



REDcert

System principles for
mass balancing
under the Biomass Sustainability Ordinances
(BioSt-NachV and Biokraft-NachV)

Version 05

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Introduction

The 2009/28/EC and 2009/30/EC Directives at European level and the Sustainability Ordinances in Germany have established sustainability requirements for biomass. These affect all forms of liquid biomass, in particular, vegetable oils such as palm, soy and rape seed oil but also biofuels such as biodiesel and bioethanol.

The sustainability requirements require seamless traceability of biomass that complies with the ordinances at all levels of production and distribution and define a minimum standard for documentation and verification. Thus, continuous updating of every quantity of sustainable biomass along the production and supply chain from the farm through to the last interface is based on the identification, documentation and inclusion into the mass balance system of every interface, operation or operating site responsible for handling sustainable biomass.

Mass balance systems are records that ensure traceability of biomass quantities at all levels of production and distribution of the biomass or biofuel. Balancing guarantees that the quantity of compliant biomass or compliant biofuel taken from a mixture is not higher than the quantity of compliant biomass or compliant biofuel that was added to the mixture ahead of time.

1 The mass balance system as proof of origin

By correctly implementing a mass balance system at all production steps, it is possible to track all handling of a quantity of sustainable biomass along the production and supply chain from the farm through to the last interface and to seamlessly verify the origin of the biomass. However, this requires that every interface, operation or operating site responsible for handling the quantity of sustainable biomass also assumes responsibility for correctly implementing the mass balance system. The responsibility is based on the fact that the operation or operating site responsible has the power and control over the sustainable biomass. Each quantity of sustainable biomass must be recorded in the internal mass balance system as soon as the interface, the operation or the operating site has obtained the legal and actual control over the sustainable biomass. Here, the presence of the sustainable biomass at the respective site is the prerequisite for compliant handling of sustainable biomass. Biomass that is not physically present at the respective site cannot be recorded in the mass balance system or removed from it.

One exception is direct-to-customer commerce. In this case, the movements of goods are to be represented in a mass balancing system and the necessary verification for tracing the sustainable biomass managed.

The seamless traceability of every quantity of sustainable biomass distributed along the production and supply chain can only be guaranteed when the data required to identify this biomass is consistently passed on. The data that is necessary to identify supplied quantities of sustainable biomass for accounting purposes and to distinguish other supplies quantities of sustainable biomass are called tracking attributes and accompany the supplied quantity of sustainable biomass along the production and supply chain. Here, however, all of the documentation starting from cultivation up through the last interface does not have to be passed on, only the information that is required for the respective downstream operations, operating sites and interfaces with a view to issuance of the sustainability certificates (e.g. the number of the inspection certificate or the certificate number, origin and type of biomass, quantity supplied and GHG emissions of the supplied quantity, name and address of the seller, etc.).

The handling of the sustainable biomass within the interface, the operation or the operating site also has to be tracked and documented as an internal process in the internal mass balance system.

Quantities of sustainable biomass can be merged, split or processed in internal processes in compliance with the requirements of the respective phase as long as this involves the same product or same product type and new quantities of biomass are subsequently created. The product identity must be preserved up through and including the last interface, i.e. mass balancing is specific to a product type or raw material. The mass balance system also makes it possible to mix sustainable biomass with non-sustainable biomass but, in this case, it must

be ensured that the quantity of biomass that fulfils the requirements of the ordinance is identified prior to mixing. At the same time, the mass balance system also has to guarantee that the quantity of compliant biomass taken from this mixture is not higher than the quantity that was identified before mixing. Mixing may only be carried out within an exactly defined geographic area (site). The physical biomass that is passed on to downstream interfaces, operations or operating sites does then not necessarily correspond to the quantity of biomass that was originally purchased as sustainable, but only to an equivalent quantity of biomass.

The obtained quantities of sustainable biomass have to be balanced daily, monthly or quarterly. Here, the timeframe for balancing must be defined ahead of time and may not exceed three months. More sustainable biomass may not leave the premises than physically arrives at the premises within the defined balancing timeframe. Having control over the sustainable biomass means that the interface, the operation or the operating site has physically taken the sustainable biomass directly or indirectly into its possession, may carry out transport, storage, shipping and processing and may physically transport the biomass to a downstream interface or a downstream operation or operating site. When handing off a quantity of sustainable biomass to the downstream interface, the downstream operation or the downstream operating site, the respective quantity has to be removed from the internal mass balance system for the respective step. The data necessary is passed on together with the delivery to the downstream interface, the downstream operation or the downstream operating site.

The details for calculating the GHG emissions and the GHG emissions savings and the requirements for balancing biomass before and after the last interface are described in the REDcert document "System principles for GHG calculation".

2 Documentation requirements

The documentation requirements for the mass balance system correspond to the documentation requirements for the respective process step (interfaces, suppliers) and are described in the respective system principles.

3 Mass balance system requirements for suppliers after the last interface

The suppliers after the last interface are required to use a mass balance system that satisfies the REDcert requirements – this applies starting with acceptance of the liquid biomass or biofuel by the first supplier after the last interface through to delivery to the plant operator or those required to provide proof of compliance as defined by the Sustainability Ordinances. Only in the biofuels sector is this pledge not required as long as the relevant supplier is subject to regular checks by the chief customs offices for tax monitoring purposes pursuant to the Energy Taxation Act (EnergieStG) or the Federal Immission Control Act (BImSchG). The respective verification issued by the customs offices or supervisory authorities is sufficient here.

The mass balance system has to ensure that, in the event that liquid biomass or biofuel for which sustainability certificates have already been issued, is mixed with other biomass with different greenhouse gas savings, the quantity of the biomass added to the mixture that fulfils the requirements for greenhouse gas savings is determined in advance. This is intended to prevent a non-applicable, favourable greenhouse gas emission saving from being calculated for quantities that do not have this greenhouse gas emission saving.

Products no longer have to be listed separately on sustainability and partial sustainability certificates by product type or raw material. The classifications pursuant to Art. 8 (2) Biokraft-NachV are sufficient here (e.g. plant-based oil, biodiesel, ethanol).

The requirements above are considered fulfilled if:

- all suppliers pledge to comply with the requirements of a certification system recognised by the competent authority (in this case, e.g. REDcert)
- the receipt and the forwarding of the liquid biomass or biofuel including the information of the sustainability verification or the partial sustainability certificate along with the location and date on which they received or passed along the biomass is documented in one of the databases approved by the BLE
- suppliers of biofuels document the receipt and forwarding of the biofuels including the information in the sustainability certificate as well as the location and date on which they forwarded this biofuel in an electronic database and the mass balance system of all suppliers is subject to regular checks by the chief customs offices

This web-application can be used to split, merge or reassign certificates. Every delivery of biomass has to be entered by the supplier using the web form here, i.e. suppliers do not just apply for partial sustainability certificates when they merge or split quantities of biomass but also when they supply a quantity of biomass that stays the same. In this case, they apply for the certificate to be reassigned to the recipient of the biomass using the web form. The split

certificate can then be downloaded by the supplier and sent to the recipient directly by e-mail. This allows the recipient of liquid biomass to check the sustainability of the quantity supplied. In addition, reassigning the certificate protects the personal data on the certificates. If the certificate is reassigned for every delivery, recipients of sustainable biomass can only take the certificate from the previous supplier and not other participants in the supply chain.

The **last supplier** who supplies the liquid biomass or the biofuel to the facility operator or those required to provide verification, must confirm that the requirements for using the mass balance system are satisfied on the sustainability certificate or partial sustainability certificate.

4 Compatibility with national systems and voluntary EU systems

REDcert (DE) accepts all national sustainability systems of the member countries of the European Union in accordance with the specifications of the German Sustainability Ordinances (BiokraftNachV and BioStNachV). In addition, sustainable biomass that originates from a company certified by a voluntary certification system approved by the EU Commission (EU biomass), is accepted as sustainable biomass by the REDcert-DE system in accordance with Art. 23 and 31 of the Biomass Electricity Sustainability Ordinance (BioSt-NachV).