

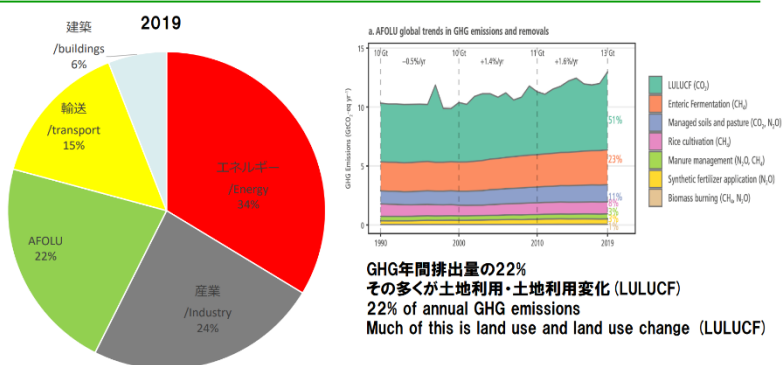
Presentation Outline

Methods for calculating biogenic carbon emissions in GHG Protocol and SBT

Dr. Kae Takase (Senior Coordinator at Renewable Energy Institute)

Land-related emissions are more than 20%

土地関連排出量はこんなに多い/How high Land-related emissions are



• According to the IPCC data, land-related emissions are 22% in 2019. About half of these emissions come from "land use, land use change, and forestry," so it is necessary to reduce these emissions as a measure against climate change.

Source: IPCC, Climate Change 2022: Mitigation of Climate Change (Chapter 7)

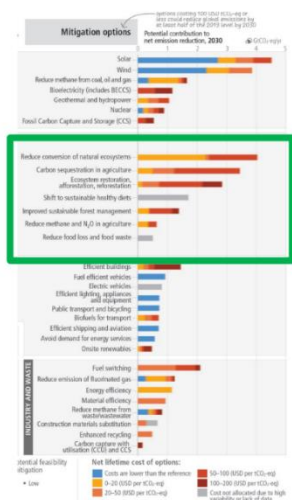
*AFOLU: Agriculture Forestry, and other Land Use

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The contribution of the land sector (AFOLU) to mitigate climate change is 20-30% (by 2030)

気候変動対策の20-30%は土地セクターで/ 20-30% of climate action is in the land sector



■左図は2030年までの緩和ポテンシャルとそのコスト。The figure on the left shows mitigation potential and costs by 2030.
■土地セクターの対策は、100ドル以下で多くの対策が可能。Many measures in the land sector can be implemented for less than \$100.

以下の対策を進めることは重要
- 土地転換を減らす
- 農業における炭素隔離
- 生態系回復、植林、森林修復
- 持続可能な森林管理の進展

Important to promote :
- Reduce conversion
- carbon sequestration in agriculture
- Ecosystem restoration, afforestation, reforestation
- Improved sustainable forest management

Source: IPCC, AR6 Synthesis Report, Climate Change2023

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【October 5, 2023】 PRI in Person 2023 Official Side Event~Missing CO2 Emissions from Forests in Woody Biomass Power and Co-firing with Coal

The contribution of the land sector (AFOLU) to limiting global warming to 1.5 degrees or 2 degrees is, according to the IPCC report, approximately 20-30%

- For example, it is important to promote such measures as
 - Reduce conversion
 - Carbon sequestration in agriculture
 - Ecosystem restoration, afforestation, reforestation
 - Improved sustainable forest management
- These measures are gaining attention because there is no need to wait for technological development and they can be implemented immediately over the next 10 years.

Two new frameworks regarding accounting of land-related emissions

① GHG Protocol, "Land Sector & Removals Guidance."

The draft has already been released. The process of public consultation and pilot testing is over. It is expected to come out next year.

② SBT (Science Based Targets) Forests, Land, & Agriculture (FLAG) Guidance

It requires the target setting for the land sector separately. The final version was published in September of last year.

The basics of GHG Protocol, "Land Sector & Removals Guidance"


- ① All companies must calculate.
- ② Whether a company includes removal or not is optional. *Strict requirements applies to accounting of removals.
- ③ Companies are required to calculate all Scope 1, 2, and 3.
- ④ Land sector and removals are based on stock-change calculation, which is about "how much the amount of stock has changed?" and "Which is larger after subtracting removals from emissions?"
In addition to stock-change, gross emissions, that is, emissions alone, also need to be disclosed.

* Scope 1; Emissions from operations or lands owned or controlled by the reporting company.

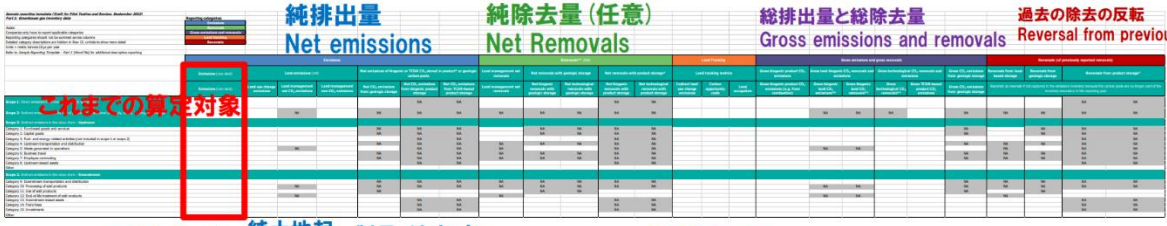
Scope 2; Emissions from the generation of purchased or acquired electricity, steam, heating, or cooling consumed by the reporting company.

Scope 3; All emissions (not included in scope 1, 2) that are a consequence of the activities of the reporting company but occur from operations or lands owned or controlled by another company.

GHG emissions accounting in future

これからのGHG排出量算定/What should corporates disclose ? 

- 主に、土地起源の純排出、製品・地中プールからの純排出を算定・開示。Net land-based emissions and net emissions from products and geological pools should be calculated and disclosed.
- 純除去量については、開示は任意。Removals are optional.
- 総排出量と総除去量も別途開示。Gross emissions and removals should be separately disclosed.



この表は、GHG排出量算定の詳細を示しています。主要な項目は以下の通りです：

- 純排出量 (Net emissions):** エネルギー/産業排出量 (Emissions from Energy/industry) と 純土地起源純排出量 (Emissions from land) を含む。
- 純除去量 (任意) (Net Removals):** 製品・地中プールからの純排出量 (Emissions from products and geological pool) を含む。
- 総排出量と総除去量 (Gross emissions and removals):** 総排出量と総除去量を別々に開示する必要がある。
- 過去の除去の反転 (Reversal from previous removal):** 過去の除去の反転を示す。

3つのうち1つ 関連指標を開示

- 間接的土地利用変化による排出量
- 炭素機会コスト
- 土地占有面積 (Land tracking metrics)

Net emissions/removal = Gross emissions - Gross Removal (+ for net emissions, - for net removal)
 純排出量/除去量 = 総排出量 - 総除去量 (+の場合、純排出、-の場合、純除去)

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• The only scope to be calculated so far was emissions from Energy/Industry, but the following will be introduced.

-Emissions from land: things like "converting a natural forest into a plantation or a pastureland" are losses of carbon stock, and those losses will be accounted for 20 years. Companies can choose either linear discounting or equal discounting, and companies that are buying something from a land area that has undergone land use changes or companies that own or operate on such a land must account for the loss. A company that owns such a land will report it in Scope 1, and a company that buys such goods will do so in Scope 3.


-Emissions from products and geological pool

- Net emissions are net, so removals are subtracted from gross emissions. When there is a change in stock, or the stock decreases, it means emissions. If the stock increases, it means a net removal, but reporting removals is optional.

-Gross emissions and gross removals should be disclosed separately before subtraction..

GHG Protocol, “Land Sector & Removals Guidance”

～A case of woody biomass power generation

木質バイオマス発電所の場合/Case study: wood biomass Electricity Generation 

1. 自然林を人工林に (Transfer natural forest to plantation): 土地利用変化分、20年間計上/should account for LUC (land use change) emissions allocated for 20 years.
2. 人工林を伐採しペレットに加工/Cut woods, make pellets.: 土地所有・管理企業の土地ベース炭素ストックが減少し、純土地起源排出量が出る。/ Land-based carbon stocks decrease, resulting in net land-based emissions.
3. ペレットを輸入し燃焼/Import and burn pellets: 輸入企業・燃焼企業のスコープ1総排出量/Generation company's Scope 1 gross emissions (スコープ3カテゴリ3も該当/scope 3 category 3 should apply)
4. 電力を購入/Purchase electricity: 購入企業のスコープ2 (スコープ3カテゴリ3も該当/scope 3 category 3 should apply)

純排出量 Net emissions		純除去量 (任意) Net Removals		総排出量と総除去量 Gross emissions and removals		過去の除去の反転 Reversal from previous removal	
これまでの算定対象							
エネルギー/産業排出量 Emissions from Energy/industry	純土地起源純排出量 Emissions from land	製品・地中プールからの純排出量 Emissions from products and geological pool	3つのうち1つ 関連指標を開示 ・ 間接的土地利用変化による排出量 ・ 炭素機会コスト (+ for net emissions, - for net removal) ・ 土地占有面積 Land tracking metrics				
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Net emissions/removal = Gross emissions - Gross Removal
 (+ for net emissions, - for net removal)
 純排出量/除去量 = 総排出量 - 総除去量
 (+の場合、純排出、-の場合、純除去)

- If a natural forest is turned into a plantation forest, that will be a change in land use, and emissions will be attributed to that land for 20 years.
- When a plantation forest is cut down and processed into pellets, and if total land-based carbon stocks of a reporting company decrease, it results in net land-based emissions.
- Companies that import and burn pellets have Scope 1 gross emissions and Scope 3 Category 3 gross emissions.
- When a company purchases electricity generated from woody biomass, it is Scope 2 and importantly, Scope 3 Category 3 also applies, meaning that emissions from transportation, processing, and drying of woody biomass come in here.

Requirements for accounting of removals

There are strict requirements when accounting for removals. The use of primary data, ensuring traceability and monitoring, and disclosure of any uncertainties will be required.

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Which companies must set SBT FLAG targets?

Starting from May of this year, these companies that set SBT targets must also set FLAG targets.

- Forest & Paper Products
 - Food Production - Agricultural Production
 - Food Production - Animal Source
 - Food & Beverage Processing
 - Food & Staples Retailing
 - Tobacco
- Companies in any other sectors that have FLAG related emissions totaling more than 20% of the company's overall emissions across scopes 1,2, and 3, must also set FLAG targets.

• SBTi recommends companies outside of conditions above to set FLAG targets.

→If companies choose not to set a FLAG target, FLAG-related emissions must still be included in the overall target boundary and accounted for, together with energy/industry (non-FLAG) targets.

→If a company choose not to set FLAG target, it cannot account for "removals." Companies that want to use "removals" must set FLAG targets.

SBT, GHG Protocol, and CDP already requires the reporting of emissions from bioenergy.

• For the past 2 to 3 years, SBT already requires companies to calculate emissions from bioenergy.

Emissions and removals from bioenergy combustion, processing, and distribution stages, as well as land use related to feedstock, must be reported separately from the inventory but included in the target.

• The current GHG Protocol also requires "dual reporting", so emissions from bioenergy do not have to be included in Scope 1, but they must be reported as well.

• CDP also has a section to report emissions from bioenergy.

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Characteristics of SBT FLAG

- Only the working land should be considered, meaning that a company cannot buy a land area somewhere else just for removals. Companies have to properly calculate emissions and removals only within its working land.

- A company must commit to “no deforestation” across the entire value chain, starting no later than December 2025. SBT recommends companies to follow AFi (Accountability Framework initiative) guidance for the definition of “no deforestation”. This means that it is not allowed to reduce forests in one place and increase them in another.

Summary

- Land emissions must be included in corporate GHG accounting after GHG Protocol publishes Land Sector and Removal guidance in 2024.

- It includes scope 3, therefore companies’ responsibility for procurement and investor's responsibility to decrease land-base emissions will be incorporated to GHG accountings.

- In SBT target setting, companies in relevant sectors need to set separate FLAG SBT targets. Other companies also need to include FLAG emissions to their GHG inventories and targets.

- Reporting based on the GHG Protocol Land Sector Removal Guidance, which will be finalized in 2024, are expected to be included in the ISSB, as ISSB refers to GHG Protocol.

- Encouraging to set SBTs and accounting aligned with GHG Protocol, making procurement or investment decisions with this transparent information, will be the key to evaluating companies without greenwashing.