



GHG calculations - Netherlands

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Background

Debate on use of palm oil incl. GHG gas balance dates back to 2005:

- Power producer Essent used palm oil for large-scale cofiring in gas-fired power plant
- NGO's claimed this to cause rainforest destruction
- Pressure caused Essent to stop co-firing palm oil
- Subsidy for green electricity was put on hold

Dutch government (Min. Economic Affairs, Min. Environment):

- Announced to aim for incentives for better GHG performance
- Started development of a method for GHG calculation
 - Methodology part of "Commission Cramer"
 - Both for biofuels and for bio-electricity

Current political context

Early this week, Dutch Ministry of Environment announced:

- Obligatory reporting for biofuels per 1-1-2009 is cancelled, as:
 - Draft EU directory proposal contains sustainability criteria
 - NL position towards proposal: additional criteria should be added
 - Following EU procedures, NL will not introduce own legislation pending formulation of EU legislation
- Stakeholder meetings are organised to investigate steps before 2010, such as pilots or voluntary reporting on sustainability of biofuels

NL work on GHG calculation – Process

- Commission Cramer: development of GHG calculation methodology
March 2007: Final report published
- December 2006: Start of two projects
 - CML: electricity and heat from bioenergy
 - EcoFys/CE: biofuels for transport
- Management of the project
 - Steering Group for Formal decisions
 - Advisory Board (stakeholders) for advice to consultants and Steering Group
 - Focus groups (April – June 2007) en field test (Autumn 2007) for advice to consultants and Steering Group on details
- February 2008: Final result (Technical Specification and software)

NL work on GHG calculation – Methodological issues

Main methodological choices

- Direct land use change is included
 - Based on IPCC data, including both up- and below ground carbon
- Indirect land use change is not included (next slide)
- N₂O emissions from fields: IPCC data, not taking soil carbon content into consideration
- Up-chain emissions: included also for waste streams with positive market value (wood, sawdust, used cooking oils)
- ~~Substitution~~ ~~GHG savings through by-products~~ ~~followed by EU proposal~~
 - ~~Substitution~~ allocation (LHV)
 - ~~Agricultural by-products~~ (legislation, not feasible) not allocated

NL work on GHG calculation – Methodological issues

Indirect land use change was heavily debated.

Conclusion: communicate the results with a disclaimer, which includes:

- GHG performance is not only indicator for sustainability
- I-LUC is not included and as a consequence
 - Tool is suitable to identify possibilities to improve the GHG performance
 - Tool gives a maximum estimation of the GHG emission reduction of biofuels produced on prior agricultural land
 - Tool is suitable to compare the GHG performance of biofuels produce on non-agricultural land
 - Tool is less suitable to compare biofuels produced from residues or produced on non prior agricultural land (e.g. idle land) with biofuels produced on agricultural land, because for the last category the tool only gives a maximum estimation for the greenhouse gas emission reduction, because indirect land use change is not taken into account.

Result 1: Technical Specification

Technical Specification is a document containing

- Short description of methodology
- All values used to make calculations incl. sources, e.g.

Production of sugar beet in Europe

Type		Unit	Value C	T	B
Yield main product	Soiled sugar beet ¹	kg/ha/yr	59850	61800	78100
Material & energy use	Diesel ²	MJ/ha/yr	8722	6330	3000
	Fertiliser N ³	kg/ha/yr	180	143	90
	Fertiliser P2O5	kg/ha/yr	100	95	40
	Fertiliser K2O	kg/ha/yr	180	123	40
	Fertiliser CaO	kg/ha/yr	377	377	377
	Land-use change	From Set-aside	-	1	
From plantation		-		1	

¹⁾ Yield values from Eurostat. Typical value: average yield in the Netherlands, from 2002-2005. Best practice: average yield in France, 2002-2005. Conservative: average yield in the EU-27, from 2004-2005. EU standard quality sugar content: 16%.

²⁾ Typical diesel use values taken from (Edwards, et al. 2007), conservative value from (FFE 1999). Best practice value from Elsayed et al (2003).

³⁾ Typical values for fertiliser use: average values for the Netherlands from (Bietenstatistiek 2005, IRS, 2006). Ranges in fertiliser use from (GM, 2001), that use data from the FAO. Better growing conditions generally increase the optimum amount of N fertiliser together with the yield (Edwards, et.al., 2007), i.e. at high yield, fertiliser use is generally high as well. However, there is considerable variation in literature on optimum N inputs even for similar yield.

Result 2: GHG calculation software