

The GBEP GHG Methodological Framework for Bioenergy

**GBEP Task Force on GHG Methodologies
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Background

- GHG methodologies taskforce established by GBEP steering committee in May 2007.
- Desired end result is to develop a framework to compare LCA methodologies for policy makers in all countries.

Taskforce Work Plan

GBEP Steering Committee set forth 5 key elements of taskforce:

1. Review existing methodologies;
2. Develop a harmonised approach for comparing GHG lifecycle assessments on an equivalent basis;
3. Encompass the full well-to-wheel lifecycle of transport biofuels;
4. Not indicate a preference for any particular existing methodology or feedstock, or to limit parameters; and
5. Define parameters and inputs to be considered when conducting a LCA and develop a good practice document.

Approach

- The taskforce decided to develop a flexible “checklist” framework to compare across LCA methods of bioenergy production and use.
- Work was based on accepted methods for undertaking environmental lifecycle analysis and GHG inventories, such as the ISO 14040 standards and the IPCC good practice guidance for land use change and forestry.
- Over the course of 14 months and 4 taskforce meetings, the taskforce produced “*The Common Methodological Framework for GHG Emissions from the Production and Use of Bioenergy*” in July 2009.

Components of the Framework

1. GHGs covered
2. Source of biomass
3. Land use changes due to bioenergy production
4. Biomass feedstock production on farms and in forests
5. By-products and co-products
6. Transport of biomass
7. Processing into fuel
8. Transport of fuel
9. Fuel Use
10. Comparison with replaced fuel

“Testing Phase”

- As of March 2010:
- 5 countries have provided the Secretariat with completed questionnaires and made them available to other Partners (namely: France, Germany, Italy, China, as well as El Salvador and the Dominican Republic through UNF).
- 4 private companies and an association (Mossi & Ghisolfi, Novozymes, Eni, Itabia, Biofuel Italia, Agroils, IEA Bioenergy) have provided comments and completed questionnaires.
- Comments and proposals provided also by partners and Observers

Status of the Framework (Countries)

Step 1: GHGs Covered	FRANCE	ITALY	GERMANY	CHINA	El Salvador and Dominican Republic	EU DIRECTIVE
CO ₂ ___	X	X	X	X	X	X
CH ₄ ___	X	X	X	X	X	X
N ₂ O ___	X	X	X	X	X	X
HFCs						
PFCs						
SF ₆ ___						
Other						
Please report global warming potential used for each GHG covered.	CO2: 1, CH4: 23, N2O : 296	CO2: 1, CH4: 23, N2O : 296	CO2: 1, CH4: 23, N2O : 296		Global Warming Potential not assessed in BEET.	CO2: 1, CH4: 23, N2O : 296
Step 2: Source of biomass						
Non-waste		X		X	X	X
Identify Feedstock:	ENERGY CROPS				Sugarcane	
Residue or Other Waste		X	X			X
Identify Feedstock:	TALLOW AND USED VEGETABLE OILS					
* Please explain definition of waste:						
Substance that the holder intended to discard	USED VEGETABLE OILS					X
Substance that had zero or negative economic value						
Substance for which the use was uncertain						
Substance that was not deliberately produced and not ready for use without further	tallow (not sanitary discarded : C3)					
Substance that could have adversely affected the environment	tallow (sanitary discarded : C1 and C2)					
Other:		"biodegradable fraction of waste and residues from biological origin from agriculture (including vegetal and animal substances), forestry and related industries (including fisheries and aquaculture) as well as biodegradable fraction of industrial and municipal waste" (see Directive 2009/28/CE)	No explanation, but waste is understood to include any feedstock of less (or equal) "value" like agricultural crop residues (straw, husks, nut shells and even bagasse and non refined glycerine)			

Status of the Framework (Others)

Step 1: GHGs Covered	IFEU	PRIVATE COMPANY 1 (M&G)	PRIVATE COMPANY 2 (ENI)	PRIVATE COMPANY 3 (Agroils)	UNFCCC-CDM
CO ₂ ____	X	X	X	X	X
CH ₄ ____	Yes - differentiation made betw. fossil: (21) and non - fossil CH ₄ (18.25) (values acc. to Kyoto - Prot.)	X	X	X	X
N ₂ O ____	Yes - (310) (value acc. to Kyoto - Prot.)	X	X	X	
HFCs					
PFCs					
SF ₆ ____					
Other					
Please report global warming potential used for each GHG covered.	CO ₂ : 1, CH ₄ : 21/18.25, N ₂ O : 310	CO ₂ : 1, CH ₄ : 25, N ₂ O : 298	CO ₂ : 1, CH ₄ : 21 - 23 N ₂ O : 296	CO ₂ : 1, CH ₄ : 21 - 23 N ₂ O : 296	
Step 2: Source of biomass					
Non-waste		X	Conerently with the definition of waste (see below) in this category we should classify every material which does not correspond to the definition of waste; anyway, as a general rule we could consider non waste biomass every biomass which is the output of a process whose aim is its own production	every product, co-product or by-product of Jatropha production chain that can be used to produce energy conveniently or that has an economical value and can be sold to specific markets (e.g. fertilizers, cattle feed, construction materials).	X

Preliminary Feedback

- Boundary conditions and terminology
- ILUC
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Proposals on the way forward

- Develop a preface to the Framework, providing context for comparative assessment of biofuels with respect to GHG emissions, with the aim to provide users with examples of how to carry out LCA for biofuels based on reasonable guidelines and assumptions on methodological issues and on how to deal with the associated uncertainty of key parameters.
- Graphical representations to provide a visual aid for users, particularly in regards to system boundaries.
- A compendium of the main internationally accepted definitions (EISA, RTFO, RED, ISO 140 44, IPCC).

Proposals on the way forward

- Evaluation of whether we can replace open-ended requests for descriptions of assumptions with closed Yes/No questions
- Development of guidance to assist users in completing the questionnaire.
- Development of an effective communication strategy, focusing on developing countries needs and limitations in order to provide a reference when designing national policy frameworks. This activity could be expanded to a suitable and effective capacity building tool.