



Green Gold Label: GHG Module GHG モジュール

Introduction on GHG certification module of the GGL scheme

GGLスキーム GHG認証のご紹介

Introduction

はじめに

- ▶ The GHG module of the GGL scheme entails rigorous standards on calculation and tracking of green-house gases and is in compliance with the requirements of METI, European Commission and the Dutch authorities
- ▶ GGLスキームのGHGモジュールは、温室効果ガスの計算と追跡に関する厳格な基準を含み、経済産業省、欧州委員会、オランダ当局の要件に準拠している。
- ▶ It is a user-friendly standard which is easily understandable and implementable for various participants in the sustainable biomass supply chains
- ▶ 持続可能なバイオマスサプライチェーンにおける様々な参加者にとって理解しやすく、実施しやすいユーザーフレンドリーな基準である。
- ▶ GGL is currently developing an intelligent online tool which facilitates calculation of GHG emissions based on our new standard for all participants
- ▶ GGLは現在、すべての参加者を対象に、新基準に基づくGHG排出量の算定を容易にするインテリジェントなオンラインツールを開発中である。
- ▶ the GGL methodology includes calculation of the GHG values either based on actual values of default values defined by METI or other regulators.
- ▶ GGLの方法論には、経済産業省または他の規制当局によって定義された既定値に基づいてGHG値を算定する方法が含まれる。
- ▶ The detailed methodology could be found in the new document "GGL GHG Module".
- ▶ 詳細な方法論は、新しい文書「GGL GHGモジュール」に記載されている。



GGL GHG Module

GGL GHGモジュール

- ▶ The GHG module of the GGL scheme is a new document which contains the information on whether and how carry out GHG calculations under GGL scheme.
- ▶ GGLスキームのGHGモジュールは、GGLスキームの下でGHG算定を行うかどうか、またどのように行うかに関する情報を含む新しい文書である。
- ▶ The development of the document is already complete.
- ▶ 文書は既に完成している。
- ▶ The document will be publicly published and implemented upon approval of METI and consultation with the GGL advisory council and stakeholders.
- ▶ この文書は、経済産業省の承認とGGL諮問委員会および利害関係者との協議を経て、一般に公表され、実施される。



GGL Module D GHG

1 Introduction

1.1

This document covers additional requirements to the **GGL Core Regulation** regarding greenhouse gas (GHG) emissions.

In specific regulatory market Modules (e.g., **GGL Module A REDII**) the scope of GHG emissions can be limited compared to the full scope that is described in this **GGL Module D GHG**. In those cases, the scope in this document that does not apply to a specific regulatory market shall be ignored in certification for that regulatory market.

In case of conflict between this document and other GGL Modules (e.g., in **GGL Module A REDII**), the regulations and requirements mentioned in the other module prevail.

1.2 Scope

With the GHG calculation methodology of this document, the fossil greenhouse gases coming from fossil fuels used for producing biomass are calculated. Comparing these against a reference value for the fossil fuel mix for the energy grid that the biomass is to replace, in order to decrease the amount of fossil GHG, the balance needs to be positive and above a given value.

The aim of this document is to provide lean, simple, accurate and open GHG calculations with clear references to all the values used and the source of these values. The next participant in the chain shall use the previous and partial GHG calculations as their inputs. Unless stated otherwise, the calculation is done with data collected over a year. Reporting shall include an explanation and source reference.

GGL GHG Module Scope

GGL GHG モジュール範囲

- ▶ The scope of the GHG module includes emissions from land preparation and harvesting up to final use of the biomass.
- ▶ GHGモジュールの範囲には、土地の準備と収穫からバイオマスの最終利用までの排出が含まれる。
- ▶ The core formula for calculation for the GHG calculations includes emissions from various steps of biomass fuel production and consumptions.
- ▶ GHG算定の中心となる計算式には、バイオマス燃料の生産と消費の様々な段階からの排出が含まれる。
- ▶ For certification of participants against the FIT scheme, GGL will use the default values indicated by METI.
- ▶ FITスキームに対する参加者の認証については、GGLは経済産業省が示す既定値を使用する。



GGL GHG module scope & formula

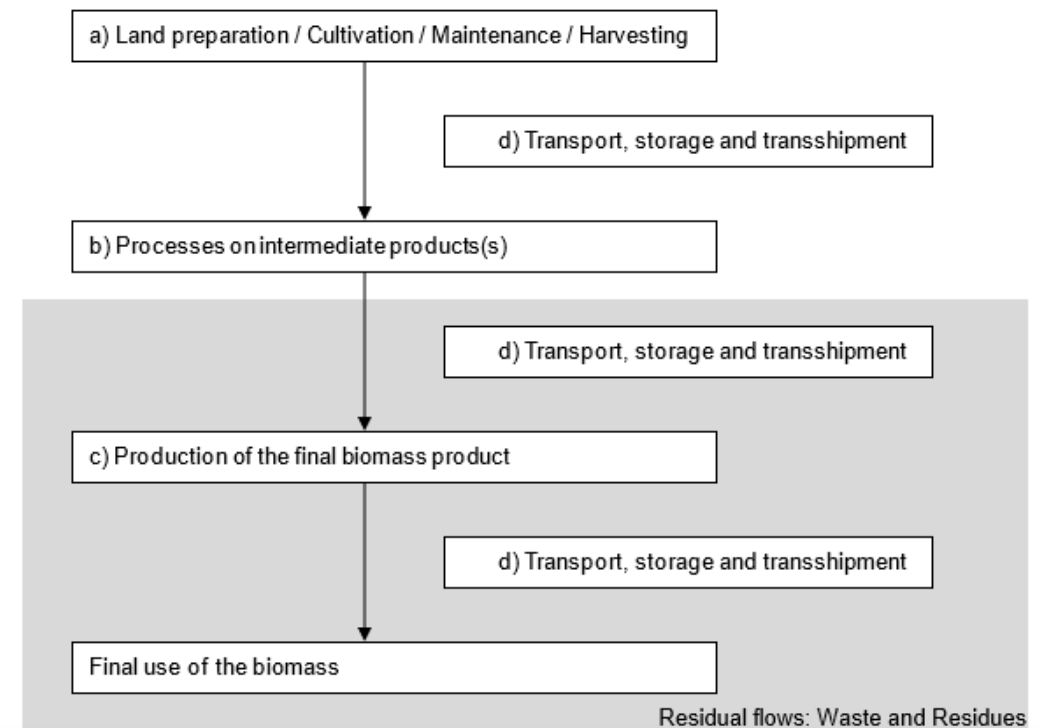
GGL GHGモジュール範囲と計算式

- ▶ The overview of included steps in GHG calculation and basic formula is as represented in the figures here.
- ▶ GHG算定に含まれるステップの概要と基本的な計算式は、ここに示した図のとおりである。
- ▶ The calculation for e_{ec} (emission from extraction & cultivation) parameter is done based on the total sum of emissions related to extraction & cultivation of raw materials (e.g. land preparation / cultivation / land & crop maintenance / harvesting)
- ▶ e_{ec} (採掘・栽培からの排出)パラメータの算定は、原料の採掘・栽培に関連する排出量(例：整地/栽培/土地・作物管理/収穫)の合計に基づいて行われる。
- ▶ The calculation for emissions related to travel time (e_{td}) is done per ton of transported material (for dry content) based on total sum of loaded & empty transportation vehicle and transportation distance.
- ▶ 移動時間(e_{td})に関連する排出量の算定は、積載車両と空車輸送車両の合計と輸送距離に基づいて、輸送材料1トン当たり(乾燥物の場合)に行われる。

For detailed information please see slide “annex I” in slide 8 of this presentation or refer to the GGL GHG module document.

詳細については、本プレゼンテーションのスライド8の「附属書I」を参照するか、GGLのGHGモジュール文書を参照。

Figure 1 – Overview of methodology



4.2 Basic formula

The basic formula for calculating GHG emissions from the use of fuel (E) is:

$$E = e_{ec} + e_p + e_{td} + e_u$$

Where: E = total emissions from the use of the fuel;
 e_{ec} = emissions from the extraction or cultivation of raw materials;
 e_p = emissions from processing;
 e_{td} = emissions from transport and distribution;
 e_u = emissions from the fuel in use;

Timeline for implementation 実施タイムライン

Development of document according to Meti requirements
(Completed)

経済産業省の要求事項に
則った文書の策定(完了
済)

Review and approval of GGL document by METI

経済産業省によるGGL文書の評価承認

Stakeholder consultation

利害関係者によるコンサルテーション

Presentation to 経済産業省へのプレゼンテーション

Consultation with advisory council
諮問委員会によるコンサルテーション

Formally publishing the GGL GHG Module document
GGL GHGモジュール文書の公式発表

3 month time period
3ヶ月間



ご清聴ありがとうございました。

Bedankt!

Questions?

Annex I: Detailed calculation methodology for traveling distance based on new GGL GHG module

附属書 I: 新しいGGL GHGモジュールに基づく移動距離の詳細な算定方法

4.3.2 e_{td}

Emissions from transport and distribution, e_{td} , shall include emissions from the transport of raw and semi-finished materials and from the storage and distribution of finished materials.

$$e_{td} = \frac{\left((d_{loaded} [km] * F_{loaded} \left[\frac{kg}{km} \right]) + (d_{empty} [km] * F_{empty} \left[\frac{kg}{km} \right]) \right) * EF \left[kg \text{ Co}_2 \frac{eq}{tkm} \right]}{\text{Total amount of the transported material (dry content) [ton]}}$$

Where:

$d_{loaded} [km]$ = sum of transport distance across which the biomass or biomass fuel was transported

$d_{empty} [km]$ = sum of transport distance when the transport vehicle was empty (if the transport vehicle is not empty upon return, it does not have to be included)

$F_{loaded} \left[\frac{kg}{km} \right]$ = fuel consumption of the means of transport used per km when loaded

$F_{empty} \left[\frac{kg}{km} \right]$ = fuel consumption of the transport vehicle used per km when empty

$EF \left[kg \text{ Co}_2 \frac{eq}{tkm} \right]$ = Emission Factor for the fuel type used