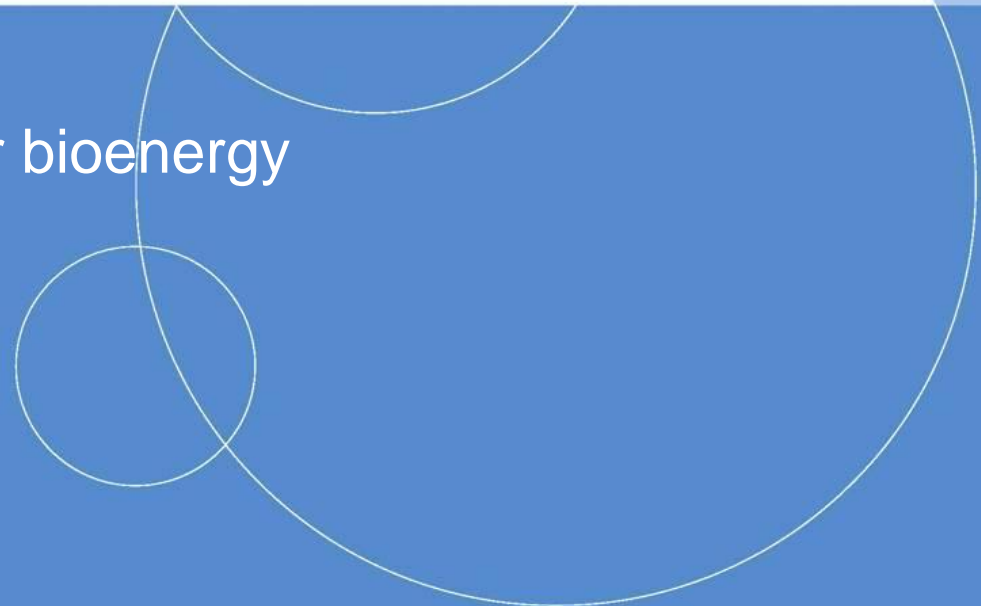




# Sustainability criteria for bioenergy

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## Current situation

- Sustainability criteria in the Netherlands ('Cramer criteria') are developed both for biofuels and bioenergy
- A similar approach is taken in the implementation of criteria
- Combined stakeholders processes
- A common methodology for CO<sub>2</sub> balance for biofuels and bioenergy is being developed
- A framework for reporting on sustainability has been set up (following the approach by the UK) (partly implemented)

## Current situation (2)

However:

- For biofuels: no legal base for a reporting obligation
- For electricity: basic information on sustainability is asked for in the subsidy scheme, e.g.
  - Country of origine
  - Primary product or residue flow
  - Production standard
- Consultation process has started how to move forward

## Sustainability criteria

### Netherlands position:

Sustainability criteria should apply to all biomass for energy as soon as possible

Sustainability criteria are broader than the EC criteria

### *Questions:*

- *Obligatory criteria vs. voluntary additional criteria*
- *Are additional criteria allowed for subsidy schemes?*

## Sustainability criteria

Electricity: biomass streams are mainly waste or residual streams

*Question: Is an exception needed for residual flows?*

The Cramer criteria provide an exception:

*For residual flows representing a negligible economic value (< 10%) a limited number of criteria is applied:*

- *Ghg balance*
- *Soil quality*

## Certification

- NEN submitted a proposal to CEN for an EU standard:  
Normalisation of Cramer criteria (meta standard)  
*CEN decision follows 9 april*

### *Questions:*

- *Is an exception needed for certification of residual or waste streams?*
- *What are we doing in the mean time?*

## CO2 balance

- A common methodology for biofuels and bioenergy is feasible

Main differences:

1. Large variation in end use: cofiring, CHP, digestion
  - large variation in efficiency of technologies
  - what is the fossile reference chain? Clear choices are needed.

## Fossil references bioenergy (NL)

<b>System</b>	<b>Fossil reference</b>
Co-Firing with coal or gas	<ul style="list-style-type: none"><li>• Electricity from coal/gas fired power plant</li></ul>
Firing in cement ovens (RDF)	<ul style="list-style-type: none"><li>• Heat from coal (replaced process)</li></ul>
CHP	<ul style="list-style-type: none"><li>• Electricity from Dutch production mix excluding renewable sources</li><li>• High temperature heat in case of large-scale CHP (industrial use)</li><li>• Low temperature heat in case of small and medium scale CHP (use for space heating)</li></ul>
Other systems	<ul style="list-style-type: none"><li>• Electricity from Dutch production mix, excluding renewable sources</li></ul>

## CO2 balance

2. Electricity: biomass streams are mainly waste or residual streams

(Also for second generation biofuels!)

### Questions:

- Definition of waste streams. NL: zero or negative benefits
- How to deal with agricultural residues? The EC proposal excludes agricultural residues, but these are products with a market value.

*Worse performance for main products, e.g. electricity from rape seed*

*Better performance for residual products, e.g. electricity from wheat straw*

## CO2 balance

- How to deal with the 'avoided chain'?  
(Municipal waste incinerators; digestion of manure)
  - the avoided chain is not taken into account, nor the function of waste disposal  
*(resulting in a very negative CO2 balance)*
  - the waste treatment service is taken into account  
*(resulting in a better CO2 balance)*

## Indication of first results

### Example: co-digestion of manure and maize

1. Substitution (avoided chain is taken into account)  
+ 160% emission reduction
2. Energy allocation (waste treatment service is not taken into account)  
- 100% emission reduction
3. Energy allocation (waste treatment service is taken into account)  
+ 70% emission reduction