Green*ergy* Brazilian Bioethanol verification programme:

Chain of custody requirements

COC DOC 003 v.3 31 January 2011

1. General

In accordance with the Directive 2009/28/EC Article 18(1), this normative document defines requirements for a mass balance system which:

1) allows consignments of raw material or biofuel or bioliquids with differing sustainability characteristics to be mixed;
2) requires information about the sustainability characteristics and sizes of the consignments referred to in point (1) to remain assigned to the mixture;
3) provides for the sum of all consignments withdrawn from the mixture to be described as having the same sustainability characteristics, in the same quantities, as the sum of all consignments added to the mixture.

1.1. Terminology

The following terminology is used:

- Chain of Custody: all the changes of ownership of biomass, intermediate products, semi-finished products, and products produced thereof, from their origin to their end-user; where the end-user of the chain of custody is the biofuel blender
- Consignment: any quantity of product with identical sustainability data characteristics.
- Sustainability data:
    - Fuel type;
    - Biofuel feedstock;
    - Feedstock Origin;
    - Carbon and land use data;
        - Level of compliance with GREENERGY BIOETHANOL STD DOC and GHG values (the default value for sugarcane set out in Annex V of the EU Directive and land use change emissions using GREENERGY BIOETHANOL GHG DOC, where applicable)
        - Land use on 1 January 2008
- Input: any physical input sourced by any economic operator in the supply chain. For example ethanol sourced by a bioethanol trader.
- Output: any physical output supplied by any economic operator in the supply chain. For example ethanol supplied by a bioethanol trader to a biofuel blender.

- Conversion factor: refers to the amount of output produced per unit of input. For example the amount of ethanol produced per unit of sugarcane.
- Inventory: refers to a stock of physical product or sustainability data.
- Economic Operator: organisation which is responsible for one or several steps in the chain of custody
- Obligated Economic Operator: An economic operator that is obligated by a Member State to report sustainability data as part of a national reporting framework, i.e. Green*ergy*.
- Supply Chain Operator: An economic operator that takes legal ownership of sugarcane and ethanol that is supplied to the Obligated Economic Operator.
- Sugarcane mill: An economic operator that harvests and processes sugarcane into ethanol that is supplied to the Obligated Economic Operator.
- Site: a geographical location with precise boundaries within which products can be mixed. A mixture can have any form where consignments would normally be in contact.

2. Operating a mass balance Chain of Custody

2.1. Scope

Each economic operator in the biofuel supply chain, which has ownership or physical control of the sugarcane, ethanol or bioethanol blend needs to put in place the administration necessary to maintain the Chain of Custody. The system boundaries of the Green*ergy* Brazilian Bioethanol verification programme Chain of Custody apply from the sugarcane mill to the Obligated Economic Operator.

2.2. Responsibilities and procedures

2.2.1. An economic operator appoints a person or position with overall responsibility for compliance with the Chain of Custody procedures explained below;

2.2.2. There are written procedures and/or work instructions to ensure implementation of the requirements as explained below.

2.3. Selling products with sustainability data

2.3.1. An economic operator that supplies products with sustainability data either specifies the sustainability data for the consignment on the invoice (or other equivalent document, e.g. a biofuel sustainability declaration) and/or provides a unique reference number enabling tracing of the consignment within the economic operator's internal mass-balance accounting system. Within this internal system, information traceable to the consignment shall include, inter alia:

- The name and address of the buyer;
- The date of the relevant documentation;
- Description of the raw material & product – this must correspond to the description of the raw material & product given in the input and output records;
- The quantity of the consignment supplied with specific sustainability data. If the consignment contains products with different sustainability data, these shall be identified separately in such a way that it is clear to which products the sustainability data refers.

2.4. Records

2.4.1. Each economic operator in the Chain of Custody keeps the following records that concur with the information provided to customers:

- Input and output records of sustainability data. Input records refer to the sustainability data of products purchased from a supplier. Output records refer to the sustainability data of products sold to a buyer. For each consignment these records shall include at least:
    - Invoice reference(s) (or other equivalent document, e.g. a biofuel sustainability declaration) and/or or a unique reference number enabling tracing of the issued document within the economic operator's internal mass-balance accounting system
    - A description of the physical product to which the sustainability data refer
    - The quantity of physical input/output to which the sustainability data refer
    - The supplying/receiving economic operator
    - Transaction date
    - The sustainability data

2.4.2. Each economic operator in the Chain of Custody keeps conversion factor records, (where conversion is undertaken). These records refer to the conversion factor of inputs to outputs (e.g. sugarcane to ethanol). An economic operator may have more than one conversion factor. For each conversion factor it must be clear from the records:

- To which input product it refers
- To which output product it refers
- The units in which the conversion factor is expressed
- The value of the actual conversion factor
- When the specific conversion factor was valid. The period of validity is one 3 months.

The conversion factors may also be integrated in the input, output or inventory records as long as the requirements listed here are met.

2.5. Inventories

Either periodic inventories (2.6) or continuous inventories (2.7) shall apply.

2.6. Periodic inventories

2.6.1. Periodic inventory of sustainability data is undertaken, where the period has a maximum duration of 3 months.

2.6.2. The periodic inventory is undertaken over one physical facility (site).

2.6.3. Inventory records include:

- The inventory of sustainability data at the beginning of the respective period (including the carbon intensity of the stock). It must be clearly specified whether this is expressed in input-equivalents (before conversion factor) or output-equivalents (after conversion factor);
- The quantity of inputs with identical sustainability data in the respective period. These quantities must coincide with the input records described above;
- The quantity of outputs with identical sustainability data in the respective period. These quantities must coincide with the output records described above;
- The conversion factor(s) used in the respective period;
- The inventory of sustainability data at the end of the respective period (including the carbon intensity of the stock). It must be clearly specified whether this is expressed in input-equivalents (before conversion factor) or output-equivalents (after conversion factor).

2.6.4. The periodic inventory of sustainability data must not be negative; an economic operator in the Chain of Custody may not sell more output with certain sustainability data than its has sourced input with the same sustainability data (taking into account the relevant conversion factor).

2.7. Continuous inventories

2.7.1. Continuous inventory of sustainability data is undertaken.

2.7.2. The continuous inventory is undertaken over one physical facility (site).

2.7.3. Inventory records include:

- The inventory of sustainability data (including the carbon intensity of the stock). It must be clearly specified whether this is expressed in input-equivalents (before conversion factor) or output-equivalents (after conversion factor);
- The quantity of inputs with identical sustainability data. These quantities must coincide with the input records described above;
- The quantity of outputs with identical sustainability data. These quantities must coincide with the output records described above;
- The conversion factor(s) used;

2.7.4. The inventory of sustainability data must not be negative; an economic operator in the Chain of Custody may not supply more output with certain sustainability data than it has sourced to date as input with the same sustainability data (taking into account the relevant conversion factor).

2.8. Aggregation

2.8.1. Where applicable, multiple consignments can be aggregated at any point in the supply chain provided the individual consignments have identical sustainability data as defined above.

3. Verifying a chain of custody

3.1.1. The Obligated Economic Operator is subject to an annual audit against the Chain of Custody requirements set out in this document (COC DOC 003).

3.1.2. The supply chain operators are subject to an annual audit against the Chain of Custody requirements set out in this document (COC DOC 003).

3.1.3. The sugarcane mills are subject to an annual audit against the Chain of Custody requirements set out in this document (COC DOC 003).

3.1.4. Where economic operators are determined to have inadequate mass balance systems through the verification described in 3.1.2 and 3.1.3, sustainability data provided by these economic operators to the Obligated Economic Operator will be invalidated if appropriate remedial actions are not taken.