



ISCC PLUS 205-02 Consumables of a Production Process

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1 Introduction

An important feature of sustainability reporting of a company is the designation of consumables. Consumables in this context are all kind of inputs in the process of production (e.g. water, fuel, electricity) or originating from that process (e.g. waste).

The consistent and reliable designation of relevant consumables of the value chain elements enables producers to identify, analyse and optimize individual process chains, but also to compare it to other, similar process chains. Members of the supply chain that have gone through a successful audit can provide this information together with their product to their customers. By transferring relevant information on consumables along the supply chain a claim, regarding these consumables can be provided to customers and end-users.

The intention of this document is to designate relevant consumables of production processes and to provide a framework for an independent verification. Therefore, a list of relevant consumables of biomass production and subsequent conversion is provided. This list will be subject to constant revision of ISCC.

In the next chapters the required data as well as the methodology and verification guidelines for the identification, management and transfer of relevant consumable information will be introduced.

2 Scope

The scope of this document is the specification of the consumables relevant for the elements of a production process and the definition of minimum information requirements for a proper designation of consumables.

All elements of a supply chain can choose this add-on in order to display their individual performance in consuming and generating different important consumables.

The following elements of the supply chain can provide their consumables by the use of individually determined values:

- (1) Biomass producers
- (2) Conversion/ processing units (Companies, that process raw materials and change their properties (physical, chemical, visual))
- (3) Transport and distribution

Biomass producers can also use aggregated values for the agricultural management instead of individual calculations. Further information is provided in the chapter on the use of aggregated values for agricultural management.

3 Normative references

As a basic principle, all relevant ISCC documents are valid for the scope. The normative references display the documents whose contents are linked and have to be considered.

Relevant references:

ISCC PLUS	201	System Basics
ISCC PLUS	202	Sustainability Requirements – ISCC PLUS Standard on Sustainability Requirements for the Production of Biomass
ISCC PLUS	202a	Sustainability Requirements – Equivalence Benchmark
ISCC PLUS	203	Requirements for Traceability
ISCC PLUS	204-01	Mass balance requirements <u>or</u>
ISCC PLUS	204-02	Physical Segregation requirements
ISCC PLUS	255	ISCC Add-ons and Extensions
ISCC PLUS	202-01	Biodiversity Action Plan
ISCC PLUS	202-02	Classified Chemicals
ISCC PLUS	205-01	GHG emission requirements
ISCC PLUS	256	Group Certification

4 Consumables of a Production Process

4.1 Information Gathering

The following data on consumables shall be gathered on-site where relevant. Documents/evidence on these data must be provided to the auditor. This evidence can include production information systems and reports, weighbridge protocols or flow meters. All information shall be reported per unit of the produced product. This information can also be found on the delivery note when the product is supplied to the downstream element in the supply chain.

4.1.1 Input relevant Consumables

The input relevant data are:

Consumable	Further details
Water	
Water consumption	Total water consumption and segmentation of different kinds of water sources (e.g. tap water- and other fresh water consumptions (e.g. ground water, river water), if relevant rain water collection and consumption).
Energy	
Fuel consumption	Identification of kind of fuel used (e.g. diesel, wood, biofuel, natural gas) and amount of fuel needed.
Electricity	Electricity consumption and source of electricity.
Fuel consumption for transport	In case of a transport between two system elements the receiving element of the supply chain must include the kind and amount of fuel consumed during transport.
Chemicals	
Agrochemicals	Typical consumable at farm level. Total amount of used agrochemicals (inorganic fertilizers and plant protection products, like herbicides, fungicides and insecticides).
Additives and auxiliaries	Amount of used additives and auxiliaries in the production process (e.g. amount of solvents, adsorbent agents, other resources).

4.1.2 Output relevant consumables

The output relevant data are:

Consumable	Further details
Water	
Waste water treatment	Total amount of wastewater and amount of wastewater treated in wastewater treatment. Kind of wastewater treatment (e.g. biological wastewater treatment, pure sedimentation process).

Waste	
Waste	Total amount of waste produced, type of waste and method of disposal (e.g. recycled, incinerated).

4.1.3 Use of aggregated values for agricultural management

For agricultural management it is allowed to either use individual or aggregated values. When using aggregate values:

- The regional differences for these values should be taken into consideration when using this data. For the EU, a value relevant for the NUTS2 level or more fine-grained level shall be used. For other countries a similar level would be applicable.
- Such numbers should primarily be based on official statistical data from government bodies when available and of good quality. If not available, statistical data published by independent bodies may be used. As a third option, the numbers may be based on scientifically peer-reviewed work, with the precondition that data used lies within the commonly accepted data range when available.
- The data used shall be based on the most recent available data from the above-mentioned sources. Typically, the data should be updated over time, unless there is no significant variability of the data over time.
- In terms of agrochemicals use, the typical type and quantity of agrochemical product used for the crop in the region concerned may be used.
- When a measured value for yields is used for the calculations (as supposed to an aggregated value), it is also required to use a measured value for agrochemicals input and vice versa.

Economic operators shall make reference to the method and source used for determining actual values (e.g. average values based on representative yields, agrochemical input and water input).

4.2 Allocation of data on consumables to different products

An allocation of consumables to the main product and co-products can take place. An allocation is the distribution of measured production factors to the main product and co-products. A co-product is one out of multiple products coming from the same production process and is normally storable or tradable. Not included and thus not allowed for allocation are agricultural crop residues (e.g. straw, bagasse, husks, cobs and nut shells), processing residues (e.g. crude glycerine) or waste.

The allocation needs to be done in proportion to the lower heating value¹ of the products. If the energy content of a co-product is negative, it is considered to be zero. The lower heating

¹ The lower heating value is defined as the maximum amount of usable heat from a combustion process that does not cause the condensation of the steam from the exhaust emissions in proportion to the fuel used.

value used in applying this rule should be that of the entire (co-) product, not of only the dry fraction of it. In many cases, however, notably in relation to nearly dry products, the latter could give a result that is an adequate approximation. Lower heating values must come from scientifically peer-reviewed literature/ databases and must lie within the commonly accepted data range. The year of publication must also be documented.

An allocation takes place at every element in the supply chain that in addition to the main product that is passed on in the supply chain also produces co-products. All consumed goods up to that point can then be distributed between the main product and the co-products based on their lower heating values. The respective value of the consumable after this allocation product is passed on within the supply chain.

The following formula is used for the calculation:

$$C'_{\text{allocated}} = \text{sum consumables} * \text{allocation factor}$$

With:

$$\text{allocation factor} = \frac{\text{energy content}_{\text{main product}} [MJ]}{\text{energy content}_{\text{main product}} [MJ] + \text{energy content}_{\text{co-product}} [MJ]}$$

$$\text{energy content}_{\text{main product}} = \text{yield}_{\text{main product}} \left[\frac{kg}{yr} \right] * \text{lower heating value}_{\text{main product}} \left[\frac{MJ}{kg} \right]$$

$$\text{energy content}_{\text{co-product}} = \text{yield}_{\text{co-product}} \left[\frac{kg}{yr} \right] * \text{lower heating value}_{\text{co-product}} \left[\frac{MJ}{kg} \right]$$

For the calculation of the share of consumables on different products, the sum of the relevant consumables up to the production of the co-product need to be summed up and multiplied with the allocation factor.

Allocation should be applied directly after a co-product and the intermediate or final product are produced at a process step. This can be a process step within a plant after which further “downstream” processing takes place, for either product. However, if downstream processing of the (co-) products concerned is interlinked (by material or energy feedback loops) with any upstream part of the processing, the system is considered a “refinery” and allocation is applied at the points where each product has no further downstream processing that is interlinked by material feedback-loops with any upstream part of the processing.

For the calculation of the allocation factor at least the following components must be measured and verified by the auditors:

- Yield main product and
- Yield co-products

4.3 Information Transfer

Every element in the supply chain determines its own relevant consumables for the product it supplies and passes on this information together with the relevant product. The next element in the supply chain always receives this information from the element one step up and adds this information to its own data in the relevant traded unit.

4.3.1 Aggregation of different incoming consumable values

There are different options to deal with sustainable batches that have different consumable values (e.g. different values in water consumption) in the quantity bookkeeping. The supply chain element must indicate the chosen option:

- No averaging: Aggregation of two or more sustainable batches with different consumable values is not possible.
- Mean average: The aggregated consumable value of a mixture of different sustainable batches with different values (e.g. different fuel consumption values) has to be calculated based on the mean weighted average.
- Highest value: The highest consumable value of all batches (or the least performing batch) could be used consistently for all batches.

4.3.2 Applying conversion factors to incoming consumable values

If the traded unit of the product changes (e.g. through a conversion of the physical properties), a conversion factor needs to be applied. Therefore, incoming values on consumables shall be multiplied by a conversion factor before the value of the own production process is added.

The conversion factor depends on the process technology in use and is subject to the audit. If the conversion factor is calculated all relevant data for the calculation must be documented. The date of all data used shall be documented. The data used shall be based on the most recent available data and shall be updated over time.

4.3.3 Information requirements for incoming and outgoing sustainable products

4.3.3.1 Information requirements for incoming sustainable products (not relevant for farms/plantations)

If the add-on “Consumables of a production process” is chosen, every element of the supply chain must provide the following information on sustainability declarations for every batch of relevant **incoming** sustainable products:

- Information on relevant consumables, which are transferred
- Value of respective consumables (in the respective unit of the incoming product)

4.3.3.2 Information requirements for outgoing sustainable products

Every element of the supply chain must provide the following information on sustainability declarations for every batch of relevant **outgoing** sustainable products with respect to Consumables:

- Information on relevant consumables, which are transferred
- Value of respective consumables (in the respective unit of the produced product)

4.5 Documentation and audit requirements

The following records have to be maintained for an audit if an element of the supply chain is conducting a process, which has an impact on body structure, physical and/or chemical properties of a product. At the different elements of the supply chain, auditors primarily check the following aspects:

- Data on relevant consumables listed in the tables and sources above,
- Conversion rates and their sources (scientifically peer-reviewed literature/ databases, own calculations and relevant documents, reports),
- In case of aggregated values for agricultural management relevant documents and reports,
- Records for the quantities of the main product, co-products as well as residues or wastes (e.g. production reports, delivery notes, invoices),
- Relevant allocation factors, lower heating values of the main-product and co-products and source (scientifically peer-reviewed literature/ databases), data on yields of main- and co-products and sources

4.6 Amendment of the list

The list of consumables can be expanded. If ISCC detects further consumables, which play an important role to sustainability claims, ISCC will consider the adjustment the list. Details on the process of amendments can be found in the document 205-0n Options to add further Requirements for Sustainability Properties.