

CHAPTER 17.

Setting targets and tracking progress

This chapter provides requirements and guidance for companies that choose to set corporate targets for land sector emissions, CO₂ removals, land use and land carbon leakage, gross CO₂ fluxes, product carbon storage, and external compensation (i.e., purchasing and retiring GHG credits) or contribution. This chapter also provides requirements and guidance for setting a base year or base period and tracking progress over time relative to that base year or period.

For companies that participate in target-setting programs that conform with and build on GHG Protocol standards (e.g., Science Based Targets initiative [SBTi]), the target-setting requirements set by those programs take precedence over the target-setting requirements in this chapter.

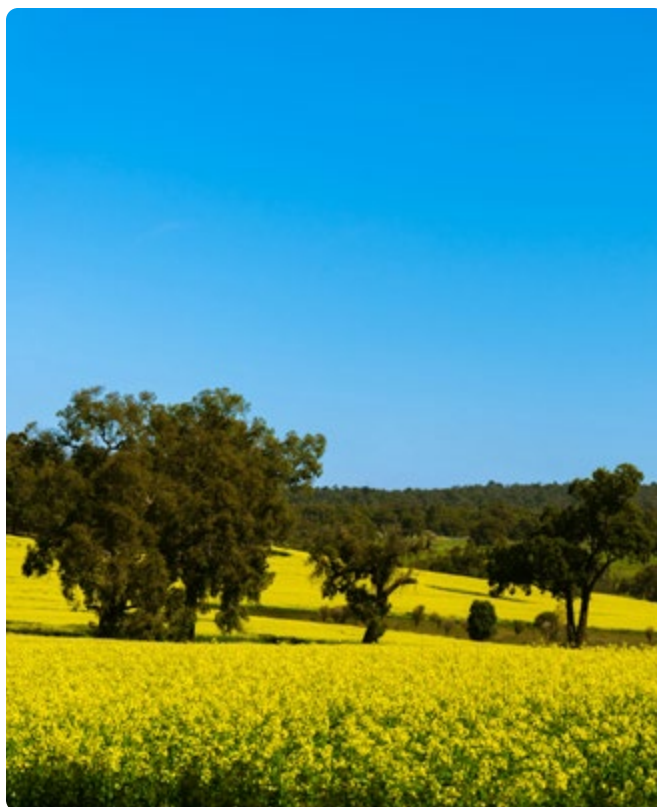
17.1 Overview

The land sector is critical for global strategies to reach net-zero emissions this century and limit global warming in line with the Paris Agreement goals. Companies that produce or source land-based products, as well as companies that undertake activities that enhance removals from the atmosphere within their operations or value chain, are encouraged to set targets in line with global climate goals and track their performance over time.

GHG programs should set more specific target-setting requirements based on the objectives and scope of their program while building on the foundation of GHG Protocol standards. This includes topics not covered by the GHG Protocol, such as setting the level of a GHG reduction or removal target. GHG programs are also needed to define rules for net targets (refer to Box 17.1 for more information).

This *Standard* contains requirements for companies that choose to set targets or track progress, including:

- Setting separate targets for emissions, removals, and product storage (Requirement 27)
- Establishing a base year or base period and a corresponding recalculation policy for tracking progress (Requirement 28)
- Reporting information about the company's targets (see "Target-setting reporting")
- The necessary reporting information to track progress over time (see "Reporting requirements for tracking progress")



17.2 Requirements

17.2.1 Accounting requirements

REQUIREMENT 27:

Target-setting approaches

If companies choose to set target(s), they **shall** set separate targets as follows:

- **Separate emissions and removals targets:** Companies **shall** set separate targets for emissions, independent of any removals, while optionally setting separate removal targets.
- **Separate product carbon storage targets:** If companies choose to set targets for product carbon storage, product carbon storage targets **shall** be separate from and not included in their emissions, removals, or net targets.¹

Reversals policy: If companies choose to set removals targets, they **shall** develop a reversals accounting policy that determines how reversals of previously reported removals are accounted towards a company's target.

Adjust values for GHG credits: If companies sell GHG credits from within their organizational boundary that are used as offsets or compensation, or if such credits are issued in the company's value chain, companies **shall** use emissions and removals values adjusted for issued credits in their target boundary when accounting for progress toward a GHG target to avoid double counting. See Chapter 18 and Requirement 30 for further requirements and guidance for preventing double counting of credits.

REQUIREMENT 28:

Setting a base year or base period and tracking progress

Companies **shall** choose a base year or base period and specify their reasons for choosing that particular year or period.

Companies **shall** calculate base year or base period emissions, removals, and other metrics.

Companies **shall** recalculate base year or base period emissions, removals, and other metrics if significant changes (defined using a significance threshold) occur, including the following:

- Structural changes to the reporting company, such as mergers, acquisitions, divestments, outsourcing, and insourcing;
- Changes in calculation methodologies or improvements in data accuracy, including changes in LUC calculation data and methods (see Requirement 10 for details); and/or
- Discovery of significant errors.

Companies **shall** develop a base year or base period recalculation policy that includes the following elements, and apply it in a consistent manner:

- Defines the significance threshold for methodological changes and structural changes to the reporting company that triggers base year recalculations.
- Clearly articulates the basis for each type of change that triggers recalculations.



17.2.2 Reporting requirements

Target-setting reporting

If companies choose to set target(s), they **shall** disclose the following information for each of their selected target(s), as described in Table 17.2 in the *Guidance*:

- Target boundary
- Target type
- Target base year or base period, with justification
- Target commitment year or period, and whether it is a single-year or multi-year target
- Target level
- Progress in reaching the target
- Additional information specific to each target type

See Table 17.2 in the *Guidance* for further reporting details for the following targets:

- Emissions
- Removals
- Targets that include land carbon leakage, if applicable
- Land use
- Gross CO₂ fluxes, if relevant
- Product carbon storage, if relevant
- External compensation and/or contribution targets

Reporting requirements for tracking progress

Companies **shall** disclose the following information to track progress over time:

- **Base year or period and rationale:** The selected base year or period and the rationale for choosing the base year or period.
- **Profiles for emissions, removals, and other metrics over time:** A profile of all metrics reported across all scopes and scope 3 categories that is also consistent with the base year or period recalculation policy.
- **Base year recalculation policy:** A policy including the significance threshold for methodological changes and structural changes to the reporting company that triggers base year recalculations.
- **Other recalculations:** Any recalculations of base year/period levels, including the rationale for recalculation and which assumptions and values were changed, with a comparison of updated values to original values.
- **Context for emissions changes:** Appropriate context for any significant emissions changes that triggered base year emissions recalculation (acquisitions/divestitures, outsourcing/insourcing, changes in reporting boundaries or calculation methodologies, etc.).

17.3 Recommendations and options

Recommended targets and target levels

Companies **should** set targets for all relevant accounting categories in this *Standard*, including:

- Land emissions
- CO₂ removals
- Targets that include land carbon leakage, if applicable
- Land use
- Biogenic product CO₂ emissions
- TCDR-based CO₂ emissions, if relevant
- Product carbon storage, if relevant

The primary goal of corporate targets **should** be emissions reduction, to maintain a focus on reducing emissions to the atmosphere, but removals play an important role in balancing residual GHG emissions. In addition to emission reduction targets, companies **should** also set complementary targets to increase removals.

Companies **should** set target levels aligned with the global need to reduce GHG emissions in line with 1.5°C pathways based on sector and product analyses. Companies **should** set targets with an overall objective of reducing total cumulative GHG emissions, since climate change is driven by total cumulative GHG emissions to the atmosphere.

Companies **should** also set targets to reduce land use (i.e., land occupation expressed as hectares and/or carbon opportunity cost of land use), on an intensity and/or absolute basis, at a level sufficient to avoid contributing to net global agricultural land expansion.

Recommendations for setting targets by target type

Companies **should** set separate targets (i.e., disaggregated targets or sub-targets) as follows:

- Set separate emissions targets for land emissions vs. fossil fuel and industrial emissions.
- Set separate removals targets for land management CO₂ removals and CO₂ removals with geologic storage, if both are relevant to their operations and/or value chain.
- Set separate targets for land use using land occupation expressed as hectares and/or carbon opportunity cost of land use to both optimize land use efficiency and minimize land carbon losses within their operations and value chain.
- Set separate targets by scope.

Companies **may** set targets (absolute and/or intensity) for aggregate reductions in all emissions categories and the carbon opportunity cost of land use.

Companies that produce multiple agricultural products **should** set separate absolute and/or intensity targets for each product type, in order to track progress in reducing emissions and/or land use of each product type over time.

Companies **should** follow the recommendations on setting targets for each target type in Table 17.3 in the *Guidance* and refer to Chapter 17 in the *Guidance* for more details on the above.

Consider additional mitigation action external to the target boundary

In addition to meeting GHG targets across the scope 1, scope 2, and scope 3 inventory, companies **should** invest in external compensation or contributions to achieve additional mitigation outside the target boundary as a supplement to the company's GHG reduction and removal targets, to help reach the global, Paris Agreement-aligned 1.5°C goal.

Options to help manage permanence

If companies choose to set removals targets, they **may** use a reserve approach as a risk management tool to help implement the reversals accounting requirement on an annual basis, including determining progress toward and achievement of removals targets. For discussion on reserve approaches, see Section 12.3.



Box 17.1. Recommendations on net targets to programs, regulators, and companies not participating in target-setting programs

ROLE OF POLICYMAKERS AND PROGRAMS IN SETTING NET TARGETS

Setting rules for net targets is a GHG program or regulatory decision. The GHG Protocol *Accounting and Reporting Standard* is not by itself sufficient for this purpose.

If more than one accounting category is included in a net target boundary, it allows progress in one category to come at the expense of another when determining whether a target has been achieved. Setting rules for net targets is therefore a policy decision. GHG Protocol requires disaggregation of inventory categories in GHG inventory reports, which enables policy-makers, regulators, and GHG programs to make policy decisions on fungibility between categories in the context of specific program objectives.

Target-setting programs **may** choose to allow accounting categories to be added or netted within a target boundary to meet specific program objectives.

A program can decide that categories that are conceptually additive should not be fungible. For example, land and non-land emissions are conceptually additive, but a program can decide they are not fungible based on policy objectives. Land management CO₂ removals and CO₂ removals with geologic storage are conceptually additive, but a program can decide that geologic removals are not fungible with land management CO₂ removals. GHG Protocol therefore recommends that companies set separate targets for land and non-land inventory categories, in the absence of additional program rules.

RECOMMENDATIONS TO GHG PROGRAMS OR REGULATORS ON SETTING RULES FOR NET TARGETS

The following are recommendations to GHG programs or regulators if they are setting rules for net targets that include emissions and removals. The list is not exhaustive and should be supplemented by additional program rules. All other requirements and recommendations in this chapter also apply to net targets (including setting separate targets for emissions, accounting for reversals when determining target progress and achievement, etc.).

Companies are encouraged to participate in target-setting programs aligned with the global need to limit cumulative GHG emissions in line with 1.5°C pathways based on sector and product analyses (e.g., SBTi). If the reporting company does not participate in a target-setting program, the following recommendations are also relevant to such companies.

SEPARATE LAND AND NON-LAND TARGETS

- Programs **should** require separate targets for land net targets (for land emissions and land management CO₂ removals) and non-land net targets (for fossil fuel and industrial emissions and CO₂ removals with geologic storage).

NET TARGET BOUNDARY (I.E., WHICH EMISSIONS AND REMOVALS TO INCLUDE IN NET TARGETS)

- Programs **should** require that net targets comprehensively include all GHG emissions and land carbon leakage.
- Programs **should** only allow removals that have an equivalent impact on the climate as the emissions included in the same net target boundary (i.e., only include removals in the net target boundary that store carbon in non-atmospheric carbon pools over a similar lifetime as emissions in the net target boundary remain in the atmosphere) by either:
 - Permanently removing CO₂ from the atmosphere and storing it in non-atmospheric pools for timescales equivalent to the atmospheric lifetime of CO₂ (or for timescales equivalent to the atmospheric lifetime of other residual GHG emissions neutralized by the removal); or
 - Meeting all requirements in Chapter 12 to implement a storage monitoring framework (i.e., Requirements 19–23), to reflect the company's contribution to the global carbon budget and cumulative emissions, which drive long-term temperature change.
- Programs **should** set additional eligibility requirements and limits on the quantity or type of removals allowed in net targets as relevant to the program. For example, programs may limit removals used in net targets to those that:
 - Are scope 1 removals only (rather than scope 3 removals);
 - Meet requirements beyond those included in Chapter 12 (e.g., more specific monitoring, traceability, or data quality requirements); and/or

Box 17.1. Recommendations on net targets to programs, regulators, and companies not participating in target-setting programs (cont.)

- Meet additionality requirements (removals that result from the company's mitigation efforts, rather than removals that would have occurred otherwise).
- Product storage **should** not be included in company net targets (e.g., net zero targets). Companies **may** set a separate target for product storage.
- Programs that choose to set targets for the carbon opportunity cost of land use **should** consider the following recommendations and options:
 - If programs include the carbon opportunity cost of land use in their targets, they **may** consider deducting annual reductions in carbon opportunity cost intensities that exceed a science-based intensity target level from total emissions for the purpose of tracking progress against emissions targets. See the *Guidance* (Section 17.4) for setting and tracking progress towards COC intensity targets.
 - For programs that choose to set net targets that aggregate emissions and removals with land use expressed as a carbon opportunity cost, there is potential to double count carbon losses as both (direct or statistical) land use change emissions and a change in the carbon opportunity cost of land use. Changes in the carbon opportunity cost of land use can potentially also double count carbon losses and gains that are accounted for in the inventory as land management net biogenic CO₂ emissions or removals (see Chapters 9 and 13, respectively). In such cases, companies **should** deduct any double-counted land emissions and removals from the scope 1 or 3 carbon opportunity cost of land use for target setting and tracking purposes.

REPORTING

For net targets that include emissions and removals, programs **should** require companies to report the information in the "Target-setting reporting" requirement in Section 17.2.2 for net targets and additionally specify the following:

- Which greenhouse gases and scopes of emissions are included (scope 1, scope 2, scope 3, and which scope 3 categories)
- Which scopes of removals are included (scope 1 and/or scope 3)
- What types of removals are included (removals with land-based or geologic storage; and biogenic or technological removals), with justification for their inclusion, and eligibility requirements and limits on the quantity or type of removals allowed in the net targets

INCLUDE LAND CARBON LEAKAGE IN TARGETS UNDER RELEVANT CONDITIONS

If regulations or target-setting programs either set a net emissions target that includes land management CO₂ removals on agricultural lands, and/or set a target that excludes biogenic product CO₂ emissions (e.g., by treating biomass combustion emissions as zero), they **should** include leakage quantification in the relevant target(s).^a

If companies not participating in target-setting or regulatory programs either set a net emissions target that includes land management CO₂ removals on agricultural lands, and/or set a target that excludes biogenic product CO₂ emissions (e.g., by treating biomass combustion emissions as zero), they **should** include the "total emissions" accounting category that includes land carbon leakage in the relevant target(s).

See Tables 17.2 and 17.3 in the *Guidance* on reporting requirements and recommended elements of targets that include land carbon leakage.

Note: a. If regulations or GHG programs separately specify how the leakage category is applied for the purpose of their regulations or program, companies may report these parallel leakage estimates and use these estimates to comply with the regulation or program, in addition to reporting carbon opportunity cost-based values.

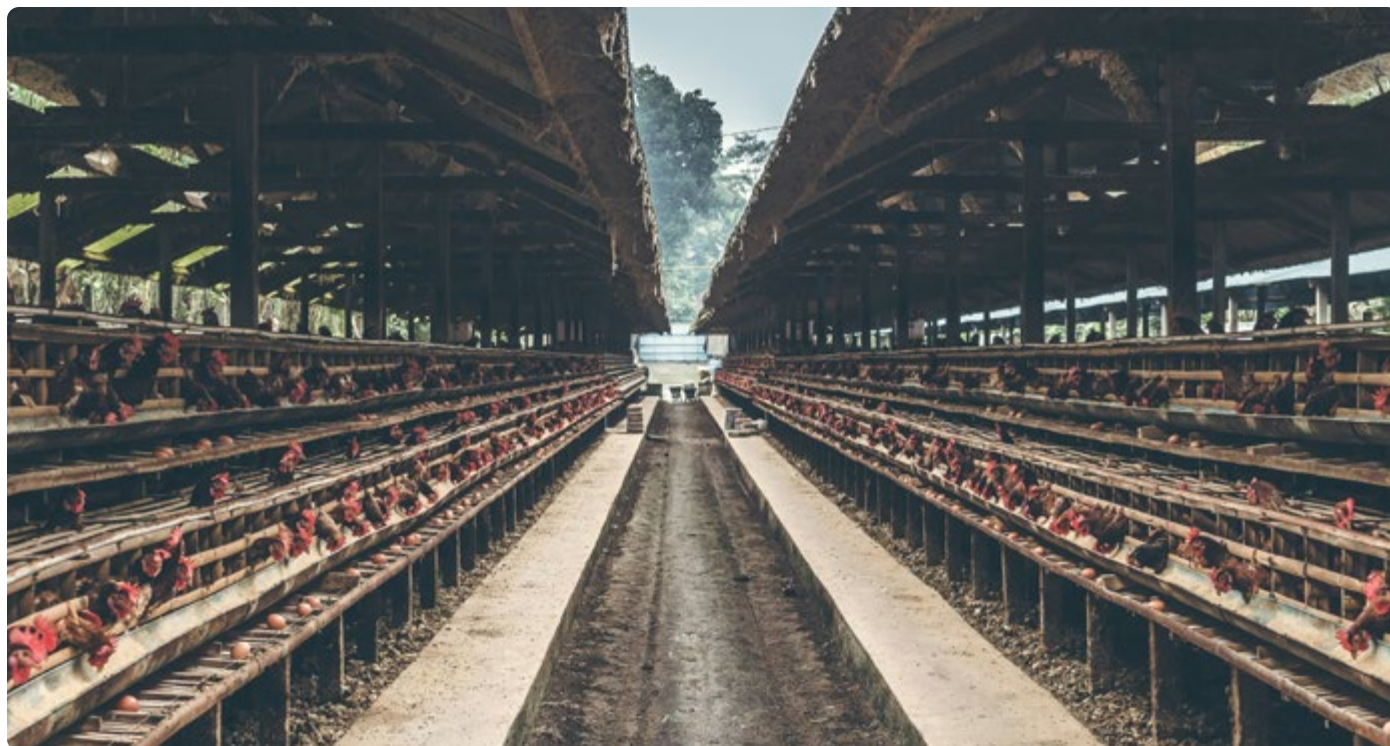
17.4 Guidance on the requirements and recommendations

The GHG Protocol defines the categories of information in an inventory, how the categories are accounted for, and which categories are required or optional to report. This chapter provides guidance for how these accounting categories should be included in a company's target boundary when setting targets for individual accounting categories and tracking progress over time. Companies that prepare and report GHG inventories based on GHG Protocol standards but do not participate in a target-setting program should follow the guidance in this chapter when setting GHG targets.

Rapid emissions reductions are central to achieving global climate targets and are thus the starting point for corporate targets. Companies are recommended to set clearly defined targets to reduce emissions, ideally in line with global climate goals to limit cumulative emissions in line with 1.5°C pathways. Companies should also set targets to increase removals in line with 1.5°C pathways. CO₂ removals play an important role in balancing residual GHG emissions and, for companies in the land sector or technological CO₂ removal sector, can be used to reach net zero or net-negative emissions (i.e., net removals).

Companies should also set targets to reduce land use. It is recommended to complement emission reduction and removals targets with targets to increase land-use efficiency through production and/or consumption strategies sufficient to reduce the global demand for agricultural land and related land uses. Most Paris Agreement-aligned climate mitigation strategies require that the world first stabilize, and then later reduce, the global agricultural land area in order to halt land use change emissions and to store more carbon in natural ecosystems. As food and land demands rise with growing populations and rising incomes, achieving global climate and land use goals requires increasing the efficiency of land use.

Companies should also include land carbon leakage in their emissions reduction targets. Setting targets that incorporate land carbon leakage into emissions targets encourages more efficient use of land and avoids land conversion and land use change emissions that occur through displacement or leakage effects.



17.4.1 Overview of target-setting steps

This section provides high-level guidance for companies that set targets. Companies should follow the nine general steps detailed below in this section (summarized in Figure 17.1) when setting the following recommended target types:

- GHG emission reduction targets, including land emissions
- CO₂ removals targets, as part of removals targets or net targets that include removals
- Targets that include land carbon leakage, if applicable
- Land use targets, including land occupation and/or carbon opportunity cost of land use
- Biogenic product CO₂ emission reduction targets
- TCDR-based CO₂ emission reduction targets, if relevant
- Product carbon storage targets, if relevant

For target-specific guidance by target type, companies should follow the guidance in the corresponding subsections of Section 17.4.2. Target-setting programs may provide additional requirements for target design and communication. For more information on target setting, see:

- The GHG Protocol *Corporate Standard (2004)* (Chapter 11: Setting a GHG Target)
- The GHG Protocol *Scope 3 Standard (2011)* (Chapter 9: Setting a GHG Reduction Target and Tracking Emissions Over Time)
- The GHG Protocol *Mitigation Goal Standard (2014)*² (Chapter 4: Designing a Mitigation Goal; Chapter 5: Estimating Base Year Emissions; and Chapter 6: Accounting for the Land Sector)
- The Science Based Targets initiative (SBTi)
- The Science Based Targets Network (SBTN)

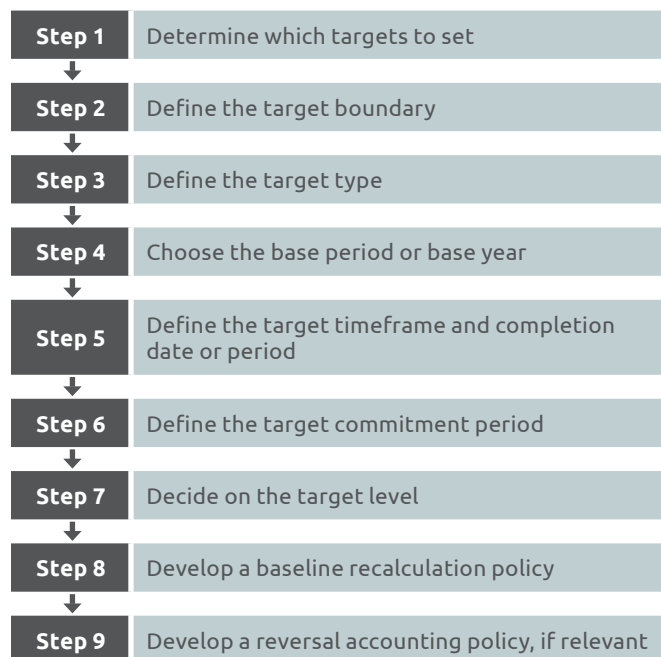
Target setting is an iterative process, and the general Steps 1–9 outlined below in this section can be followed in a different order.

Step 1. Determine which targets to set

Companies are recommended to set a series of disaggregated sub-targets (e.g., land targets versus non-land targets, emission reduction targets versus removals targets, or net targets), as applicable to the reporting company, given the unique nature of each accounting category and subcategory. Setting multiple disaggregated sub-targets increases transparency, provides more detailed information for decision making, and better highlights connections between specific activities and target performance.

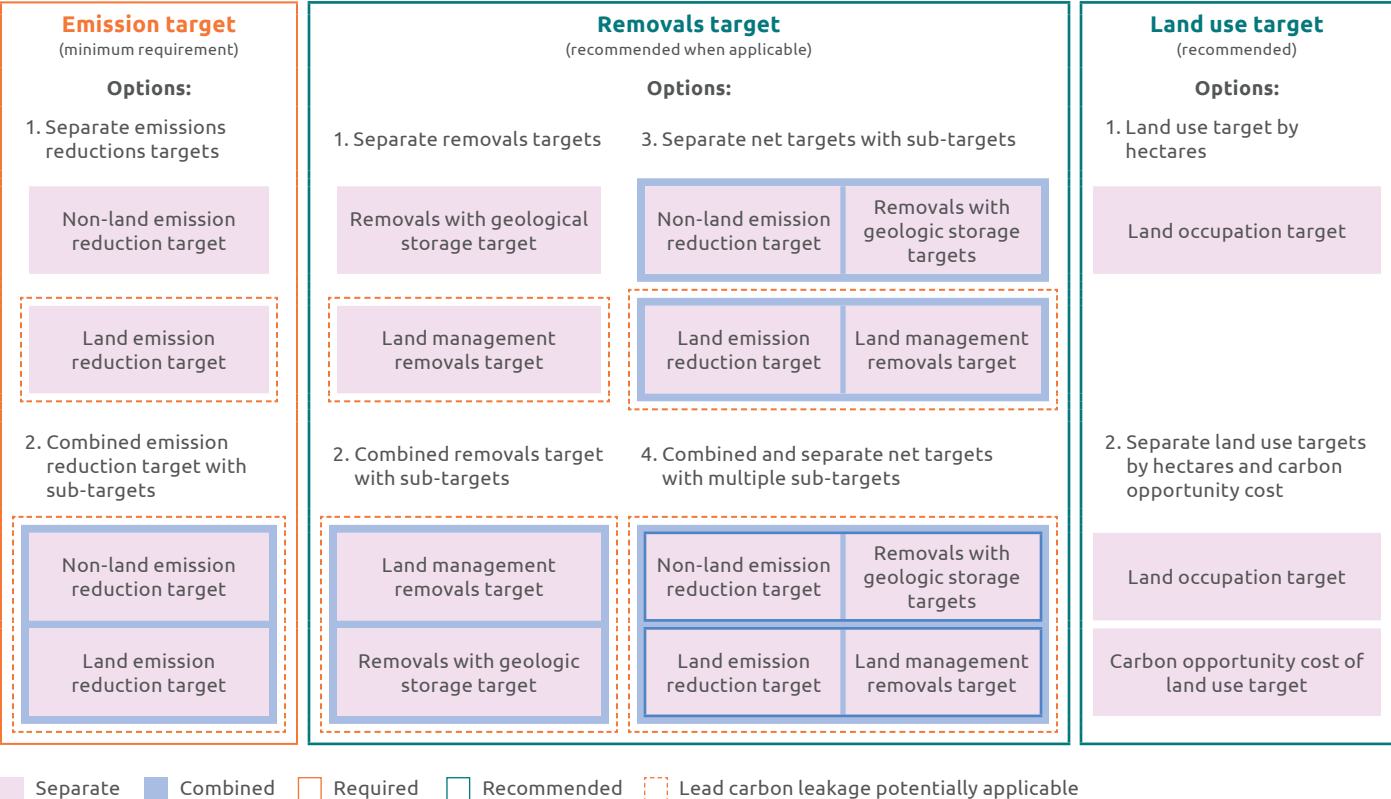
Disaggregated sub-targets can also be aggregated into comprehensive targets for communication purposes, as shown in the blue boxes in Figure 17.2.

Figure 17.1 Overview of target-setting steps



In this case, sub-targets can be nested as part of broader targets. For example, land emission reduction targets and fossil fuel and industrial emission reduction targets can be combined into an overall emission reduction target. However, when setting sub-targets, companies account for target progress and achievement separately for each sub-target at a disaggregated level.

Figure 17.2 Determining which targets and sub-targets to set



Note: This figure is not exhaustive. Targets that include land carbon leakage are recommended if companies either set a net emissions target that includes land management CO₂ removals on agricultural lands and/or set a target that excludes biogenic product CO₂ emissions (e.g., by treating biomass combustion emissions as zero).

Step 2. Define the target boundary

The target boundary defines which GHGs, scopes, sectors, geographic operations, sources, sinks, pools, and activities are covered by the target. This *Standard* includes several accounting categories and subcategories, including emissions, removals, land use, land carbon leakage, gross CO₂ fluxes, and product carbon storage. Companies should clearly define the target boundary of each target or sub-target and may set a variety of targets and sub-targets (see Table 17.1).



Table 17.1 Accounting categories included in different types of targets

Targets ^a		Accounting subcategories included in target boundary ^b
Emission reduction targets	Fossil fuel and industrial emission reduction target	<ul style="list-style-type: none"> Stationary combustion GHG emissions Mobile combustion GHG emissions Process GHG emissions Fugitive GHG emissions Reversals of CO₂ capture with geologic storage
	Land emission reduction target	<ul style="list-style-type: none"> Land use change emissions Land management net biogenic CO₂ emissions Land management production emissions Biogenic CH₄ and N₂O emissions, and, in certain cases, biogenic CO₂ emissions (see Requirement 17 for details)
	Combined emission reduction target	<ul style="list-style-type: none"> All emissions accounting categories listed above are included
Removals targets (if applicable)	Removals with geologic storage target	<ul style="list-style-type: none"> Captured biogenic CO₂ with geologic storage Technological CO₂ removals with geologic storage Reversals of CO₂ removals with geologic storage
	Land management CO₂ removals target	<ul style="list-style-type: none"> Land management CO₂ removals Reversals of land management CO₂ removals
Non-land net targets (if applicable)	Non-land net target	<p>Fossil fuel and industrial emissions:</p> <ul style="list-style-type: none"> Stationary combustion GHG emissions Mobile combustion GHG emissions Process GHG emissions Fugitive GHG emissions Reversals of CO₂ capture with geologic storage <p>Removals:</p> <ul style="list-style-type: none"> Captured biogenic CO₂ with geologic storage Technological CO₂ removals with geologic storage Reversals of CO₂ removals with geologic storage
Land net targets (if applicable)	Land net target	<p>Land emissions:</p> <ul style="list-style-type: none"> Land use change emissions Land management net biogenic CO₂ emissions Land management production emissions <p>Removals:</p> <ul style="list-style-type: none"> Land management CO₂ removals Reversals of land management CO₂ removals
Land use targets	Targets for land occupation	<ul style="list-style-type: none"> Land occupation
	Targets for carbon opportunity cost of land use	<ul style="list-style-type: none"> Carbon opportunity cost of land use
Targets that include land carbon leakage (if applicable) ^c	Net target that includes land management CO₂ removals on agricultural lands	<ul style="list-style-type: none"> All categories included in the target boundary (see “Non-land net targets” and “Land net targets” above), as applicable Land carbon leakage
	Emission reduction target that excludes biogenic product CO₂ emissions	<ul style="list-style-type: none"> All categories included in the target boundary (see “Emission reduction targets” above), as applicable Land carbon leakage

Table 17.1 Accounting categories included in different types of targets (cont.)

Targets ^a		Accounting subcategories included in target boundary ^b
Gross CO ₂ flux targets	Targets for biogenic product CO ₂ emissions	<ul style="list-style-type: none"> Gross biogenic product CO₂ emissions
	Targets for gross land CO ₂ fluxes	<ul style="list-style-type: none"> Gross biogenic land CO₂ emissions Gross biogenic land CO₂ removals
	Targets for gross technological carbon dioxide removal (TCDR) fluxes	<ul style="list-style-type: none"> Gross technological CO₂ removals Gross TCDR-based product CO₂ emissions Gross CO₂ emissions from geologic storage
Product carbon storage targets	Targets for biogenic product storage	<ul style="list-style-type: none"> Biogenic product carbon storage net increases Biogenic product carbon storage net decreases
	Targets for TCDR-based product storage	<ul style="list-style-type: none"> TCDR-based product carbon storage net increases TCDR-based product carbon storage net decreases
Targets for external compensation or contributions		<ul style="list-style-type: none"> External compensation External contributions

Notes: a. The categories included in a target are subject to additional criteria and requirements by target-setting programs (e.g., which types of removals are eligible to be included in net targets); b. This table outlines categories without regard to scopes or whether each category is direct or indirect for a given company. Companies are required to report categories separately based on scopes and whether they are direct or indirect. Some categories are reported separately from the physical GHG inventory. For more information, see Chapters 4 and 20; c. Targets that include land carbon leakage are recommended if companies either set a net emissions target that includes land management CO₂ removals on agricultural lands and/or set a target that excludes biogenic product CO₂ emissions (e.g., by treating biomass combustion emissions as zero). If companies participate in target-setting or regulatory programs, they should include leakage in the relevant target(s). If they do not participate in such programs, they should include the “total emissions” accounting category that includes land carbon leakage in the relevant target(s).

Step 3. Define the target type

An absolute target is expressed as either a total level of emissions, removals, or other metric (e.g., a net-zero emissions target) or a change relative to emissions, removals, or other metric in the base year or period (e.g., a target to reduce total GHG emissions by 50 percent compared to base year emissions). In contrast, an intensity target is expressed as a reduction in the ratio of GHG emissions, removals, or other metrics relative to a business metric, such as output, production, sales, or revenue (e.g., a target to reduce by 30 percent the GHG emissions from beef per kg of protein produced, compared to a base year).

Absolute targets correspond with the need to reduce cumulative emissions to the atmosphere in line with the global carbon budget. Intensity targets facilitate the ability to reduce emissions or increase removals associated with a particular business unit, purchased good, or sold product. Absolute and intensity targets are complementary. For example, companies may establish an absolute target at the corporate level and a combination of intensity targets at lower levels of the company, or an absolute target for scope 3 emissions and intensity targets for individual product categories. Companies should use kilocalories or protein as the denominator for intensity targets involving agricultural products, as these are more accurate indicators of energy or nutritional value than other business metrics such as weight, sales, or revenue.

Companies that produce multiple agricultural products should set separate absolute and/or intensity targets for each product type to track progress in reducing the emissions and/or land use of each product type over time. Companies may also aggregate these targets across multiple products. For companies that produce agricultural products, they may measure progress against an aggregate intensity target (that includes multiple products)

using a method that weights each product's contribution to the company's total emissions, removals, and/or land use in the year reported. For example, if beef made up 90 percent of the company's land management production emissions in 2025 and beans made up 10 percent, then the emissions intensity reduction in 2025 for beef (relative to the base year) may be weighted by 90 percent, and the emissions intensity reduction for beans weighted by 10 percent, before summing the product-level reductions together to calculate the aggregate intensity reduction in 2025. Weighting is used so that, for producer companies, changes in product mix alone are not considered changes in aggregate intensity. For directly consumer-facing companies, progress may be measured relative to an appropriate business metric (such as GHG emissions per kg of protein) for products that are likely substitutes.

Step 4. Choose the base period or base year

Establishing a reference point is necessary to track performance consistently and meaningfully over time. For emissions, removals, and other metric targets, performance is typically measured against a base period or base year. Target achievement is determined by the difference between emissions, removals, or other metrics in the target year(s) and emissions, removals, or other metrics in the base year, or average annual emissions, removals, or other metrics in the base period. Where companies only set an absolute target level, a base year or period may not be necessary (e.g., net-zero or net-negative emissions targets by a certain year).

Several considerations can help a company select an appropriate base period or base year:

- That verifiable data exist for the base period or base year across all sources and activities;
- That the base period or base year is representative of a company's typical emissions profile; and
- That the target has sufficient forward-looking ambition and does not unduly take credit for past progress.

For land emissions or removals targets, companies are recommended to set a representative base period, rather than a single base year, given the significant interannual variability that can occur in land-based carbon pools. In this case, base period emissions, removals, or other metrics are annualized by calculating average annual emissions, removals, or other metrics over the base period. For example, a company setting a land emission reduction target could select a base period from 2020–22 and would compare target year land emissions against the average of land emissions from 2020, 2021, and 2022.

To enable consistency and comprehensiveness, companies should aim to use the same base period or base year for all scopes, metrics, and targets. Companies that have previously established a base period or base year for certain targets may choose a more recent base period or base year for any additional targets they establish using this *Standard* (e.g., the first year for which companies have complete and reliable data).

Step 5. Define the target timeframe and completion date or period

The target timeframe determines whether the target is relatively short- or long-term. In general, companies are recommended to set a combination of short-term and long-term targets. Long-term targets (e.g., up to 2050) facilitate long-term planning and larger capital investments with significant GHG benefits and can be aligned to global climate goals. Short-term targets (e.g., between 5–10 years from the date when the target is set) match the decision horizons of the business, allowing it to identify more immediate opportunities and increase accountability through frequent measurement of progress. Companies should consider setting target years aligned with relevant national or international target years (e.g., 2030).

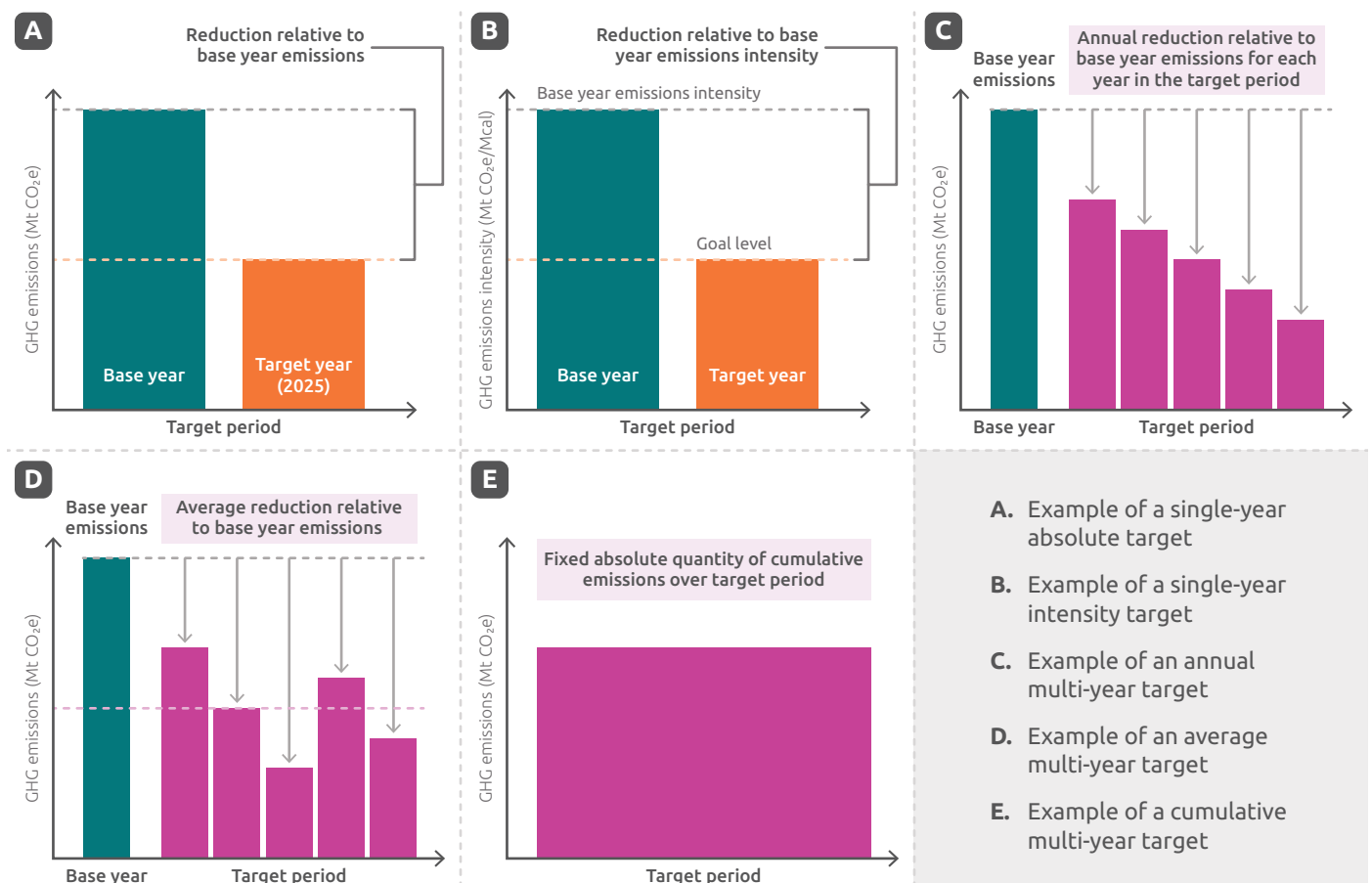
Step 6. Define the target commitment period

The target commitment period is the period of time during which emissions performance is actually measured against the target. Single-year targets (see Figures 17.3(a) and 17.3(b)) aim to achieve an emission reduction (absolute or intensity) target by a single year (e.g., 2030), while multi-year targets limit emissions for multiple consecutive years over a defined target commitment period (e.g., for each year from 2025 to 2040). Companies should set both short-term (e.g., 5–10 years) and long-term (e.g., up to 2050) targets in line with 1.5°C pathways.

Multi-year targets can be defined as average, annual, or cumulative multi-year targets:

- An annual multi-year target is a commitment to reduce annual emissions, increase annual removals, reduce land use, or change other metrics by a specific amount each year for multiple consecutive years (see Figure 17.3(c)). For example, an annual multi-year target might specify a reduction of 40 percent below base year emissions in 2025, 42 percent by 2026, 44 percent by 2027, and so on.
- An average multi-year target is a commitment to reduce annual emissions, increase annual removals, reduce land use, or change other metrics by an average amount over multiple consecutive years (see Figure 17.3(d)).
- A cumulative target is a commitment to limit total cumulative emissions or increase total cumulative removals, or a cumulative change in other metrics, over multiple consecutive years to a fixed absolute quantity (see Figure 17.3(e)).³

Figure 17.3 Examples of target types and commitment periods



Source: WRI and WBCSD 2014b.

Companies are recommended to set multi-year targets across multiple consecutive years for several reasons:

- Climate change is driven by cumulative global emissions; therefore, a company’s emissions in each reporting year, not only in a single target year, contribute to climate change.
- Multi-year targets ensure that companies prioritize mitigation efforts across multiple years, rather than pursuing mitigation efforts in only one year (e.g., 2030) at the expense of mitigation efforts in all other years.
- Multi-year targets avoid situations where a company delays emitting activities until after a single target year is achieved (e.g., delaying a major harvest event or land use change until after a target year, or delaying activities that would trigger a reversal until after a single target year is achieved).
- Multi-year targets avoid situations where target year emissions, removals, or other metrics unexpectedly fluctuate from previous years. For instance, significant variations in land emissions, removals, or other metrics can occur due to weather, natural disturbances, or other factors from one year to the next.
- Multi-year targets ensure that removals reported in a single target year are not negated by subsequent reversals from the same carbon pools in future years if those subsequent years are not covered by a target.

Step 7. Decide on the target level

The target level is the numerical value of the target and represents the level of ambition of the target. The target level depends on the target type:

- **Absolute targets** are expressed as an absolute level of emissions, removals, or other metrics or a percent change relative to the target base year or base period.
- **Intensity targets** are expressed as a ratio of GHG emissions, removals, or other metrics relative to a business metric, such as output, production, sales, or revenue. Companies should use kilocalories or protein as the denominator for intensity targets involving agricultural products, as these are more accurate indicators of energy or nutritional value.

Companies can use the target level to determine whether or not they achieved their target in the target year, following Equation 17.1 for absolute targets.

Equation 17.1 Determining if an absolute emission target is achieved

Absolute emission level targets: $E_{TY} \leq E_{TL}$

Absolute emission reduction targets: $(E_{BY} - E_{TY}) \geq (E_{BY} \times \frac{E_{TP}}{100})$

Description	Unit	Source
E_{TY} Emissions in the target year	tonnes CO ₂	Calculated
E_{BY} Emissions in the base year or average annual emissions in the base period	tonnes CO ₂	Calculated
E_{TL} Target level of emissions	tonnes CO ₂	User input
E_{TP} Target percent reduction in emissions	percentage	User input

When companies apply a base period, emissions in the base year are the average emissions in each year of the base period. For intensity targets, performance should be evaluated based on either the total emissions associated with producing the good or service divided by the actual production or the average emission factor associated with the purchased good or service or sold product. When estimating scope 1 intensity metrics, the functional unit of the intensity metric should match the relevant business unit, product, or other metric. For example, an intensity metric for purchased palm oil could be GHG emissions per kilocalorie. See the *Product Standard* for additional guidance on determining functional units for intensity metrics.

In general, companies should set an ambitious target that reduces emissions significantly below the company's business-as-usual emissions trajectory and is in line with a science-based pathway for limiting global temperature rise below dangerous levels (e.g., 1.5°C above pre-industrial temperatures⁴). A goal in line with the best available climate science can drive greater innovation within the company and the value chain and is seen as most credible by stakeholders. The Science Based Targets initiative (SBTi)⁵ provides science-based emission reduction pathways for different sectors, including forest, land, and agriculture (FLAG)-related sectors. To inform the numerical value of the target, companies should also examine potential GHG reduction opportunities and estimate their effects on total GHG emissions.

Step 8. Develop a baseline recalculation policy

Using consistent data, methods, inventory boundaries, and other relevant factors over time is necessary to track real performance towards achieving climate targets. Companies are required to establish a baseline recalculation policy to determine when base year or base period recalculation is necessary, as set forth in Requirement 28.

The need to recalculate emissions, removals, or other metrics in the base year or base period depends upon the significance of the changes. A significance threshold for baseline recalculation is a qualitative and/or quantitative criterion used to define any significant change to the data, methods, inventory boundaries, or other relevant factors. For example, a significance threshold for baseline recalculation could be defined as changes to the data and methods that alter base year emissions, or average emissions in the base period, by at least 10 percent of the emissions reduction target (e.g., a 5 percent change in base year emissions, if the emissions reduction target is a 50 percent reduction).

Requirement 28 sets forth how, at a minimum, significant changes to the structure of the reporting company, significant changes to the data and methods applied, and discovery of significant errors must be covered by the baseline recalculation policy. For example, a baseline recalculation would be necessary when a company that previously did not include land sector activities in its GHG inventory and targets fully integrates these activities into its GHG inventory (i.e., leading to inclusion of land emissions, CO₂ removals, and other metrics not previously included in the company's base year emissions, removals, or other metrics).

Significant changes to data and methods include the following:

- Changes to data and methods that result in changes to base period or base year emissions, removals, or other metrics greater than the defined significance threshold for baseline recalculation.
- For land use change emissions accounting specifically, a change in the LUC emissions calculation approach (i.e., between sLUC and dLUC calculation approaches), or the data or methods used within the calculation approach (e.g., a change from non-spatialized to spatialized crop statistics data) for a given product by sourcing region (see Requirement 10).

Refer to Section 17.4.3 for additional guidance on enabling consistent performance tracking over time through base year recalculations.

Step 9. Develop a reversal accounting policy, if relevant

Removals only benefit the global carbon budget and reduce long-term global warming if the carbon removed from the atmosphere remains stored in non-atmospheric carbon pools. For companies setting removals targets or net targets, any reversals of removals reported in previous GHG inventory years must be accounted for as part of a company's target accounting and included in any determination of whether a target has been met. For additional details on reversals and permanence for removals, see Requirement 23 in Chapter 12 and related storage-specific requirements in Chapters 13 and 14.

In some cases, base period or base year recalculations due to structural changes (e.g., divestments) can make reversals accounting unnecessary if previously reported emissions and removals in the base year inventory are factored out as part of a base period or base year recalculation. In such cases, accounting for reversals is not needed because previously reported removals are no longer part of the base year or base period inventory.

Accounting for reversals in targets requires accountability for annual emissions or other losses of stored carbon. Depending on the company's choice of target commitment period (either a single-year or multi-year target; see Step 6 above), this can be achieved by:

- Setting annual targets over multiple consecutive years (i.e., an annual multi-year target);
- Setting an average multi-year target that reduces annual emissions by an average amount over multiple consecutive years;
- Setting cumulative emissions targets that limit total emissions over multiple consecutive years; or
- Setting periodic targets (e.g., every five years) that take the reversals of prior years into account when determining target achievement.

Companies can follow Equation 17.2, based on the removals target type, to factor in reversals when determining whether or not they have achieved their removals target. Where companies apply a base period, removals in the base year are the average removals in each year of the base period.

Losses of stored carbon associated with previously reported removals count against a company's progress in reaching GHG targets, whether they are reflected in the GHG inventory automatically as an emission or whether they are separately accounted for as a reversal. Reversals and other losses of stored carbon associated with previously reported removals include those in the current target year if the company has an annual multi-year target covering all years. For companies that set cumulative emissions targets or average multi-year targets, all reversals and other losses of stored carbon associated with previously reported removals that occur in years covered by the target are included. Refer to Chapters 12–14 for further requirements and guidance on accounting for reversals.



Equation 17.2 Determining if an absolute removals target is achieved

Absolute removals level targets:

$$R_{TY} - RV \geq R_{TL}$$

Absolute removals increase targets:

$$(R_{TY} - R_{BY}) - RV \geq (R_{BY} \times \frac{R_{TP}}{100})$$

Description	Unit	Source
<i>R_{TY}</i> Removals in the target year	tonnes CO ₂	Calculated
<i>R_{BY}</i> Removals in the base year or average annual removals in the base period	tonnes CO ₂	Calculated
<i>RV</i> Reversals and other losses of stored carbon associated with previously reported removals	tonnes CO ₂	Calculated
<i>R_{TL}</i> Target level of removals	tonnes CO ₂	User input
<i>R_{TP}</i> Target percent increase in removals	percentage	User input

One option that companies have to manage the risk of reversals or other losses of stored carbon when tracking progress toward removals or net targets is to set aside some removals through a reserve approach. If a reserve approach is used, companies should develop a reserve accounting policy in conformance with the criteria set forth in Chapter 12 (see “Reserve approach” in “Options to help manage permanence” in Section 12.3).

The reserve accounting policy should specify the annual contribution to the reserve account, including how many removals in the company’s operations or value chain are included in the reserve each year. Annual removals added to the reserve account must meet the removals requirements and cannot also be reported as scope 1 or scope 3 removals within the physical GHG inventory or be issued as GHG credits. The balance in the reserve account should also be tracked each year.

Companies may use removals reported in the reserve account to counterbalance relevant reversals in the target year (and relevant reversals that have occurred since the company’s previous target year if the company sets periodic targets). Both the reversals and the removals from the reserve account used to counterbalance those reversals must be documented in the target year. Any removals in the reserve account used to counterbalance reversals are then deducted from the reserve account. If the reserve does not contain the volume of removals needed to counterbalance a loss of stored carbon, the difference must be accounted for as emissions or reversals.

The reserve approach is a tool that can be managed and used as needed to meet targets, meaning that not all reversals need to be counterbalanced by removals in the reserve account if a company’s annual removals can compensate for those losses of stored carbon. For example, a company with an annual multi-year target that reports 100 tonnes of removals and 5 tonnes of reversals in a given target year, with a removals target level of 90 tonnes of removals, may choose not to use any removals in their reserve account to counterbalance the reversals in the target year to maintain removals in their reserve. This is possible, as long as the restrictions established by the company’s reserve accounting policy (i.e., time, geographic, and carbon storage limits) are met.

17.4.2 Guidance by target type

The information in this section provides guidance for setting targets by target type. For target-specific guidance, companies should consult the following subsections:

- **17.4.2.1:** Emission reduction targets that include land emissions
- **17.4.2.2:** Removals targets
- **17.4.2.3:** Land use targets
- **17.4.2.4:** Inclusion of land carbon leakage in targets
- **17.4.2.5:** Gross CO₂ emissions targets, gross CO₂ removals targets, or sub-targets
- **17.4.2.6:** Product carbon storage targets
- **17.4.2.7:** External compensation or contribution targets

Tables 17.2(a) and 17.2(b) summarize reporting requirements by target type. Tables 17.3(a) and 17.3(b) provide recommendations by target type.

Table 17.2(a) Reporting requirements by target type

	Emission targets	Removals targets	Targets that include leakage ^a	Land use targets
Target boundary	Report whether scope 1, 2, and/or 3 emissions are included Report whether target(s) for land emissions are separate from target(s) for fossil fuel and industrial emissions	Report whether scope 1 and/or scope 3 removals are included Report the types of removals included in the target boundary (land management CO ₂ removals or CO ₂ removals with geologic storage), including eligibility requirements	Report whether scope 1 and/or scope 3 leakage are included in the emissions target alongside other GHG emissions already included If not participating in target-setting or regulatory programs: report whether the scope 1 and/or scope 3 “total emissions” category is included in targets that include land carbon leakage (see Requirement 32) If removals are included in the target boundary for net emissions targets that include leakage, report the types of scope 1 and/or scope 3 removals (land management CO ₂ removals or CO ₂ removals with geologic storage) included in the target boundary	Report land use metric(s) used (land occupation [LO] in hectares and/or carbon opportunity cost [COC] of land use)
Target type	Absolute and/or intensity	Absolute and/or intensity	Absolute and/or intensity	Absolute and/or intensity
Target base year or period	Base year/period emissions	Base year/period removals	Base year/period emissions, total emissions, or (optionally) net emissions	Base year/period land use (LO in hectares and/or COC of land use)
Target year or period	Target year(s) for emissions	Target year(s) for removals	Target year(s) for emissions, total emissions, or (optionally) net emissions	Target year(s) for land use (LO in hectares and/or COC of land use)

Table 17.2(a) Reporting requirements by target type (cont.)

	Emission targets	Removals targets	Targets that include leakage^a	Land use targets
Target level	Absolute emissions in target year(s) or percent reduction relative to emissions in the target base year or period	Absolute removals in target year(s) or percent increase relative to removals in the target base year or period	Absolute emissions, total emissions, or (optionally) net emissions in target year(s) or percent decrease relative to emissions, total emissions, or (optionally) net emissions in the target base year or period	Absolute land use (LO in hectares and/or COC of land use) in target year(s) or percent decrease relative to land use in the target base year or period
Progress in reaching target	Progress in reaching emissions target	Progress in reaching removals target	Progress in reaching emissions, total emissions, or (optionally) net emissions target	Progress in reaching land use (LO in hectares and/or COC of land use) target
Additional information	Description of how emission values were adjusted for issued GHG credits following Requirement 30	Description of how removals values were adjusted for issued GHG credits following Requirement 30 The policy for accounting for reversals of previously reported removals	Disaggregated reporting following Requirement 31 Description of how emission values were adjusted for issued GHG credits following Requirement 30 If removals included: Description of how removals values were adjusted for issued GHG credits following Requirement 30 If removals included: The reversals policy for accounting for reversals of previously reported removals	

Note: a. These targets are recommended if companies either set a net emissions target that includes land management CO₂ removals on agricultural lands and/or set a target that excludes biogenic product CO₂ emissions (e.g., by treating biomass combustion emissions as zero).

Table 17.2(b) Reporting requirements by target type (continued)

	Gross CO₂ flux targets	Product carbon storage targets	External compensation or contribution target
Target boundary	Report the target metric(s) included, such as biogenic product CO ₂ emissions, gross biogenic land CO ₂ emissions, gross biogenic land CO ₂ removals, TCDR-based CO ₂ emissions, gross technological CO ₂ removals, or gross CO ₂ emissions from geologic storage	Report the type(s) of product carbon pool(s) (biogenic or TCDR-based, by product type)	Report the types of financing or GHG credits used (emission reduction, removal, etc.)
Target type	Absolute and/or intensity	Absolute and/or intensity	
Target base year or period	Base year/period gross CO ₂ emissions and/or gross CO ₂ removals	Base year/period product carbon storage	Base year/period finance or GHG emission reduction or removal credits
Target year or period	Target year(s) for gross CO ₂ emissions and/or gross CO ₂ removals	Target year(s) for product carbon storage	Target year(s) for financing or GHG credits

Table 17.2(b) Reporting requirements by target type (continued) (cont.)

	Gross CO ₂ flux targets	Product carbon storage targets	External compensation or contribution target
Target level	Absolute gross CO ₂ emissions and/or gross CO ₂ removals in target year(s), or percent change relative to gross CO ₂ emissions and/or gross CO ₂ removals in the target base year or period	Absolute product carbon storage in target year(s) or percentage increase relative to product carbon storage in the target base year or period	Absolute finance or GHG credits in target year(s) or percentage change relative to finance or GHG credits in the target base year or period
Progress in reaching target	Progress in reaching gross CO ₂ emissions and/or gross CO ₂ removals target	Progress in reaching product carbon storage target	Progress in reaching compensation or contribution target, separately from emissions and removals within the inventory boundary
Additional information		Quantity of carbon storage and expected length of storage	Relevant standards, methods, data, and assumptions used by the GHG credits Additional required reporting for GHG credits in Chapter 18, if applicable

Table 17.3(a) Recommendations for setting targets by target type

	Emission target	Removals targets	Targets that include leakage ^a	Land use targets
Target boundary	Set a comprehensive target boundary that includes all GHG emissions, gases, scopes (1, 2, and 3), and scope 3 categories	Only include removals in the target boundary that meet the permanence principle by either: Permanently removing CO ₂ from the atmosphere and storing it in non-atmospheric pools for timescales equivalent to the atmospheric lifetime of CO ₂ (i.e., millennia); or Meeting all requirements in Chapter 12 to implement a storage monitoring framework (i.e., Requirements 19–23), to reflect the company’s contribution to the global carbon budget and cumulative emissions, which drive long-term temperature change	Set a boundary that includes leakage in the emissions target alongside other GHG emissions already included If not participating in target setting or regulatory programs, set a comprehensive target boundary that includes the “total emissions” category for all relevant scopes (see Requirement 32) If removals are included in net emissions targets that include leakage, see recommendation in the “Removals targets” column on this line	Set a comprehensive target boundary that includes land use (e.g., land occupation) for scope 1 and each scope 3 category

Table 17.3(a) Recommendations for setting targets by target type (cont.)

	Emission target	Removals targets	Targets that include leakage ^a	Land use targets
Target type	<p>Companies should set a combination of absolute and intensity targets. For example, companies may establish an absolute target at the corporate level and a combination of intensity targets at lower levels of the company, or an absolute target for total scope 3 emissions and a combination of intensity targets for individual scope 3 categories or products within a scope 3 category.</p> <p>To ensure transparency, if companies choose to set only an intensity target, then they should also report the absolute emissions, removals, or other metrics from sources, sinks, and pools covered by the target.</p> <p>An absolute target is expressed as a reduction in GHG emissions, an increase in CO₂ removals, or a change in other metrics over time. An intensity target is expressed as a change in the accounting category value relative to a business metric, such as output, production, sales, or revenue, and can be especially useful for individual product categories. Companies should use kilocalories or protein as the denominator for intensity targets involving agricultural products, as they are more accurate indicators of energy or nutritional value than other business metrics such as weight, sales, or revenue.</p>			
Target base year/period	<p>Companies should use a representative base year or base period and use the same base year or period across all targets (unless the target is expressed without reference to a base year, e.g., to achieve net-zero or net-negative emissions by a certain year).</p> <p>Companies should select a representative base period, rather than a single base year, for land emissions and land management CO₂ removals, given the significant interannual variability that can occur in land-based carbon pools. A three-year base period is often sufficient to smooth out interannual variability, although longer periods may be justified for dryland ecosystems. If a base year has already been set for fossil fuel and industrial emissions, then a multi-year base period can be centered on that year.</p> <p>Companies should select a base period using the earliest relevant point in time for which they have verifiable data.</p>			
Target year (single or multi-year)	<p>Companies should set multi-year targets over consecutive years (e.g., for each year from 2025 to 2040), rather than only a single target year (e.g., 2030).</p> <p>Companies should set both short-term (e.g., 5–10 years) and long-term (e.g., up to 2050) targets in line with 1.5°C pathways.</p>			
Target level	<p>Set a GHG emission reduction target to reduce scope 1, 2, and 3 emissions in line with a 1.5°C pathway</p>	<p>Set a separate removal target in line with the global need to increase removals as part of a 1.5°C pathway</p>	<p>Set a GHG emission reduction target to reduce scope 1, 2, and 3 emissions in line with a 1.5°C pathway</p>	<p>Set land use targets (e.g., using land occupation expressed as hectares) at a level ambitious enough to avoid contributing to land use change as demand for land-based products grows</p> <p>This level of ambition should be in line with a 1.5°C pathway, recognizing the global need to produce food, feed, and fiber on existing agricultural lands, protect remaining natural and semi-natural ecosystems, reduce demand for land-intensive goods, and restore degraded ecosystems and marginal agricultural land</p>
Progress in reaching target	<p>Companies should establish a comprehensive inventory and data management system to enable ongoing monitoring, reporting, and verification.</p> <p>Companies should compile a GHG inventory annually, undertake third-party assurance, and report the inventory and progress toward targets publicly on an annual basis.</p>			

Note: a. These targets are recommended if companies either set a net emissions target that includes land management CO₂ removals on agricultural lands and/or set a target that excludes biogenic product CO₂ emissions (e.g., by treating biomass combustion emissions as zero).

Table 17.3(b) Recommendations for setting targets by target type (continued)

	Gross CO ₂ flux targets	Product carbon storage
Target boundary	Set gross CO ₂ targets that include biogenic product CO ₂ emissions and TCDR-based CO ₂ emissions, if relevant If including carbon capture and/or removals with geologic storage, set targets that include gross CO ₂ emissions from geologic storage	If product carbon storage is relevant to the company's value chain, set a product carbon storage target
Target type	<i>See corresponding row in Table 17.3(a)</i>	
Target base year/period	<i>See corresponding row in Table 17.3(a)</i>	
Target year (single or multi-year)	<i>See corresponding row in Table 17.3(a)</i>	
Target level	Set a biogenic product CO ₂ emission target to reduce scope 1, 2, and 3 biogenic product CO ₂ emissions in line with a 1.5°C pathway If relevant, set a TCDR-based CO ₂ emission target to reduce scope 1, 2, and 3 TCDR-based CO ₂ emissions in line with a 1.5°C pathway If relevant, set a target to prevent any gross CO ₂ emissions from geologic storage	Set a separate product carbon storage target in line with the global need to increase product carbon storage as part of a 1.5°C pathway
Progress in reaching target	<i>See corresponding row in Table 17.3(a)</i>	

17.4.2.1 GHG emission reduction targets that include land emissions

The guidance in this section should be used when companies set emission reduction targets that include land emissions.

DETERMINE WHICH EMISSIONS TARGETS TO SET

Companies with land sector activities in their operations or value chain should set a GHG emission reduction target that includes land sector emissions. Companies should set separate emission reduction sub-targets for fossil fuel and industrial emissions and land emissions. Separate emission reduction targets are recommended due to the higher variability, higher levels of uncertainty, and natural (non-anthropogenic) influence on land carbon stock changes, compared to fossil fuel and industrial emissions. Companies may also set an overall GHG emission reduction target that includes land GHG emissions and fossil fuel and industrial GHG emissions.

DEFINE THE EMISSION TARGET BOUNDARY

To ensure comprehensive coverage and GHG management, companies should include all emissions reported in the GHG inventory in the target boundary. Companies can do this by setting multiple disaggregated sub-targets and/or comprehensive targets that include all relevant accounting categories.

In general, setting multiple disaggregated sub-targets can increase transparency, provide more detailed information for decision making, and can more easily highlight connections between performance and specific activities. Separate targets for each scope, or for each scope 3 category, can be designed around unique mitigation opportunities for each scope or category and provide additional transparency to stakeholders. On

the other hand, disaggregated targets can increase complexity and make data collection and communication more difficult. Fewer, more aggregated targets are simpler to communicate and more flexible, but provide less transparency and detail for decision making.

To maximize the benefits of both approaches, companies should set a series of disaggregated sub-targets that are also aggregated to comprehensive targets. By doing so, the company can track and demonstrate overall progress—which is easier to communicate—as well as more detailed progress. In all cases, companies should ensure comprehensive coverage of GHG emissions in the target boundary and ensure transparent and disaggregated reporting.

For disaggregated sub-targets, land sector companies should set emission reduction sub-targets as relevant to the reporting company for:

- Scope 1 fossil fuel and industrial emission reductions
- Scope 1 land emission reductions
- Scope 2 fossil fuel and industrial emission reductions
- Scope 3 fossil fuel and industrial emission reductions (by scope 3 category)
- Scope 3 land emission reductions (by scope 3 category).

In addition, companies can set broader, comprehensive targets that aggregate the sub-targets for communication purposes. Companies can do this by setting either:

- Separate targets for scope 1 emissions, scope 2 emissions, and scope 3 emissions (following the *Scope 3 Standard*), which together cover all scope 1, 2, and 3 emissions, and so that scope 1, 2, and 3 emissions include land emissions following this *Standard*; or
- A single comprehensive GHG emission reduction target that includes all scope 1, 2, and 3 emissions (following the *Scope 3 Standard*), so that scope 1, 2, and 3 emissions include land emissions following this *Standard*.

Fossil fuel and industrial emission reduction targets include GHG emissions for the following accounting subcategories:

- Stationary combustion GHG emissions
- Mobile combustion GHG emissions
- Process GHG emissions
- Fugitive GHG emissions

Land emission reduction targets include GHG emissions for the following accounting subcategories:

- Land use change emissions
- Land management net biogenic CO₂ emissions
- Land management production emissions
- Biogenic CH₄ and N₂O emissions, and in certain cases biogenic CO₂ emissions (see Requirement 17 for details)

If companies set targets that exclude biogenic product CO₂ emissions (e.g., by treating biomass combustion emissions as zero), they should include leakage in the relevant target(s).

17.4.2.2 Removals targets

The guidance in this section should be used when companies set removals targets.

DETERMINE WHICH REMOVALS TARGETS TO SET

Companies that report removals in their GHG inventory should set a separate target for increasing removals or a separate net target that includes emissions and removals, following requirements set by a regulation or target-setting program. Such targets are in addition to and separate from setting an emission reduction target.

Removals targets can include:

- A CO₂ removals with geologic storage target to increase removals stored in geologic reservoirs.
- A land management CO₂ removals target to increase removals stored in land-based carbon pools.

Both emission reductions and removals are needed to meet global climate goals. Setting separate emission reduction and removals targets or separate emission reduction and net targets ensures that companies do not substitute necessary emission reductions with removals, but instead pursue both emission reduction and removal enhancement in line with 1.5°C pathways.

DEFINE THE REMOVALS TARGET BOUNDARY

The removals target boundary defines which removals, scopes, sectors, geographic operations, sinks, pools, and activities are covered by the removal target. Companies should determine which types of removals (see Chapters 12–14 for details) to include in the removal target boundary and may set a combination of targets and sub-targets. They should disclose and justify which types of removals are included.

Companies that report scope 1 removals and/or scope 3 removals should determine which removals across scopes to include in the removal target boundary. Companies should set separate sub-targets for scope 1 removals and scope 3 removals.

Companies that report land management CO₂ removals and removals with geologic storage should set separate sub-targets for increasing land management CO₂ removals and removals with geologic storage. Where relevant, companies should also set separate sub-targets for captured biogenic CO₂ with geologic storage and technological CO₂ removals with geologic storage.

Companies should only include removals in the removals target boundary that meet the permanence principle, using either a physical or monitoring approach to permanence, as described in Table 17.4.

Table 17.4 Approaches to permanence

Approach	Definition
Physical approach to permanence	Removals that permanently remove CO ₂ from the atmosphere and store the CO ₂ in non-atmospheric pools for timescales equivalent to the atmospheric lifetime of CO ₂ .
Monitoring approach to permanence	Removals that meet all requirements in Chapters 12–14 to implement a storage monitoring framework (i.e., ongoing storage monitoring, traceability, primary data, uncertainty, and reversals accounting), to reflect the company’s contribution to the global carbon budget and cumulative emissions which drive long-term temperature change.

Permanent removals can balance emissions to the atmosphere by reducing cumulative CO₂ in the atmosphere and improving the global carbon budget. In contrast, temporary carbon storage does not reduce cumulative emissions and improve the global carbon budget due to the eventual release of stored carbon (e.g., carbon temporarily stored in annual crop biomass or in packaging materials derived from agricultural products that eventually will decompose and return to the atmosphere). Therefore, temporary carbon storage should not be mixed in a target boundary with emissions and removals that contribute to limiting cumulative emissions.

Dynamic carbon accounting methods that quantify temporary carbon storage (e.g., tonne-year accounting) cannot be used to account for and report removals in this *Standard*. If companies account for temporary carbon storage using dynamic methods, they must report such information separately from the physical GHG inventory. For a discussion of the climate impact of CO₂ removals and dynamic carbon accounting methods for temporary carbon storage, see Section 12.4.5 and Box 12.1.

Companies should follow the rules set by regulations or target-setting programs for net targets, which may limit the eligibility of removals included in a company’s net targets. For example, programs may limit removals to those that:

- Meet requirements beyond those included in Chapters 12–14 (e.g., more specific monitoring, traceability, or data quality requirements);
- Meet additionality requirements (removals that result from the company’s mitigation efforts, rather than removals that would have occurred otherwise); and/or
- Are physically permanent (removals stored for timescales equivalent to the atmospheric lifetime of CO₂ or other GHG that the removal is neutralizing, such as removals with permanent geologic storage).

DECIDE ON THE REMOVAL TARGET LEVEL

The removal target level is the numerical value of the target, expressed as an absolute level of removals or a percentage increase in removals relative to the target base year or period, and represents the level of ambition of the removal or net target. When setting net targets, the target balance of emissions and removals can be positive, zero, or negative. Table 17.5 outlines three types of net targets.

Table 17.5 Types of net targets

Targets to achieve	Definition
Reduced net emissions	A target level of net emissions where emissions exceed removals within the target boundary, and emissions are reduced from a base year or period.
Net-zero emissions	A target level of net emissions where emissions equal removals within the target boundary, where emissions are reduced in line with 1.5°C pathways, and removals are used to neutralize residual emissions.
Net-negative emissions	A target level of net emissions where removals exceed emissions within the target boundary, where emissions are reduced in line with 1.5°C pathways, and removals are used to neutralize residual emissions.

To inform the numerical value of the target, companies should examine potential removal enhancement opportunities and estimate their effects on total removals. Companies should set an ambitious target that increases removals significantly above the company’s business-as-usual removal trajectory.

Companies should set targets in line with 1.5°C pathways.⁶ A goal in line with the best available climate science can drive greater innovation within the company and the value chain and can be seen as most credible by stakeholders. Given this context, companies should set targets to reach not only net-zero emissions but ultimately net-negative emissions. For more information on net-zero targets, refer to the Science Based Targets initiative's Net-Zero Standard.⁷

If companies set net targets that include removals associated with agricultural land use and/or exclude biogenic product CO₂ emissions (e.g., by treating biomass combustion emissions as zero), they should include land carbon leakage in the relevant target(s).

17.4.2.3 Land use targets

The guidance in this section should be used when companies set land use targets.

DETERMINE WHICH LAND USE TARGETS TO SET

Companies should set land use targets. Setting land use targets that supplement emission reduction and removals targets can help ensure company decisions encourage efficient uses of land and reduce overall pressure on the world's finite land resource and carbon-rich ecosystems, benefiting the global climate. Since mitigation pathways for stabilizing the climate require both halting deforestation and other land conversion *and* restoring natural ecosystems on existing agricultural land, companies should avoid increases in land use. Instead, they should ideally work towards reducing their scope 1 and scope 3 agricultural land use over time. To achieve this, companies can set an absolute target to decrease land use or hold land use constant.

For consistency, the target boundary, base year or period, target year(s), and choice of single- versus multi-year targets for land use targets should mirror how companies establish their emissions reduction target(s). Depending on the land use metric, the corresponding target type (absolute or intensity) and target level may be different from emissions or removals targets. If companies set land use targets, a different target level is warranted because 1.5°C pathways do not require a global elimination of productive land use but, instead, a peaking and subsequent reduction over time (i.e., at levels necessary to halt deforestation and allow for some reforestation in 1.5°C pathways). For example, a company that seeks to reduce their scope 1, 2, and 3 emissions by 30 percent by 2030 and 70 percent by 2050, relative to a 2019 baseline, might seek to hold their land use constant between 2019 and 2030 (i.e., in line with the goal to halt deforestation by 2030) and reduce it by 10 percent by 2050 (in support of global ecosystem restoration goals).



Target-setting guidance specific to each land use metric (land occupation and carbon opportunity cost of land use) is provided below. In general, companies should set land use targets at a level ambitious enough to avoid contributing to land use change as global demand for land-based products grows. This level of ambition should be in line with the global need to produce food, feed, and fiber on existing agricultural lands, protect remaining natural and semi-natural ecosystems, reduce demand for land-intensive goods, and restore degraded ecosystems and marginal agricultural land.

DECIDE ON THE LAND OCCUPATION TARGET LEVEL

Land occupation measures the area (in hectares) required to produce the agricultural products produced (scope 1) or sourced (scope 3) by a company. The need for land to produce agricultural products means that this metric can never be reduced to zero unless a company stops producing or sourcing land-based products. In line with the need to halt deforestation and free up land for ecosystem restoration, companies should set targets to not increase land occupation over time, and ideally reduce land occupation in line with global climate goals. The Science Based Targets Network (SBTN) requires companies that set an absolute land occupation reduction target to reduce land occupation at a linear rate of 0.35 percent per year (in line with a global 10.6 percent reduction in agricultural land occupation by 2050, relative to 2020).⁸

For companies that project significant business growth, an intensity target may be most appropriate, which can be expressed in yield (e.g., food produced per hectare) or in terms of land occupation intensity (e.g., hectares per unit of food). Companies should set a corporate yield target aligned with broader (e.g., global or national) targets for yield growth needed to meet future food needs without additional agricultural land expansion. In general, if yields on lands producing a company's products grow at an equal or faster rate than the national or global demand for those land-based products, a company can contribute enough to increases in global productivity and land use efficiency to avoid adding additional land conversion pressure on natural ecosystems.

For example, if a company estimates that global food demand will grow by 15 percent between 2020 and 2030, then the company should also seek to increase its yields by at least 15 percent. SBTN requires companies that set a land occupation intensity target to reduce land occupation per kg of agricultural products by 1 percent per year on a linear basis, corresponding to a needed 45 percent growth in global agricultural productivity by 2050 relative to 2017.⁹

DECIDE ON THE CARBON OPPORTUNITY COST OF LAND USE TARGET LEVEL

The carbon opportunity cost (COC) of land use measures the total historical carbon stock losses that have occurred on productive agricultural lands in a company's operations or value chain. Tracking land use not only in units of hectares, but also in units of CO₂e using the COC metric, can reveal important information about climate-efficient land use decisions.

For example, increasing yields on land with low- or high-carbon storage capacity is reported as an equal reduction in land occupation per unit of product (i.e., reported in hectares). By tracking only hectares, the climate benefit of increasing the productivity of a low-yielding crop on high-carbon-value lands (i.e., increasing the efficiency of land use, from a carbon perspective) is understated and may be discounted or not considered in decision making. Expressed in terms of the land's COC, the benefit of increasing productivity and land use efficiency, especially on high-carbon-value lands, is revealed. As global demand for land-based products grows, more efficient production of a crop or livestock product means that there is less pressure elsewhere to clear additional land to produce that product. Tracking land use in terms of its COC captures this climate benefit.

There is almost always a COC to using land for agricultural or other land-based (e.g., energy) activities. Therefore, the COC of land use, by definition, cannot be reduced to zero unless the company stops producing or sourcing land-based products entirely. Companies can set absolute and/or intensity reduction targets for their COC of

land use. The level of absolute and intensity targets should be set according to the level of ambition that is needed to avoid contributing to global net land use change as global demand for land-based products grows. Absolute targets should be set proportionally to the needed reductions in agricultural land use, and intensity targets should be set proportionally to the needed reductions in agricultural land use per unit of product (i.e., the reciprocal of needed productivity growth per hectare), to avoid contributing to global land use change. In line with the Science Based Targets Network (SBTN) approach to land occupation targets, companies may consider setting absolute COC of land use targets with reductions of 0.35 percent per year, or intensity by 1 percent per year, on a linear basis.

If companies set intensity targets for their COC of land use, they may consider deducting any annual declines in the intensity of their COC of land use exceeding their target rate from their total land emissions for the purpose of tracking progress against emissions targets. For example, if a company that produces soy sets a target to reduce its COC of land use intensity by 10 percent by 2030 relative to 2020, but exceeds this target and achieves a 12 percent reduction in 2030, they may consider deducting the excess 2 percent from their total land emissions intensity in 2030 for the purpose of tracking progress against the emissions intensity target.

Companies accounting for COC of land use may choose to set net emissions reduction targets that aggregate COC of land use with other emissions (and, optionally, land management CO₂ removals), and track and report progress toward these targets (see the case study in Chapter 8 for an example of a target that aggregates carbon opportunity cost of land use with other emissions). Tracking the aggregate of emissions and COC of land use

over time can be useful to inform decision making and ensure that actions the company is taking to reduce emissions are not having a harmful effect via increased land use, and vice versa. To evaluate the aggregate impact of any individual action (e.g., shifting the mix of products purchased, changing land management practices in ways that affect emissions, yields, and carbon stocks), companies can use the intervention accounting methods described in Chapter 16.

If companies do set net emissions reduction targets that aggregate COC of land use with other emissions (and, optionally, removals), there is potential to double-count carbon losses as both (direct or statistical) land use change emissions and a change in the COC of land use. Changes in the COC of land use can potentially also double-count carbon losses and gains that are accounted for in the inventory as land management net biogenic CO₂ emissions or land management CO₂ removals (see Chapters 9 and 13, respectively). In such cases, companies should deduct any double-counted land emissions and removals from scope 1 or 3 COC of land use for target setting and tracking purposes. For aggregate targets that include the COC of land use, land carbon leakage should not be counted, in order to avoid double-counting between the COC of land use and land carbon leakage.



17.4.2.4 Inclusion of land carbon leakage in targets under relevant conditions

The guidance in this section should be used when companies set targets that include leakage.

DETERMINE WHICH TARGETS TO SET THAT INCLUDE LAND CARBON LEAKAGE

Companies should set targets that include land carbon leakage when it is relevant to their operations or value chain (see Chapter 8).

Companies subject to regulations or that are participating in target-setting programs must follow the requirements set by the regulation or program, including requirements related to leakage. Regulations and target-setting programs should include leakage quantification in emissions target(s) and net target(s) for companies that are required to report land carbon leakage.

DEFINE THE TARGET BOUNDARY THAT INCLUDES LAND CARBON LEAKAGE

Companies subject to regulations or that are participating in target-setting programs must include leakage in the target boundary using metrics to quantify leakage following the requirements set by the regulation or program.

Companies that set emissions targets (and/or net targets) but do not participate in target-setting or regulatory programs, and that are required to report land carbon leakage (see Requirement 13), should include the “total emissions” accounting category in the target boundary for relevant emissions targets (and/or net targets). “Total emissions” is an aggregate accounting category that includes the sum of fossil fuel and industrial emissions, land emissions, and land carbon leakage (see Requirement 32 for details).

For example, consider an airline that has an emissions target but does not participate in any target-setting program. If the company shifts away from purchasing fossil jet fuel toward purchasing crop-based biofuels, it would be required to quantify land carbon leakage due to this high-leakage-risk activity (i.e., use of agricultural products for non-food, non-feed use; see Chapter 8) and thus should also include leakage quantification in its emissions targets. To do this, it should include the “total emissions” accounting category (which includes land carbon leakage associated with displaced crop production) in its target boundary. See Table 20.1 in Chapter 20 for an example of calculating the “total emissions” category.

17.4.2.5 Gross CO₂ emissions and gross CO₂ removals targets or sub-targets

The guidance in this section should be used when companies set targets for gross CO₂ emissions and gross CO₂ removals, as relevant.

Land sector companies should set targets for net CO₂ emissions and net CO₂ removals using stock change accounting. As a means of meeting those targets, companies can also set sub-targets to reduce gross biogenic land CO₂ emissions and to increase gross biogenic land CO₂ removals.

Land sector companies should supplement their land emission reduction targets with targets for gross CO₂ fluxes, including targets to reduce biogenic product emissions released at the point of combustion or decomposition. Setting targets for biogenic product emissions focuses GHG mitigation efforts at the point when CO₂ is transferred to the atmosphere, which mirrors the approach used in non-land sectors. This approach places the emphasis on the entities that own or control sources that emit CO₂ directly to the atmosphere to reduce their emissions. Reducing both net biogenic CO₂ emissions associated with land carbon stock losses and gross biogenic product emissions from the combustion or decomposition of products contributes to reducing CO₂ emissions to the atmosphere.



To help meet these targets, companies should reduce the life cycle GHG emissions associated with biogenic products across the value chain (scopes 1, 2, and 3) and choose materials and fuels with the lowest net life cycle emissions, as well as the lowest impact on land use and land carbon leakage. Company efforts to reduce net biogenic emissions should be taken in the broader context of reducing emissions from all sources, including fossil fuel combustion, rather than substituting reductions in one sector with increases in another. Such trade-offs can be avoided by setting multiple targets that together cover all of a company's GHG impacts.

Similarly, companies that have TCDR-based products in their operations or value chain should supplement their fossil fuel and industrial emission reduction targets with targets to reduce TCDR-based product emissions released at the point of combustion or decomposition.

17.4.2.6 Product carbon storage targets

The guidance in this section should be used when companies set targets for carbon stored in product carbon pools (i.e., product carbon storage). If relevant, companies may set separate targets for increasing product carbon storage. This category applies to CO₂ removed from the atmosphere (through biogenic or technological CO₂ removal processes) and stored in product carbon pools with a temporary storage time or when the permanence requirements for removals in Chapters 12–14 are not met.

While permanent carbon storage contributes to reducing cumulative CO₂ in the atmosphere, temporary carbon storage does not. This is because the carbon is, by definition, stored temporarily and emitted in the future. As described in Section 17.4.2.2, product carbon storage and removals with temporary carbon storage (i.e., where permanence requirements are not met, whether stored in land or geologic carbon pools) do not contribute to reducing cumulative CO₂ in the atmosphere, due to lack of equivalence with emissions included in the target boundary. For product carbon storage to be equivalent to CO₂ emissions or removals, this requires an understanding of the long-term fate of products through their end-of-life stage across the value chain. In most cases, it is not feasible for agricultural and TCDR-based products to meet the permanence, traceability, and data quality-related removals requirements. Therefore, targets for product carbon storage must be set separately from emissions and removals targets or net targets that include removals.

While temporary carbon storage is not equivalent to CO₂ removals that meet the permanence principle, temporary carbon storage can provide some benefit to the climate. Temporarily storing removed CO₂ in product carbon pools delays emissions to the atmosphere, which can slow the rate of warming, give society time to deploy permanent climate change mitigation options, and give both society and natural ecosystems time to adapt to climate change.

A product carbon storage target can include product carbon pools such as longer-lived agricultural products or direct air capture CO₂-based products. Tracking progress towards such targets includes both product carbon stock increases and decreases for relevant products. Product carbon storage targets can encourage shifts to producing longer-lived products, extending product lifetimes, and promoting reuse, recycling, and circular economy strategies.

17.4.2.7 External compensation or contribution targets

The guidance in this section should be used when companies supplement GHG targets with additional mitigation external to the target boundary.

DETERMINE WHICH COMPENSATION OR CONTRIBUTION TARGET TO SET

Companies can supplement GHG targets with additional mitigation external to the target boundary. This can be in the form of external compensation targets or contribution targets, as described in Table 17.6. Requirement 29 in the *Standard* sets forth the principles that GHG credits used toward external mitigation targets must meet.

Table 17.6 Compensation and contribution targets

Target type	Description
Compensation target	A target for achieving mitigation external to the target boundary through purchasing and retiring GHG credits (also called offsets or carbon credits) to compensate for annual or cumulative unabated emissions in the target boundary, if allowed under the relevant target-setting program or target-setting policy.
Contribution or financing target	A target for contributing to financing GHG mitigation outside the company’s target boundary, through financing or purchasing and retiring GHG credits applied against contribution targets (without using GHG credits as offsets or compensation) or other financial support for climate action.

COMPENSATION TARGETS

Compensation refers to compensating for the company’s annual or cumulative unabated emissions while the company is on a pathway to meeting its GHG targets. A GHG emission reduction target should be met entirely from reducing emissions from the sources included in the target boundary (e.g., across scope 1, 2, and 3 emissions). A removals target (or net target) should be met by removal enhancements (and if applicable, emission reductions) from sinks where removed CO₂ is stored in carbon pools within the target boundary (e.g., across scope 1 and scope 3 removals).

As a supplement to emission reduction targets and removal or net targets, companies may set separate targets for external compensation to be met through purchasing and retiring GHG credits (generated from projects or activities that reduce emissions or enhance removals from sources/sinks external to the target boundary). In line with a mitigation hierarchy, companies should prioritize implementing actions to reduce emissions and increase removals within their operations and value chain (scopes 1, 2, and 3) to the maximum extent possible, rather than purchasing GHG credits.

Any use of GHG credits as compensation or neutralization should be consistent with GHG programs. For example, the Voluntary Carbon Markets Integrity (VCMI) initiative provides guidance on how companies can set external compensation targets using GHG credits as part of credible, science-aligned, net-zero decarbonization pathways. The Science Based Targets initiative's (SBTi) Corporate Net-Zero Standard (version 1) only allows removals credits to be used to neutralize a company's residual emissions (i.e., the emissions that remain after companies have achieved their long-term science-based target, and thereafter). SBTi also recommends that companies take action or make investments outside their own value chain to mitigate GHG emissions in addition to their science-based targets, as a supplement to decarbonizing in line with a 1.5°C pathway.

Companies may set external compensation targets that include all historical unabated emissions of the company. For such targets, compensation for cumulative unabated emissions involves compensating for all historical emissions reported by the company. Where companies choose to set external compensation targets for annual unabated emissions, compensation should cover multiple consecutive years (i.e., in the form of a multi-year target, as explained in Section 17.4.1 and Table 17.3), rather than only a single target year. For example, VCMI's Claims Code of Practice (version 3.0) establishes thresholds for silver, gold, and platinum claims based on the percentage of high-quality GHG credits retired relative to the emissions that remain in a given year as a company tracks progress toward short- and long-term targets.¹⁰

When accounting for and reporting on compensation targets, companies are required to separately report any GHG credits issued within the company's organizational boundary or value chain (to avoid potential double counting within their GHG inventory; see Requirement 30 for details) and GHG credits used against their compensation target, following the reporting requirements in Section 18.2.2. They must also specify the types of GHG credits, the GHG crediting program, the protocols and quantification methodologies, the country of origin, and other relevant information about such GHG credits.

As set forth in Requirement 30, companies are required to avoid the double counting of GHG credits by multiple entities (i.e., companies using GHG credits toward a compensation target and companies quantifying lower scope 3 emissions associated with the same mitigation activities). Double counting can be avoided through contracts between buyers and sellers that transfer ownership of GHG credits, and by calculating emissions and removals values adjusted for issued GHG credits.

CONTRIBUTION OR FINANCING TARGETS

As a supplement to emission reduction targets and removal or net targets, companies can also consider investing in GHG credits to achieve additional GHG mitigation or other financial support for climate change mitigation outside the company's GHG target boundary, rather than using GHG credits as compensation. Companies can do so by retiring GHG credits as part of their contribution or financing targets.

GHG credits used toward contribution or financing targets represent contributions a company makes to achieving GHG mitigation outside the company's inventory, without being used as compensation. Under this approach, companies can finance climate action or purchase and retire GHG credits in units of tCO₂e (e.g., results-based climate finance). Such retired GHG credits may be referred to as "financed reductions or removals," "financed GHG mitigation," or other claims not related to the achievement of the company's GHG target.

Offset credits that are retired and applied towards compensation targets require avoidance of double counting between entities. GHG credits used towards contribution or financing targets do not require avoidance of double counting, since the credits are not counted toward more than one entity's GHG or compensation target. For more information, see Chapter 18.

17.4.3 Base period or base year recalculations to enable consistent performance tracking over time

Companies should calculate base period or base year emissions, removals, and other metrics by following the requirements and recommendations in this *Standard* and *Guidance*, in addition to the GHG Protocol *Corporate Standard* and *Scope 3 Standard*. Base period or base year recalculation following a company's base period or base year recalculation policy enables meaningful comparisons over time.

For more information on tracking performance over time, see:

- The *Corporate Standard, Revised Edition* (Chapter 5: Tracking Emissions Over Time)
- The *Corporate Standard, Revised Edition* (Appendix E: "Base year recalculation methodologies for structural changes")¹¹
- The *Scope 3 Standard* (Chapter 9: Setting a GHG Reduction Target and Tracking Emissions Over Time)
- GHG Protocol's *Mitigation Goal Standard*¹² (Chapters 6–9)

Recalculations for changes in calculation methods or improvements in data quality

Companies should seek to improve the quality of the data and calculation methods they use over time to track changes in emissions, removals, and other metrics (see Chapter 6). Methods and data to account for land sector emissions, removals, and other metrics are evolving rapidly, and companies are encouraged to continually improve quantification methods and data sources over time.

Improvements in technology, time representativeness, spatial resolution, completeness, and reliability of data and calculation methods can all improve accuracy. However, changes in data or methods can also lead to illusory "trends" in emissions, removals, or other metrics if the new data or methods lead to a result that reflects methodological changes rather than changes in actual emissions, removals, or other metrics.

Companies are required to retroactively recalculate base period or base year emissions, removals, and other metrics when significant changes occur to the data or methods used or if significant errors are discovered in earlier estimates. For example, this may apply in the case of a company that previously reported land use change emissions using secondary data and the statistical land use change (sLUC) method, but which later gains access to primary data from specific land management units the company sources from, and now uses primary data and the direct land use change (dLUC) method to calculate land use change emissions (see Chapter 7 for additional details).



If primary data is not available for the historical base year, companies may need to use proxy data or estimates to complement available primary data. Companies should use conservative assumptions and report the data and assumptions used.

Recalculations for structural changes in ownership or control

Companies are also required to retroactively recalculate base period or base year emissions, removals, and other metrics when significant structural changes occur in the reporting organization, such as mergers, acquisitions, or divestments. Structural changes trigger recalculation because they merely transfer emissions and removals from one company to another without any change in GHGs released to or removed from the atmosphere, or any change in other metrics.

For example, if a company purchases or acquires new lands that have a significant impact on the inventory, the company is required to recalculate its base period or base year emissions, removals, and other metrics by adding the emissions, removals, and other metrics associated with the purchased land to the company's base year inventory. Doing so allows the company and its stakeholders to understand that the apparent change in emissions, removals, and other metrics is a result of a structural change rather than a change in practices that affect the climate.

If a structural change leads to a situation where a change in target(s) is necessary to maintain a high level of ambition, companies should set a new target that corresponds to that high level of ambition. Companies should disclose and justify such changes.

Recalculations for outsourcing or insourcing

Scope 3 emissions and removals include outsourced activities. If a company is reporting comprehensively on scopes 1, 2, and 3, a change in ownership or control can have the effect of shifting activities that result in GHG emissions or removals between the scopes.

If a company outsources an in-house activity to a third party, the activity shifts from scope 1 or 2 to scope 3. Conversely, a company may shift emissions or removals from scope 3 to scope 1 or 2 by performing operations in-house that were previously performed by a third party.

Whether a base year recalculation is triggered by the outsourcing or insourcing of an activity depends on whether:

- The company previously reported emissions and/or removals from the activity;
- The company has a single base year and GHG target for all scopes or separate base years and GHG targets for each scope; and
- The outsourced or insourced activity contributes significantly to the company's emissions, removals, and/or other metric(s).

Recalculations for changes in the activities included in the inventory over time

Companies may add new activities or change the activities included in the inventory over time, affecting estimates of total emissions, removals, and other metrics. If the cumulative effect of adding or changing categories or activities is significant, the company should include the new or changed categories or activities in the base year inventory and backcast data for the base year based on available historical activity data (e.g., bill of materials data, spend data, or product sales data).

Endnotes

- 1 This text includes elements that may change to align with the resolution on forest carbon accounting, and therefore target setting, in future versions of this *Standard*. See Box 9.1.
- 2 The *GHG Protocol Mitigation Goal Standard* is intended primarily for national and subnational government agencies involved in setting and tracking mitigation goals, but companies and other organizations may also find the guidance useful when designing and tracking progress toward targets.
- 3 Adapted from the *GHG Protocol Mitigation Goal Standard*.
- 4 To limit warming to 1.5°C, global CO₂ emissions across all sectors need to be halved by 2030 from 2010 levels and reach net-zero emissions by around 2050. Methane and nitrous oxide emissions also need to be greatly reduced globally to limit warming to 1.5°C (IPCC 2018).
- 5 Available at <https://sciencebasedtargets.org>.
- 6 To limit warming to 1.5°C, global CO₂ emissions across all sectors need to be halved by 2030 from 2010 levels and reach net-zero emissions by around 2050. After reaching net-zero emissions globally, the world needs to achieve net-negative emissions to limit warming to 1.5°C. Methane and nitrous oxide emissions also need to be greatly reduced globally to limit warming to 1.5°C (IPCC 2018).
- 7 Available at <https://sciencebasedtargets.org/net-zero>.
- 8 For more information on SBTN's land footprint reduction target, see: [Land Footprint Reduction – Science Based Targets Network](#).
- 9 For more information on SBTN's land footprint reduction target, see: [Land Footprint Reduction – Science Based Targets Network](#).
- 10 VCMi 2025.
- 11 Available at <https://ghgprotocol.org/corporate-standard>.
- 12 The *GHG Protocol Mitigation Goal Standard* is intended primarily for national and subnational government agencies involved in setting and tracking mitigation goals, but companies and other organizations may also find the guidance useful when designing and tracking progress toward targets.

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