is to demonstrate that the quantification methodology adequately addresses all of the key project accounting challenges in chapter 8. Taking these challenges into account, the forthcoming *GHG Protocol Project Quantification Standard* aims to improve the consistency, credibility, and rigor of project accounting.

Additionally, it is important to check that offsets have not also been counted towards another organization's GHG target. This might involve a contract between the buyer and seller that transfers ownership of the offset. Step 8 provides more information on accounting for GHG trades in relation to a corporate target, including establishing a policy on double counting.

OFFSETS AND INTENSITY TARGETS

When using offsets under intensity targets, all the above considerations apply. In order to determine compliance with the target, the offsets can be subtracted from the figure used for absolute emissions (the numerator); the resulting difference is then divided by the corresponding metric. It is important, however, that absolute emissions are still reported separately both from offsets and the business metric (see step 9 below).

8. Establish a target double counting policy

This step addresses double counting of GHG reductions and offsets, as well as allowances issued by external trading programs. It applies only to companies that engage in trading (sale or purchase) of GHG offsets or whose corporate target boundaries interface with other companies' targets or external programs.

Given that there is currently no consensus on how such double counting issues should be addressed, companies should develop their own "Target Double Counting Policy." This should specify how reductions and trades related to other targets and programs will be reconciled with their corporate target, and accordingly which types of double counting situations are regarded as relevant. Listed here are some examples of double counting that might need to be addressed in the policy.

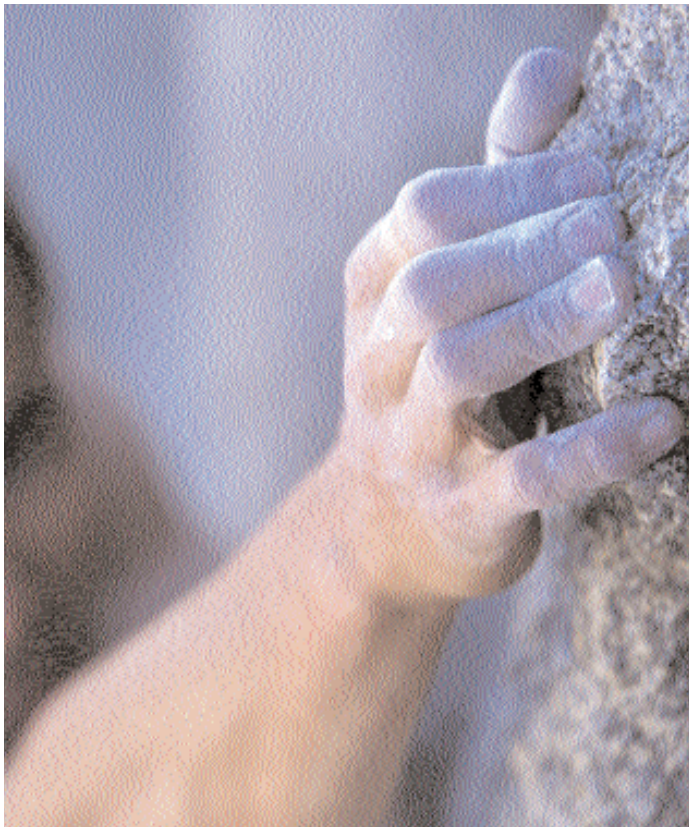
- DOUBLE COUNTING OF OFFSETS. This can occur when a GHG offset is counted towards the target by both the selling and purchasing organizations. For example, company A undertakes an internal reduction project that reduces GHGs at sources included in its own target. Company A then sells this project reduction to company B to use as an offset towards its target, while still counting it toward its own target. In this case, reductions are counted by two different organizations against targets that cover different emissions sources. Trading programs address this by using registries that allocate a serial number to all traded offsets or credits and ensuring the serial numbers are retired once they are used. In the absence of registries this could be addressed by a contract between seller and buyer.
- DOUBLE COUNTING DUE TO TARGET OVERLAP.[11] This can occur when sources included under a company's corporate target are also subject to limits by an external program or another company's target. Two examples:
  - Company A has a corporate target that includes GHG sources that are also regulated under a trading program. In this case, reductions at the common sources are used by company A to meet both its corporate target and the trading program target.

- Company B has a corporate target to reduce its direct emissions from the generation of electricity.[12] Company C who purchases electricity directly from company B also has a corporate target that includes indirect emissions from the purchase of electricity (scope 2). Company C undertakes energy efficiency measures to reduce its indirect emissions from the use of the electricity. These will usually show up as reductions in both companies' targets.[13]

These two examples illustrate that double counting is inherent when the GHG sources where the reductions occur are included in more than one target of the same or different organizations. Without limiting the scope of targets it may be difficult to avoid this type of double counting and it probably does not matter if the double counting is restricted to the organizations sharing the same sources in their targets (i.e., when the two targets overlap).

- DOUBLE COUNTING OF ALLOWANCES TRADED IN EXTERNAL PROGRAMS. This occurs when a corporate target overlaps with an external trading program and allowances that cover the common sources are sold in the trading program for use by another organization and reconciled with the regulatory target, but not reconciled with the corporate target. This example differs from the previous example in that double counting occurs across two targets that are not overlapping (i.e., they do not cover the same sources). This type of double counting could be avoided if the company selling the allowances reconciles the trade with its corporate target (see Holcim case study). Whatever the company decides to do in this situation, in order to maintain credibility, it should address buying and selling of allowances in trading programs in a consistent way. For example, if it decides not to reconcile allowances that it sells in a trading program with its corporate target, it should also not count any allowances of the same type that it purchases to meet its corporate target.

Ideally a company should try to avoid double counting in its corporate target if this undermines the environmental integrity of the target. Also, any prevented double counting between two organizations provides an additional incentive for one of these companies to further reduce emissions. However, in practice the avoidance of double counting can be quite challenging, particularly for companies subject to multiple external programs and when indirect GHG emissions are included in the target. Companies should therefore be transparent about their



double counting policy and state any reasons for choosing not to address some double counting situations.

The Holcim case study describes how one company has chosen to track performance towards its target and address double counting issues.

9. Decide on the target level

The decision on setting the target level should be informed by all the previous steps. Other considerations to take into account include:

- Understanding the key drivers affecting GHG emissions by examining the relationship between GHG emissions and other business metrics, such as production, square footage of manufacturing space, number of employees, sales, revenue, etc.
- Developing different reduction strategies based on the major reduction opportunities available and examining their effects on total GHG emissions. Investigate how emissions projections change with different mitigation strategies.
- Looking at the future of the company as it relates to GHG emissions.
- Factoring in relevant growth factors such as production plans, revenue or sales targets, and Return on Investment (ROI) of other criteria that drive investment strategy.

Holcim: Using a GHG balance sheet to track performance towards the target

Holcim, a global cement producer, tracks its performance in relation to its voluntary corporate target using a GHG balance sheet. This balance sheet shows, for each commitment period and for each country business, on one side the actual GHG emissions and on the other side the GHG "assets" and "instruments." These assets and instruments consist of the voluntary GHG target itself (the "voluntary cap"; in other words, the allowances that Holcim provides for itself), a regulatory target ("cap") if applicable, plus the CDM credits purchased (added) or sold (subtracted), and any regulatory emissions trading allowances purchased (added) or sold (subtracted). Thus if any country business sells CDM credits (generated at sources inside the voluntary target boundary), it is ensured that only the buying organization counts the credit (see first example of double counting in step 8).

At the end of the commitment period, every country business must demonstrate a neutral or positive balance towards Holcim's target. Those companies whose voluntary cap overlaps with a regulatory cap (e.g., in Europe) must also demonstrate a neutral or positive balance towards the regulatory cap. GHG reductions in Europe are thus reported towards both targets (see second example of double counting in step 8).

Both sides of the country business balance sheets are consolidated to group level. Credits and allowances traded within the group simply cancel out in the asset column of the consolidated corporate level GHG balance sheet. Any credits or allowances traded externally are reconciled with both the voluntary and regulatory caps at the bottom line of the asset column of the balance sheet. This ensures that any sold allowance is only counted by the buying organization (when Holcim's target and that of the buying organization do not overlap). A purchased allowance or credit is counted towards both the voluntary and regulatory targets of the European business these two targets overlap.

GHG balance sheet (All values in tonnes CO_2-e/year)	
GHG ASSETS & INSTRUMENTS	GHG EMISSIONS
Holcim (country A in Europe)	
Voluntary cap (direct emissions)	Emissions, direct, indirect + biomass
Regulatory cap (direct emissions)	
Reg. allowances purchased (+) or sold (-)	
CDM credits purchased (+) or sold (-)	
Sum of voluntary cap, reg. allowances & credits	Sum of direct emissions
Sum of regulatory cap, reg. allowances & credits	Sum of direct emissions, according to EU ETS
Holcim (country X in Latin America)	
Voluntary cap	Emissions, direct, indirect + biomass
CDM credits purchased (+) or sold (-)	
Sum of voluntary cap & credits	Sum of direct emissions
Holcim Group	
Sum of voluntary cap, reg. allowances & credits	Sum of direct emissions

- Considering whether there are any existing environmental or energy plans, capital investments, product/service changes, or targets that will affect GHG emissions. Are there plans already in place for fuel switching, on site power generation, and/or renewable energy investments that affect the future GHG trajectory?
- Benchmarking GHG emissions with similar organizations. Generally, organizations that have not previously invested in energy and other GHG reductions should be capable of meeting more aggressive reduction levels because they would have more cost-effective reduction opportunities.

10. Track and report progress

Once the target has been set, it is necessary to track performance against it in order to check compliance, and also—in order to maintain credibility—to report emissions and any external reductions in a consistent, complete and transparent manner.

- CARRY OUT REGULAR PERFORMANCE CHECKS. In order to track performance against a target, it is important to link the target to the annual GHG inventory process and make regular checks of emissions in relation to the target. Some companies use interim targets for this purpose (a target using a rolling target base year automatically includes interim targets every year).
- REPORT INFORMATION IN RELATION TO THE TARGET. Companies should include the following information when setting and reporting progress in relation to a target:

1. Description of the target
   - Provide an outline of the target boundaries chosen
   - Specify target type, target base year, target completion date, and length of commitment period
   - Specify whether offsets can be used to meet the target; if yes, specify the type and amount
   - Describe the target double counting policy
   - Specify target level.
2. Information on emissions and performance in relation to the target
   - Report emissions from sources inside the target boundary separately from any GHG trades
   - If using an intensity target, report absolute emissions from within the target boundary separately, both from any GHG trades and the business metric
   - Report GHG trades that are relevant to compliance with the target (including how many offsets were used to meet the target)
   - Report any internal project reductions sold or transferred to another organization for use as an offset
   - Report overall performance in relation to the target.

NOTES

[1] Some companies may formulate GHG efficiency targets by formulating this ratio the other way around.

[2] Examples include the U.K. ETS, the CCX, and the EU ETS.

[3] Holcim's and Lafarge's target have been formulated using the terminology of the WBCSD Cement CO_2 Protocol (WBCSD, 2001), which uses"specific" to denote emissions per tonne of cement produced.

[4] It is possible to use an interval other than one year. However, the longer the interval at which the base year rolls forward, the more this approach becomes like a fixed target base year. This discussion is based on a rolling target base year that moves forward at annual intervals.

[5] Note that simply adding the yearly emissions changes under the rolling base year yields a different result from the comparison over time made with a fixed base year, even without structural changes. In absolute terms, an X% reduction every year over 5 years (compared to the previous year) is not the same as an (X times 5) reduction in year 5 compared to year 1.

[6] Depending on which recalculation methodology is used when applying the rolling base year, the comparison over time can include emissions that occurred when the company did not own or control the emission sources. However, the inclusion of this type of information is minimized. See also the guidance document "Base year recalculation methodologies for structural changes" on the GHG Protocol website (www.ghgprotocol.org).

[7] For further details on different recalculation methodologies, see the guidance document "Base year recalculation methodologies for structural changes" on the GHG Protocol website (www.ghgprotocol.org).

[8] As noted in chapter 8, offsets can be converted to credits. Credits are thus understood to be a subset of offsets. This chapter uses the term offsets as a generic term.

[9] For the purposes of this chapter, the terms "internal" and "external" refer to whether the reductions occur at sources inside (internal) or outside (external) the target boundary.

[10] This equivalence is sometimes referred to as "fungibility." However, "fungibility" can also refer to equivalence in terms of the value in meeting a target (two fungible offsets have the same value in meeting a target, i.e., they can both be applied to the same target).

[11] Overlap here refers to a situation when two or more targets include the same sources in their target boundaries.

[12] Similarly, company A in this example could be subject to a mandatory cap on its direct emissions under a trading program and engage in trading allowances covering the common sources it shares with company B. In this case, the example in the section "Double counting of allowances traded in external programs" is more relevant.

[13] The energy efficiency measures implemented by company C may not always result in an actual reduction of company B's emissions. See chapter 8 for further details on reductions in indirect emissions.