



# **Scheme principles for the certification of sustainable material flows in the chemical industry**

**Version: RC² 1.2**

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## 1 Introduction

To make a significant contribution to reducing greenhouse gases and conserving resources, the chemical industry is increasingly relying on sustainably produced and certified *biomass* to replace fossil-based raw materials. In addition, the recycling of materials with the aim of reducing the use of *fossil* or *mineral raw materials* is gaining in importance and is consistent with the concept of *circular economy*. In the context of highly complex chemical manufacturing processes, biomass used as a raw material source or *recovered (recycled) materials* can be used in the same way as conventional materials ("virgin materials"). The sustainable biogenic content or *recycled content* in these products can vary considerably, making it virtually impossible to reach a valid conclusion about the content in the end product based on analytical evidence as a result of large-scale chemical compound processes.

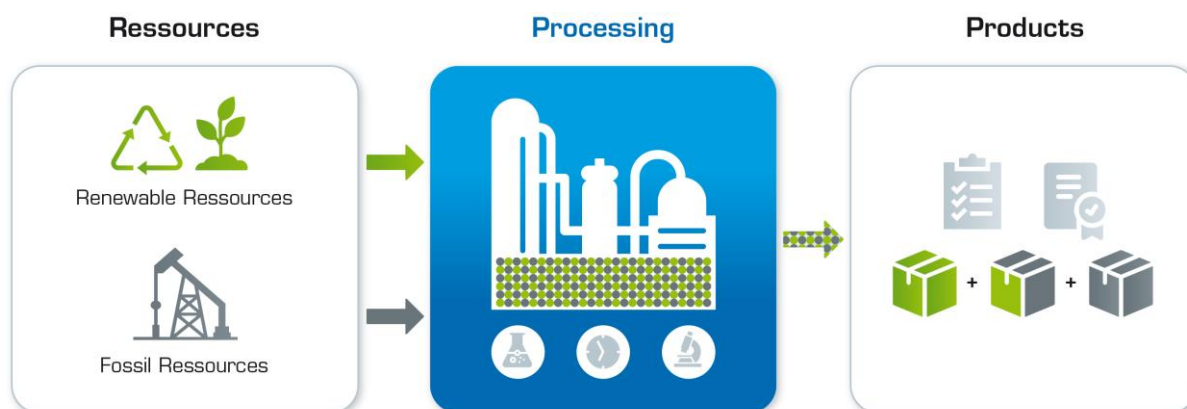


Figure 1: Diagram of the mass balance approach. Sustainable properties are allocated taking into account all conversion rates.

Using the mass balance approach (Figure 1), the chemical industry can provide proof that a certain quantity of fossil-based raw materials has been replaced by certified sustainable biomass or recovered materials during the production process. However, a balance based purely on "mass", i.e. the weight of the raw materials used, no longer adequately reflects the specific properties of large chemical processes with their growing complexity. The reason is that in every process step, new products and/or intermediate products are created whose conversion rate is almost impossible to determine or verify with respect to the biomass or recovered materials used.

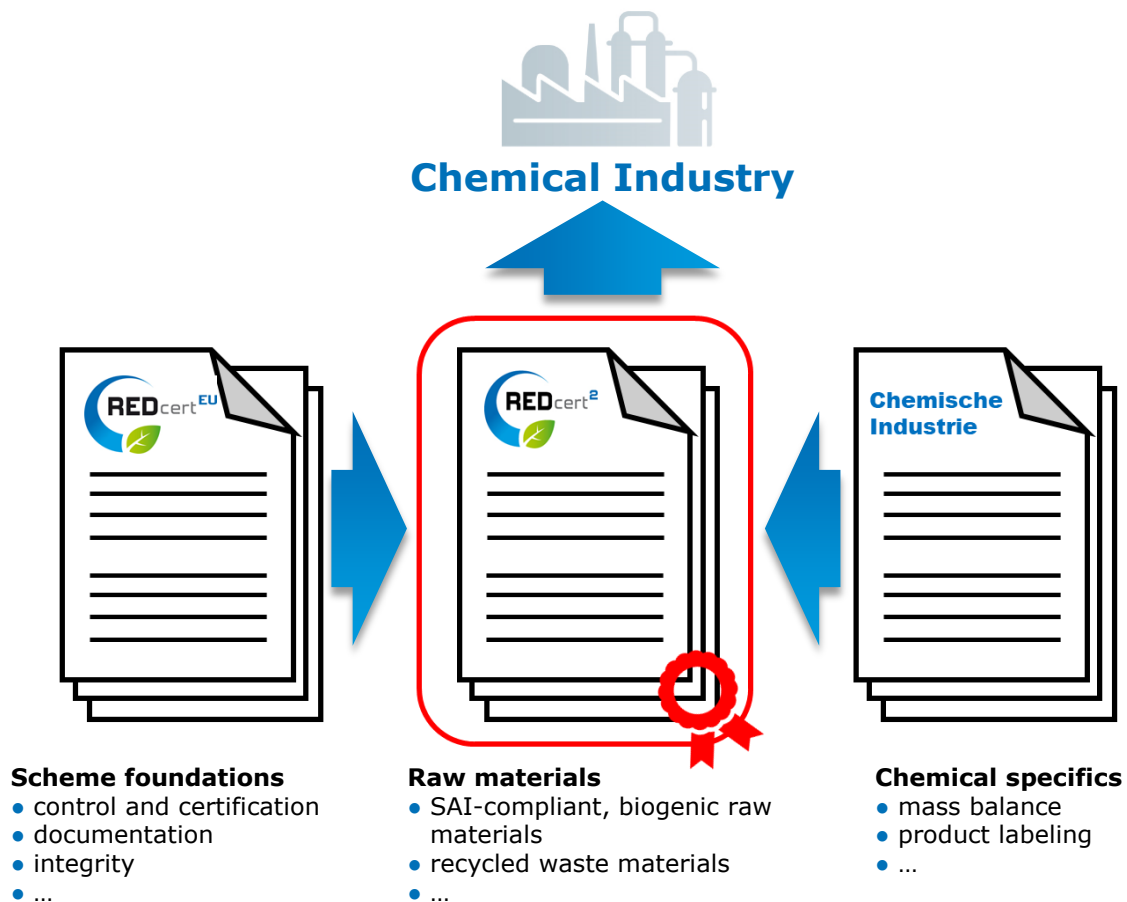
As a result, a concept for a mass balance approach was jointly developed by BASF SE and TÜV SÜD, which is not based on the mass of the biomass or recovered materials used, but on the chemical valence of its individual atomic components. It represents a stoichiometric balancing approach based on an equivalence analysis and documented in a corresponding

account management system. This standard, published as CMS 71, was adopted by REDcert and integrated into the REDcert<sup>2</sup> scheme as an optional approach to meeting the needs of the chemical industry.

In addition to the mass balance and the equivalence analysis, the definition of countable subunits ("unit counting") in combination with a suitable account management system can also be used to prove that a certain quantity of fossil or mineral raw materials has been substituted with an equivalent quantity of certified sustainable raw materials.

This document therefore describes the guidelines for both sustainability certification of biomass-balanced raw materials and products as well as sustainability certification of products made from recovered materials. By adopting this approach, REDcert is encouraging the increased use of biogenic raw materials and at the same time creating incentives for the continued use of valuable recovered materials. The aim of these measures is to reduce the use of fossil-based primary raw materials in the chemical industry, which is traditionally high.

This REDcert<sup>2</sup> document "Scheme principles for the certification of sustainable material flows in the chemical industry" is designed as a supplementary set of rules and directly references the principles set forth in the REDcert-EU scheme in many aspects. As a result, a company operating in the chemical industry can obtain REDcert<sup>2</sup> certification. Certification is possible both for products containing biogenic raw materials and for products containing recycled materials as defined in ISO 14021:2016.



The REDcert<sup>2</sup> mass balance system allows product-specific conclusions to be drawn about the certified sustainable biomass used at a chemical site or within the scope of an *extended mass balance* (EMB), but does not make it possible to reach conclusions about the percentages of biomass or recovered and recycled materials contained in the specific products or their use for energy.

REDcert<sup>2</sup> is a certification scheme for the production of *biomass* for the food and animal feed industries as well as the use of biomass as raw materials. The scope of the scheme can be expanded to include processing (conversion) and supply/trade. For the chemical industry, it is a scheme used to show that fossil-based raw materials have been replaced by certified sustainable materials using the mass balance approach. For information on the requirements for sustainably produced biomass in the REDcert<sup>2</sup> scheme for the chemical industry, see section 5.1, 5.2 and *Annex 2c*.

The *recovered materials* used do not have to be certified in terms of its origin or life cycle. Proof that the recovered materials used are derived from waste must be provided by the first user. To this end, a self-declaration is provided by the disposal or waste processing



company, which indicates its general consent to allow inspections to verify this information.

REDcert can accept other certification schemes as “equivalent”, similar to the provisions for biogenic raw materials, to the extent that sourcing recovered or recycled materials from companies that are not part of the chain certified in the REDcert<sup>2</sup> scheme requires this (see sections 5.10 and 5.11).

For the sake of clarity, the table below shows how the essential elements of the REDcert-EU scheme document “Scope and basic scheme requirements” (based on Directive (EU) 2018/2001) correlate to the REDcert<sup>2</sup> scheme requirements for the certification of sustainable material flows in the chemical industry:

<b>REDcert-EU</b>	<b>REDcert<sup>2</sup></b>
<b>“Scope and basic scheme requirements”, Version 06; section...</b>	<b>“Scheme principles for the use of biomass-balanced products in the chemical industry”, Version 1.2</b>
Introduction	✓ Reference
2 REDcert’s self-defined role	✓ Reference
3 Conditions and scope of validity	✓ Reference; see supplementary requirements below
4 REDcert’s organisational structure	✓ Reference
5 The REDcert certification scheme	✓ Reference; Special requirements for the GHG emissions saving and the calculation methods
5.1 Sustainability requirements for cultivating and producing biomass	✓ Reference
✗ not applicable	5.2 Requirements for biomass-balanced raw materials
5.2 Special requirements for the collection and use of waste and residues	5.3 Special requirements for the collection and use of biogenic waste and residues and recovered materials
5.3 Requirements for the GHG emissions saving and the calculation methods	5.4 ✓ Optionally applicable. Methodology according to reference

5.4 Requirements for traceability and mass balancing for the continuous proof of origin of biomass	5.5 Requirements for traceability and mass balancing to provide continuous proof of origin of biomass and recovered materials
5.5 Documentation requirements	5.6 ✓ Reference; in addition to the following requirements
✗ not applicable	5.7 Requirements for certified products and for communication and use of advertising claims
5.6 Scheme function	5.8 ✓ Reference; in addition to the following requirements
5.7 Registration and certification	5.9 ✓ Reference; in addition to the following requirements
5.8 Other certification schemes	5.10 ✓ Reference; in addition to the following requirements
✗ not applicable	5.11 Other raw materials
✗ not applicable	5.12 Use of renewable energy sources
✗ not applicable	5.13 Special requirements for recycling processes
6 Measures for transparency and prevention of misuse and fraud	✓ Reference
6.1 Transparency in scheme representation	✓ Reference
6.2 Transparency in scheme membership	✓ Reference
6.3 Transparency in scheme administration	✓ Reference
6.4 Transparency in scheme certification	✓ Reference
6.5 Assuring scheme integrity and preventing misuse and fraud	✓ Reference
7 Costs for participating companies	✓ Reference

## 2 REDcert's self-defined role

See REDcert-EU document "Scope and basic scheme requirements".

## 3 Conditions and scope of validity

The requirements criteria outlined in this document apply to *suppliers* and *conversion plants* – including upstream and downstream companies – in the chemical industry that replace fossil-based raw materials with certified sustainable materials and produce chemical products from them (Figure 2). If companies in the value chain want to advertise using their REDcert<sup>2</sup> certification or to label products as certified, this must be ensured for all conversion activities and B2B distribution activities through REDcert<sup>2</sup> certification or, in the case of B2C distribution activities, through licensing.

*Integrated manufacturing sites and plants* typical of the chemical industry can be considered a single site if there is a physical connection (e.g. through pipelines) between the *operating sites* at the locations that are included in the scope of REDcert<sup>2</sup> certification. However, this does not always apply to third parties that are also based on the site but not part of the company. They may require independent certification if the parent company is not the responsible for implementation in operations (e.g. joint venture).

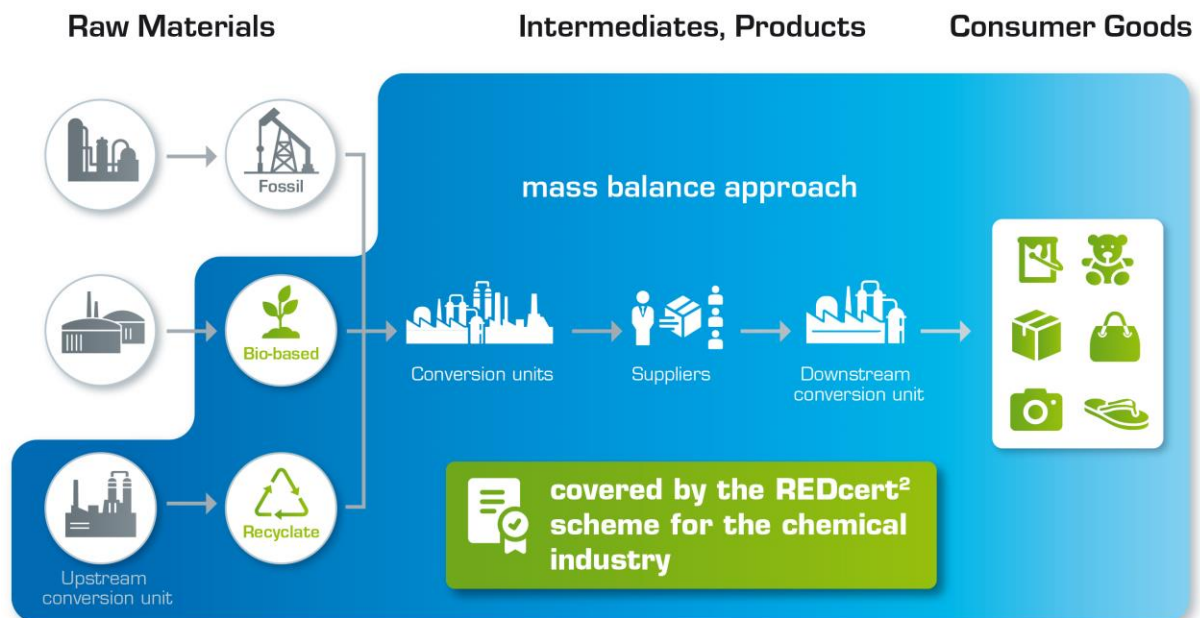


Figure 2: Diagram of the value chain of the REDcert<sup>2</sup> scheme for the chemical industry.

This document describes, among other things, the principles of *mass balancing* for several permanently interconnected operating sites (see above definition of site) using dedicated

transport routes. It does not cover the options for physical and chemical verification of the presence of certified sustainable materials in the company's products. Please see the REDcert-EU document "Scheme principles for mass balancing" for details on the possibility of physically separating sustainable and non-sustainable biomass or non-biogenic raw materials (*identity preservation*, so-called "hard-IP"). This document does not include the REDcert<sup>2</sup> requirements for the production of *biomass*.

All operations and production units associated with the certified company that are involved in the implementation of the standard must be identified, documented and integrated into the certification process.

This applies in particular to:

- the purchase and transport of renewable raw materials
- the purchase and transport of recovered or recycled materials
- the purchase and transport of certified products from upstream companies
- the transport of intermediate products
- trade with certified products and
- chemical processing steps (intermediate products)

When describing the scope of certification, the following information must be documented at a minimum:

- Name of the company/companies
- Functions
- Role in the implementation of the standard
- Responsibilities

If a renewable raw material is used for both mass-balanced and bio-based products, the following must be documented in writing for the production of *dedicated products*:

- Locations of production sites for dedicated products
- Production volume in the last three years
- Quantity of renewable raw materials used in the last three years and planned quantity for the current year
- Self-declaration stating whether the product is marketed as *dedicated*

Both biogenic raw materials and *recovered material* can be used for the production of mass-balanced products. Biogenic raw materials can also be used for *bio-based products*. This use pathway does not apply to recovered materials since, unlike biogenic raw materials, it is not necessarily possible to prove the percentage in the end product by analytically

differentiating the carbon origin. However, similar to bio-based products, *dedicated products* consisting purely of recovered or recycled materials can be produced from these raw materials. In this case, verification is carried out on the basis of physically separated material flows and dedicated production processes.

All *products to be certified* must be identified by their trade name and the name that appears in the safety data sheet. It must be possible to unambiguously identify the products by their names.

To the extent necessary to enforce the scheme requirements, the certificate holder has entered into contractual agreements with the companies identified in the scope of certification regarding this standard. The contractual agreements include a requirement to implement and comply with the present standard, as well as a statement of consent to grant the commissioned certification body access to all necessary operating sites and to ensure that all necessary documents are provided.

## 4 Organisational structure of REDcert

See REDcert-EU document "Scope and basic scheme requirements".

## 5 The REDcert certification scheme

See REDcert-EU document "Scope and basic scheme requirements".

### 5.1 Sustainability requirements for cultivating and producing biomass

See REDcert-EU document "Scope and basic scheme requirements" as well as the REDcert<sup>2</sup> scheme principles for the production of biomass in food production.

## 5.2 Requirements for biomass-balanced input materials

### Biomass

The *biomass* used must be certified as sustainable and a valid REDcert<sup>2</sup> or REDcert-EU certificate must be available as proof of sustainability. Biomass from other sustainability schemes can be accepted under certain circumstances (see also sections 5.10 and 5.11 as well as *Annex 2c*).

Proof of the origin of the certified sustainable biomass used for the certified products must be furnished in the form of appropriate identification on the documents accompanying the goods or comparable proof accompanying receipt/purchase of the raw material.

### Use of intermediate products

If raw materials (*intermediate products*) that have already been processed are used, a distinction must be made between the following categories:

- *Bio-based* intermediate products from *dedicated production*
- *Biomass-balanced* intermediate products from *integrated production*
- Intermediate products from recovered materials (*recycled products*) from dedicated production
- *circular mass-balanced products* from integrated production
- fossil-based intermediate products

The sustainable product components can only be transferred to the account management system to the extent that they have been confirmed/declared by the manufacturer within the scope of certification.

### Sourcing sustainable intermediate products

If sustainable intermediate products from *dedicated production* or *integrated production* are to be counted towards the mass balance, proof of the sustainability properties must be provided as part of certification recognised by REDcert (see section 5.10). Only physically existing stocks with a valid certificate can be transferred during the transition to the next accounting period.

### Use of fossil-based intermediate products

The *mass balance approach* enables sustainable properties to be allocated to materials of fossil origin for the production of *certified products* if, at the same time, the corresponding quantity of certified sustainable *mass balance units* unit(MBU) for the production of this intermediate product is removed from the account management system (Figure 3). This is intended to ensure flexible handling of intermediate products and minimise transport distances. The basis for this is the documentation of the quantities of fossil-based raw materials required for the production of the intermediate product. If no data on the quality of the *bill of material* is available, a conservative estimate based on values from relevant literature must be used.

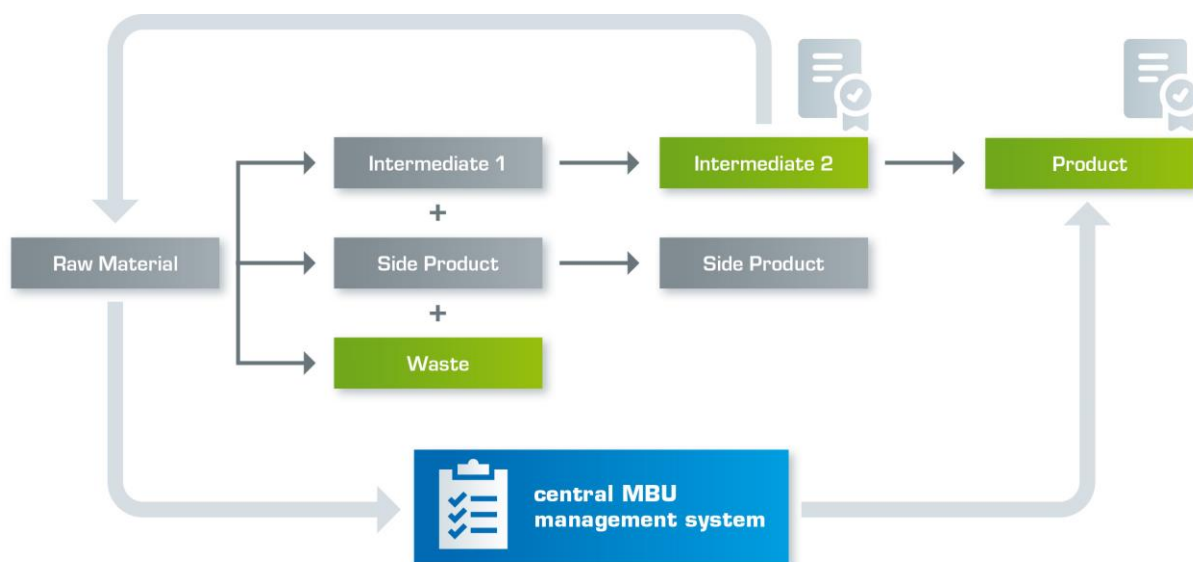


Figure 3: When using sustainable intermediate products, MBUs can be booked into a central account management system in the amount of the raw materials (e.g. bionaphtha or biomethanol) required for the production of these intermediate products. These MBUs can then be allocated to different products, taking into account all conversion factors.

### Aggregates

Non-certified aggregates with a total organic content of less than 1% of the end product by mass can be disregarded. Non-certified aggregates with an organic content greater than or equal to 1% by mass of the end product and less than or equal to 5% by total mass must be compensated using a higher percentage of MBUs. Either the actual value or, for the sake of simplicity, the product-specific average with an additional surcharge of 10% can be used to calculate the quantity of additional MBUs to be removed from the account management system.

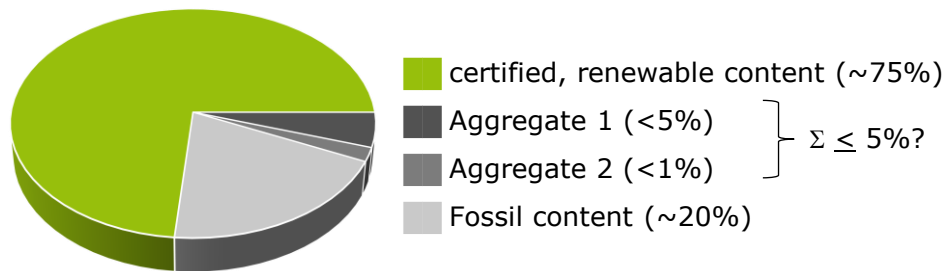


Figure 4 (example): The content of aggregate 1 is between 1% and 5% of the total mass. This therefore needs to be reflected in the calculation of the MBUs by an actual value or 1.1 times the product-specific average. The content of aggregate 2 is less than 1%, which means that it can be disregarded if the total of the aggregates is less than 5% of the total mass.

### 5.3 Special requirements for the collection and use of biogenic waste and residues and recovered materials

For biogenic waste and residues, the requirements of the REDcert-EU document "Scope and basic scheme requirements" apply. In addition to the use of biogenic waste and residues, the REDcert<sup>2</sup> scheme for the certification of sustainable material flows in the chemical industry also allows the use of *recovered materials* for *chemical* and *mechanical recycling*. Additional provisions apply here beyond the requirements outlined in the REDcert-EU document "Scope and basic scheme requirements".

All recyclable waste and residue flows can generally be used for chemical and mechanical recycling. According to the Waste Framework Directive 2008/98/EC, the following have priority based on the waste hierarchy:

1. Prevention
2. Preparation for reuse
3. Recycling
4. Other use (e.g. for energy purposes)
5. Disposal

In this context, the most efficient recycling method overall should always take precedence in point 3, taking into account relevant conversion factors and the value of the material obtained. Compliance with the cascaded use of waste raw materials will reduce the amount of waste produced, as well as lower greenhouse gas emissions and the environmental impact caused by improper disposal in landfills.



In addition to the provision of a waste code according to the European Waste Catalogue (2014/955/EU) to identify a waste stream, the definition of terms according to ISO 14021:2016 apply (see [Annex 1](#) – Definition of terms). If a waste code is not available or if one of the requirements of ISO 14021:2016 does not apply, the company has to use the decision tree of the European Commission (COM (2007) 59) to prove that the material has no other positive economic value or meaningful further use.<sup>1</sup>

For a recycling facility to be certified, appropriate operating licences must be available for all the raw materials such as intermediate or end products used in the facility.

The system technology used in the conversion plants in the value chain must ensure that the recovered material is suitable to replace conventional materials in conversion plants with regard to its chemical, physical and, if applicable, biological properties.

## 5.4 Requirements for the GHG emission saving and the calculation method

Unlike the REDcert-EU scheme, the REDcert<sup>2</sup> scheme does not require GHG emissions to be specified or the GHG emissions savings of certain materials to be fulfilled in accordance with prescribed requirements. However, it is also possible under this scheme to report GHG emissions as an option. Default values may not be used; GHG calculations must always be individual and process-specific. The underlying calculation methodology must either follow the principles described in the REDcert-EU scheme “Scope and basic scheme requirements” or meet the requirements of a valid life cycle assessment, e.g. according to ISO 14040:2006, 14044:2006 or 14067:2018. For information on the use of electricity from renewable sources, see section 5.12.

## 5.5 Traceability and mass balancing to provide continuous proof of origin of sustainable materials

For *bio-based products*, the requirements of the REDcert-EU document “Scope and basic scheme requirements” apply as well as the principles of the balance system in section 8.

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<sup>1</sup> COMMUNICATION OF THE COMMISSION TO THE COUNCIL AND THE EUROPEAN PARLIAMENT on the Interpretative Communication on waste and by-products from 21.2.2007 (COM (2007) 59).

The requirements described in the document “Scope and basic scheme requirements” can also be applied analogously to recovered and recycled materials.

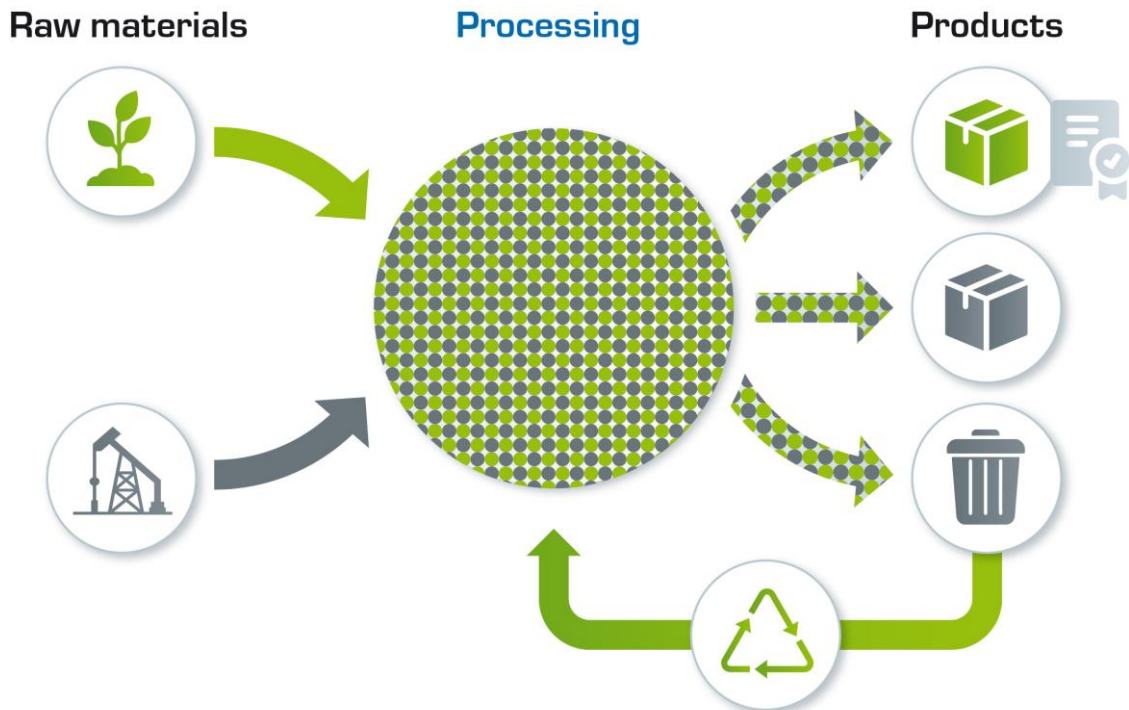


Figure 5: Schematic representation of the mass balance system.

Unlike *mechanical recycling*, *chemical recycling* can produce virgin quality recycled material with no loss of material properties. If this is the case, the corresponding materials can then be entered in a central accounting system not only in the conventional mass balance, but also in as a *mass balance unit*. In contrast to the requirements for the information and traceability scheme for sustainable biomass or biofuels, the regular information and traceability scheme for chemical recycling of materials through pyrolysis only applies starting from the initial conversion in the value chain. This means that the resulting conversion products (e.g. synthesis gas or pyrolysis oil) are not to be considered intermediate products in the chain of custody for chemical recycling, but represent raw materials that can be entered into the MBU system according to their lower heating value (LHV) (Figure 6).

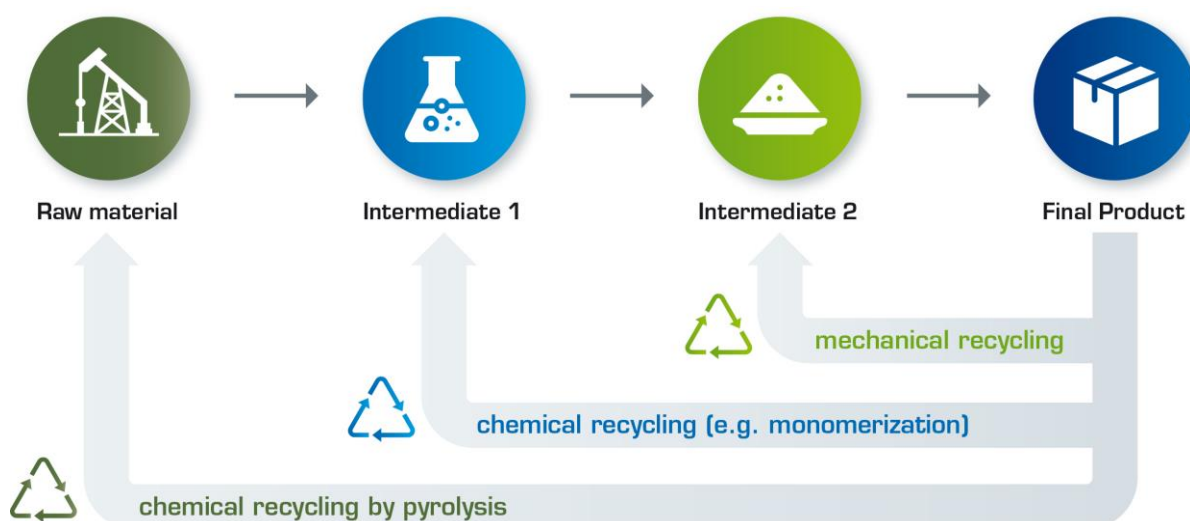


Figure 6: Diagram of the classification of recovered materials. While mechanical recycling always results in recovered intermediate products, pyrolysis oil and synthesis gases, for example, directly replace fossil-based raw materials and can be accounted for accordingly in the MBU system.

In this case, the first conversion plant is required to furnish proof of the waste properties or waste origin of the *recovered materials*. If the materials originate from internal company processes, proof must be provided using the approach described in section 5.3. The waste properties or waste origin of externally sourced recovered materials are ensured by the submission of a self-declaration (see introduction: self-declaration of the disposal or waste processing company).

The traceability of quantities of waste and non-waste conversion products must be ensured by a mass balance system to be structured based on the requirements outlined in the REDcert-EU document "Scheme principles for mass balancing". Other companies along the production and supply chain of chemically recycled materials must follow the principles of the balance system in section 8.

In the case of purely mechanical processing of materials, the mass balance system must be applied along the entire production and supply chain in accordance with the requirements outlined in the REDcert-EU document "Scheme principles for mass balancing". In this case, the information and traceability scheme applies from the moment when a waste fraction, collected separately or from a sorting facility, is used to produce mechanically recycled products.

Waste producers and collection points/sorting facilities for fossil-based waste materials are not subject to inspection and certification, but can also be inspected if deemed necessary. Whether or not this inspection is carried out is the responsibility of the first contract partner in the chain of custody.

Recycling	Recycled material	Balancing
Mechanical	Intermediate products	Mass balance
Chemical*	Intermediate products	Mass balance or MBUs
Pyrolysis	Raw materials	Mass balance or MBUs

*\*For example, extractions or monomerisations (see page 55)*

## 5.6 Transparency in certification

REDcert keeps all valid participant certificates in a scheme-specific and publicly accessible database. The scheme participants may also voluntarily decide to include a list of their respective certified products in the certificate annex. The certificate holder can create product certificates with appropriately certified advertising claims in a protected area of the REDcert database at any time. When this kind of product certificate is created, a copy is automatically sent to the responsible certification body and to REDcert, which can check the accuracy of the statements made there at any time on a risk basis. Certification bodies must keep a list of the respective certified products. This list must show the sales name of the product as well as the name of the corresponding certificate holder.

It is possible to add new products to be sold during a certificate period to the product list during the year after passing the desk audit. The product list must show the sales name of the product. The requirements for bills of material outlined in section 5.7 "Requirements for certified products or for communication and use of advertising claims" apply for all products.

In addition, the quantity of raw materials or MBU used for production must be reported annually to REDcert via the REDcert database.

## 5.7 Requirements for certified products or for communication and use of advertising claims

### Minimum percentage of renewable raw materials or recovered or recycled materials

For certification of a *biomass-balanced product* under the REDcert<sup>2</sup> scheme for sustainable material flows in the chemical industry, at least 20% of the fossil-based raw materials required for the production of this product must have been verifiably replaced by an equivalent amount of certified sustainable *biomass* in the production or purchasing process in

the integrated manufacturing sites or plants or within the scope of the *extended mass balance*. Similarly, in order for a *recycled product* made from *recovered* or *recycled* materials to be certified according to this document, at least 20% of the fossil-based raw materials required for production must be replaced by an equivalent quantity of certified sustainable recycled raw materials in the integrated manufacturing sites or plants.

Furthermore, materials of both categories may be combined in one product. In the case of these "hybrid products", the respective percentages of biomass-balanced and recycled-mass-balanced raw materials can be added up to determine the product's sustainability characteristics, whereby a minimum content of 20% also applies.

### Bill of material

Bills of material are available for the certified products and define the quantity of fossil-based raw materials required for the production of the respective product. Bills of material are determined specific to the process on the basis of the mass balance. Actual formulations from the past three years can also be used instead of a bill of material.

The prerequisite for the use of bills of material is that they are determined under the scope of an existing scheme and documented in quality management processes. At least once a year, bills of material must be reviewed for accuracy and changed if necessary. The annual audit must be documented and any changes archived for a period of at least five years.

Bills of material may be used if the non-conformity resulting from the annual review is documented over a period of five years. During the initial certification, documentation over three years can be accepted. If the maximum deviation from the bill of material was more than 5% in this period, the maximum deviation is the determining factor in conservatively estimating the need for sustainably produced raw materials or intermediate products.

In the case of newer products for which no long-term empirical data is available, a conservative bill of material must be defined in consultation with the auditors and be reviewed annually. If events occur during the year that have a major effect on the bill of material, it must be adjusted in that year.

### General communication and advertising claims

After successful certification, every scheme participant may generally use the "REDcert<sup>2</sup>" logo and word mark for communication purposes. Changes to the appearance of the "REDcert<sup>2</sup>" trademark, in particular by combining it with other signs or seals, require the

express consent of REDcert. Advertising claims may be used to market the products certified under this standard if it is clear at what point the sustainable raw materials were introduced into the process. The requirements for the use of the REDcert<sup>2</sup> logo as well as certain product statements are explained in the "Guidelines governing the use of the REDcert<sup>2</sup> logo and the representation of claims for bio-based and biomass-balanced products".

## 5.8 Scheme functionality

The figure below provides an overview of the structure and function of the REDcert<sup>2</sup> scheme for the certification of sustainable material flows in the chemical industry:

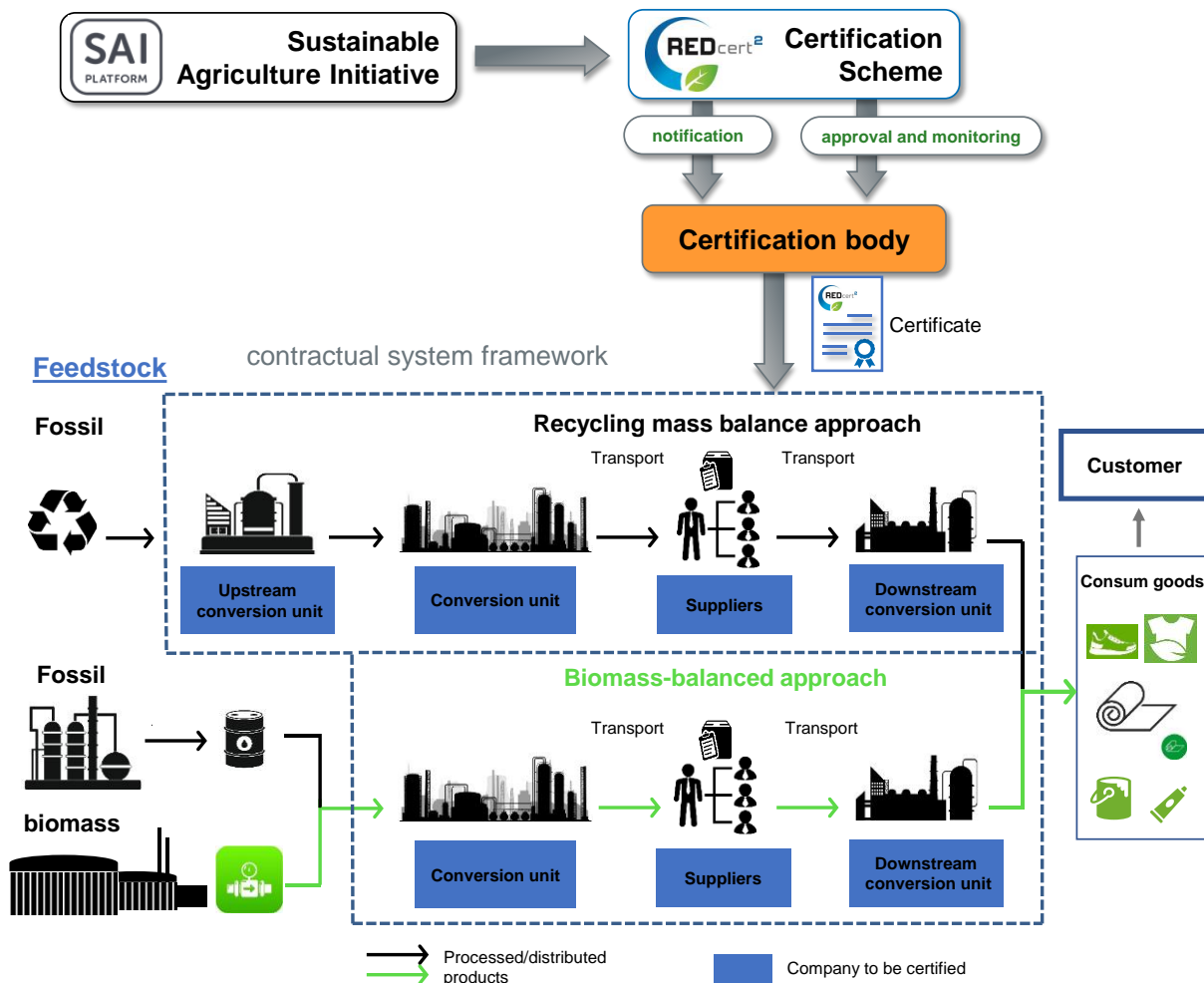


Figure 7: Diagram of the REDcert<sup>2</sup> value chain.

### Employee qualifications

To ensure compliance with the scheme principles along the entire value chain, companies must ensure that their employees are sufficiently qualified. This means that all individuals responsible for compliance with the requirements described in this document must be familiar with them and receive regular training (e.g. annually).

The production and supply chain for raw materials and further processed products used in the chemical industry includes the following actors:

### Interfaces

Interfaces are economic operators along the production and supply chain that require certification. A distinction is made between:

- Suppliers
- Conversion plants or integrated manufacturing sites/plants such as chemical plants, paint and varnish producers, plastic producers, etc.

### Suppliers

Many economic operators along the production/supply chain up to the end user are involved in trade or storage of raw materials or processed certified products or act as brokers. These economic operators are considered "suppliers" under REDcert<sup>2</sup>. Suppliers can handle transshipment (storage, mixing) of sustainable raw materials and/or processed certified products without having to convert them. This definition also includes intermediate suppliers/steps that do not "physically" handle the biomass and/or processed certified products.

Suppliers are issued a certificate as proof that they satisfy the scheme requirements.

### Conversion plant/integrated manufacturing sites and plants

The conversion of raw materials or further processing of certified products takes place in chemical factories, paint and varnish plants, rubber and plastics factories, etc. These companies must set up a mass balance and account management system which records all quantities of sustainable and non-sustainable raw materials. This documentation includes all consignments with sustainable and non-sustainable biomass prior to conversion as well as all *certified products* that can be removed from this system.

All companies or company groups of the conversion plants mentioned above as examples are subject to certification in accordance with the provisions of this document and receive a certificate as proof of compliance with the scheme requirements.

## 5.9 Registration and certification

See REDcert-EU document "Scope and basic scheme requirements".

The scope of certification must be documented in writing by economic operators and submitted to the certification body as an annex to the application for certification. In order to change the scope of certification, a new application must be submitted to the certification body.

## 5.10 Recognition of other certification schemes

The requirements of the REDcert-EU document "Scope and basic scheme requirements" apply. A list of recognised schemes can also be found in [Annex 2c](#) of this document.

## 5.11 Other raw materials

If a scheme participant uses sustainable raw materials that have not been certified by REDcert or another certification scheme recognised as per section 5.10 when joining the scheme, REDcert will grant a transitional period to meet the requirements. In this case, recognition is possible if the following conditions are met:

From the time of certification, it must be ensured that for each batch of a product at least 25% by weight of the sustainable raw materials are REDcert<sup>2</sup> certified or have a certification recognised as equivalent (see [Annex 2c](#)). This percentage increases to 50% after the first year, to 75% after the second year and to 100% of sustainable raw materials after the third year.



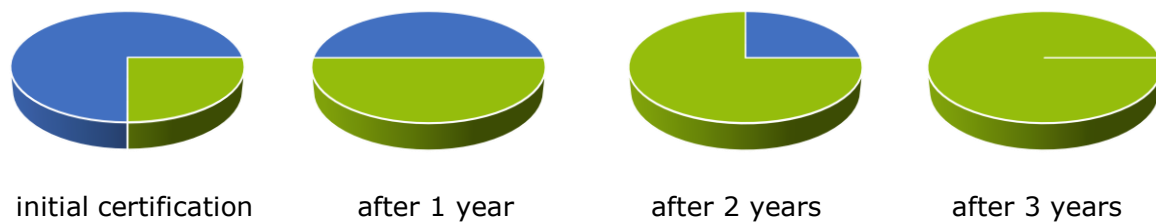


Figure 8: Minimum percentage of REDcert-certified sustainable raw materials or equivalent sustainable raw materials recognised as equivalent by REDcert (green) compared to the sustainable raw materials from other sources used when entering the system (blue).

## 5.12 Use of renewable energy sources

This section outlines optional criteria for the use of sustainably generated electricity ("green electricity") under the REDcert<sup>2</sup> scheme. It contains a sample calculation and allocation principle, criteria for the generation and use of renewable electricity, documentation requirements and possible advertising claims.

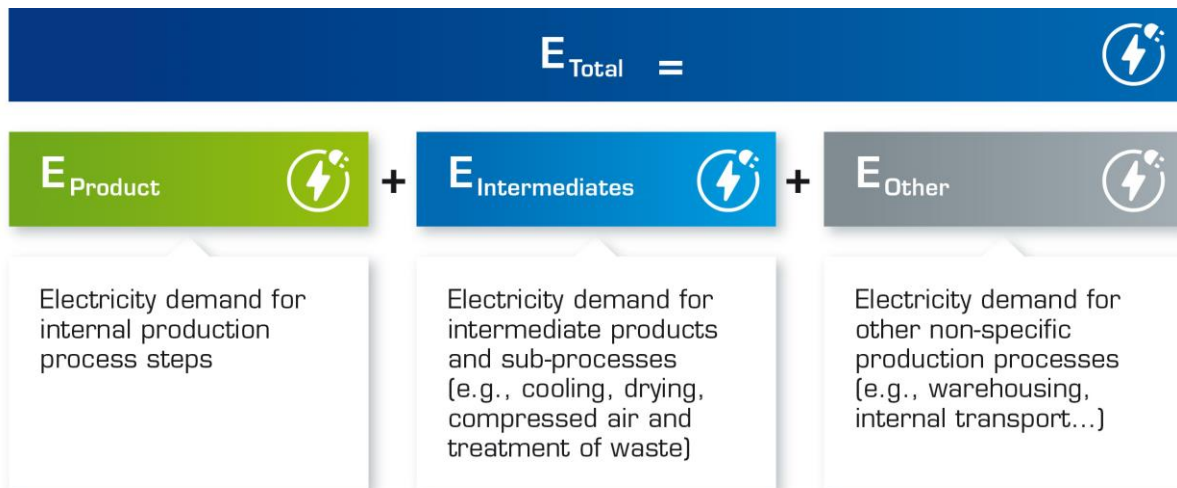
### Calculation of the amount of electricity used and allocation principle

The use of renewable electricity follows the mass balance approach described in the REDcert<sup>2</sup> and REDcert-EU scheme document "Scheme principles for mass balancing". The calculation is based on the production site ("gate to gate").

The total amount of renewable electricity ( $E_{\text{total}}$ ) allocated to the certified product includes

- the total electricity required for all processes listed in the *bill of material* of the product ( $E_{\text{product}}$ ).
- all electricity used within the factory for the production of intermediate products or feedstock that can be attributed to the product (e.g. cooling, drying, compressed air generation or waste treatment) ( $E_{\text{intermediate products}}$ ).
- all additional production-related electricity flows that are not included in bill of material (e.g. operation of warehouses or internal transport) ( $E_{\text{other}}$ ). All *essential* factors of  $E_{\text{other}}$  must be taken into account in the process. If the actual value is difficult to determine,  $E_{\text{other}} = 0.05 \times [E_{\text{product}} + E_{\text{intermediate products}}]$  can be assumed.

This means that all intermediate products necessary to produce the end product as well as all processes that require electricity must be listed and included in the electricity requirements of the product. For this calculation, the indirect electricity requirements that are difficult to allocate (shared consumption by e.g. office buildings, laboratories) can be excluded.



The renewable electricity used for the above processes can either be produced on site or sourced from electricity suppliers. Obtained renewable energy certificates (e.g. Guarantees of Origin (GO)) can be freely allocated to the electricity consumption of each product being considered for certification, whereby double counting of renewable electricity must be excluded. The total amount of certified renewable electricity purchased by the company in the corresponding defined mass balance period may not be exceeded (see Figure 9).

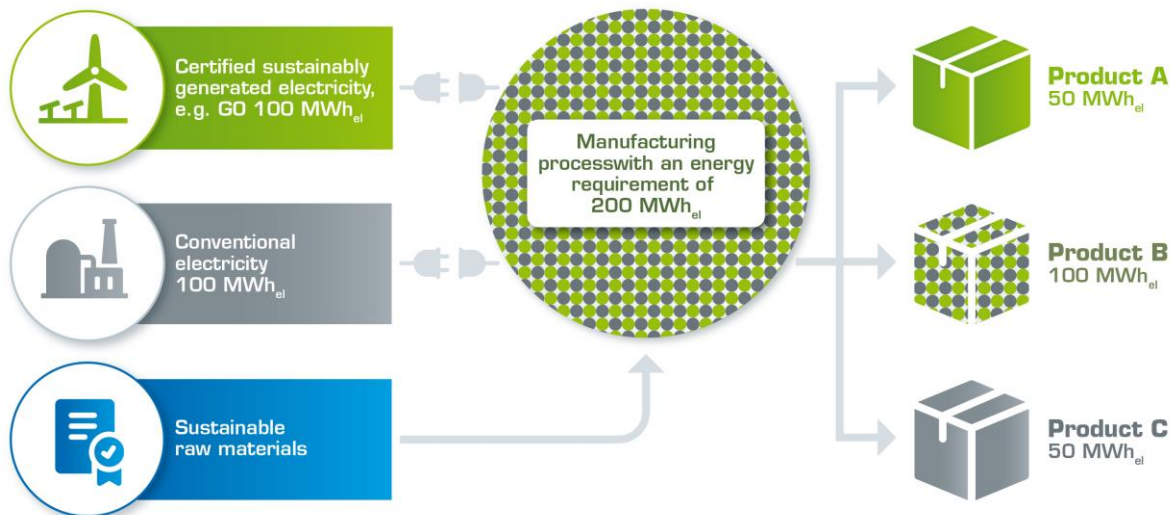


Figure 9: Example of how the mass balance approach is applied for the allocation of renewable energy.

In the above example, certified product A with an allocated share of 100% green electricity receives an additional advertising claim for the use of green electricity. Product B, on the other hand, only uses 50% sustainably generated electricity and is not granted an additional advertising claim. Finally, product C is produced entirely using conventional electricity.

## Criteria for taking renewable electricity into account

This section describes the four central criteria of green electricity certificates that are taken into account under REDcert<sup>2</sup>: renewability, regionality, time correlation and additionality.

### 1. Acceptable sources of renewable electricity (renewability)

The electricity used for the processes associated with a given product must be fully certified with renewable energy attribute certificates (EACs) such as GOs, Renewable Energy Certificates (RECs) or International Renewable Energy Certificates (I-RECs). Within the EU, renewable electricity is defined in Article 2 of the Renewable Energy Directive 2018/2001 (RED II). It includes wind, solar (solar thermal and solar photovoltaic) and geothermal energy, ambient energy, tide, wave and other ocean energy, hydropower, biomass, landfill gas, sewage treatment plant gas and biogas. The use of independent certification schemes (ICS) that offer equivalent certification following the guidelines of the EACs can be recognised by REDcert on a case-by-case basis.

To avoid double counting of renewable electricity, EACs from power plants that are subsidised through a local feed-in tariff are not taken into account.

### 2. Regionality

To avoid shortages in the electricity distribution grids, it is important to source renewable electricity as close as possible to the production site. The prerequisite is a physical connection through an end-to-end electricity grid between renewable electricity generation and the consumer. For example, renewable electricity produced in Iceland may therefore not be counted towards electricity use in continental Europe. In addition, to meet this criterion, the renewable electricity source must not be located outside a radius of 2,000 km around the operation site where it is used.

### 3. Time correlation

The synchronicity between energy generation and use is very important to drive the development of renewable energy and grid expansion and to limit the required electricity storage capacities. As defined in Article 19 of the RED II, GOs can be applied for a maximum of 12 months after they are issued. Ideally, the allocation should take place within the balance period of 3 months defined in section 8.2 of the "Scheme principles for mass balancing".

#### 4. Additionality

To meet the challenges of climate change, there must be a vigorous effort to build new renewable energy plants. It must therefore be ensured that, in addition to government subsidies, further indirect support is given to promote the construction of new renewable plants. At least 30% of the EACs issued by the certified company – excluding renewable energy generated with its own infrastructure – must include certificates from renewable power plants that are not older than 5 years.

#### Documentation requirements

In order to meet the optional criteria for the use of renewable electricity, the certified company must comply with the guidelines for the allocation of renewable electricity for the production of a specific product.

The EAC in question (e.g. GO, REC or I-REC) must be registered in a national registry that excludes double counting. If guarantees of origin or other valid EACs from the national register have been issued, this means that the technical and legal requirements have already been verified by an independent expert as part of the plant registration and can be recognised accordingly. To avoid double counting, only guarantees of origin that display the label "Without support" in their factory data are permitted.

In countries where there is no EAC registry, appropriate proof must be provided by an independent certifier (e.g. auditor or independent certification body). Alternatively, the international registry may also be considered (<https://evident.app/>).

The proof of renewable electricity status by EAC must include its expiry date, the company name or certificate, information on the energy source, the date of installation of the EEG system and the location of the power plant.

The bill of material of a particular product must indicate the amount of electricity required for its production, followed by the certificate number or renewable energy attribute code. In addition, information on the EAC must be provided during the audit. In particular, in relation to the termination date of the EAC (GO, REC or I-REC), accompanied by the basic information requirements of an EAC as defined by RED II or local laws (outside the EU).

#### Additional advertising claim for renewable electricity use

Meeting the REDcert<sup>2</sup> criteria related to renewable electricity entitles the operator to an additional statement for the certified products. For all products that meet the optional

criteria for renewable electricity and have been produced entirely with renewable electricity in accordance with the principle in Figure 9, the claim “100% renewable electricity used for production in our facilities” can be included.

Other requirements for the use of the REDcert<sup>2</sup> logo as well as specific product claims are described in the “Guidelines governing the use of the REDcert<sup>2</sup> logo and the representation of claims for bio-based and biomass-balanced products”.

### 5.13 Special requirements for recycling processes

Due to the diverse properties of inorganic materials, REDcert reserves the right to issue process-specific rules in individual cases. These are published in the new REDcert<sup>2</sup> document “Specific requirements for recycling processes in the chemical industry” on the REDcert website. Unless explicitly excluded or specifically formulated for this additional certification option, the basic definitions and requirements of the REDcert<sup>2</sup> scheme for the chemical industry apply. The rules for recycled organic compounds in section 5 can be applied analogously to inorganic compounds.

## 6 Measures for transparency and prevention of misuse and fraud

See REDcert-EU document “Scope and basic scheme requirements”.

### 6.1 Transparency in scheme representation

See REDcert-EU document “Scope and basic scheme requirements”.

### 6.2 Transparency in scheme membership

See REDcert-EU document “Scope and basic scheme requirements”.

## 6.3 Transparency in scheme management

See REDcert-EU document "Scope and basic scheme requirements".

## 6.4 Transparency in certification

See REDcert-EU document "Scope and basic scheme requirements".

## 6.5 Assuring scheme integrity and preventing misuse and fraud

See REDcert-EU document "Scope and basic scheme requirements".

# 7 Fee schedule for scheme participants

See the current versions of the REDcert-EU document "Scope and basic scheme requirements" or "Fee schedule for scheme participants (in the chemical industry)" on REDcert's website ([www.redcert.org](http://www.redcert.org)).

## 8 Principles of the mass balance system

For the sake of clarity, the table below shows how the essential elements of the REDcert-EU scheme document "Scheme principles for mass balancing" correlate to the REDcert<sup>2</sup> scheme requirements for the certification of sustainable material flows in the chemical industry:

<b>REDcert-EU</b> <b>"Scheme principles for mass balancing"; section...</b>	<b>REDcert<sup>2</sup></b> <b>"Scheme principles for the use of biomass-balanced products in the chemical industry", Version 1.2</b>
2 Scheme principles for mass balancing	✓ 8 Principles of the mass balance system (Reference; supplementing the following provisions in this document)
✗	8.1 Balancing method
✗	8.2 Balance period
✗	8.3 Ensuring adequate availability of MBUs
✗	8.4 Account management system
✗	8.5 Additionality
✗	8.6 Double counting not permitted
✗	8.7 Principles of traceability
✗	8.8 Requirements for downstream companies

## 8.1 Balancing method

The certified scheme participant uses a reliable process for continuous monitoring and ensuring adequate availability of MBUs (sourcing, storage, delivery). The sourced quantities are clearly identified and confirmed by both parties (supplier and producer).

- For a dedicated production process, a conventional mass balance calculation is required.
- The conversion of fossil-based and certified sustainable raw materials to *MBUs* is based on the lower heating values, which are standardised to a clearly defined substance (e.g. methane) (see Figure 10 on page 38).
- The conversion of intermediate products into MBU units is based on the quantities of (fossil-based) raw materials theoretically required for the production of this intermediate product on the basis of a chemical process established for the production of the respective intermediate product. It is not necessary for this technology to actually be used within the production facility. In this case, the required raw material quantity can be conservatively estimated on the basis of processes described in the literature and implemented technologically (see Figure 3 on page 15).
- The conversion of certified sustainable raw materials not listed in *Annex 2a* is carried out with the same conversion factor as the fossil-based equivalent after conversion of intermediate products to MBUs (example: bioethylene is to be regarded as the sustainable equivalent of fossil ethylene, it can be assumed that both have the same conversion factors).
- For certified sustainable organic raw materials for which no fossil equivalent exists (e.g. wood), the conversion is carried out based on their lower heating values, which are standardised to a clearly defined substance (e.g. methane).

### Balance period

The balance period, which can optionally be selected as sales-based or production-based, must be agreed in advance of the conformity assessment.

In a sales-based balance period, the required quantity of materials certified as sustainable is removed from the account management system at the time of sale. As a result, it is not necessary for the required quantities to already be available in the system during production. The balance period may not exceed 3 months after the sale.

No negative balance is allowed after the end of the balance period. Positive balances up to a maximum of the amount of physically existing stocks may be transferred as long as their *expiry date* is not exceeded.

The extension of a balance period beyond the maximum specified period of 3 months must be requested in writing from REDcert, stating the reasons. The relevant certification body



must also be informed. The maximum possible extension of this period is limited to 12 months. REDcert decides in individual cases, on the basis of the information provided, whether to reject or approve the application. This decision only involves the balance period outlined in the application and has no effect on other balance periods or the basic requirements for balancing.

In a production-based balance period, the determined quantity of materials certified as sustainable is already available at the time the product is produced.

## 8.2 Ensuring adequate availability of MBUs

The certificate holder has a process in place that ensures that the corresponding certified sustainable raw materials can be sourced in sufficient quantities at the right time in line with the forecast sale of certified products. This process also includes possible deviations of the actual values from the bills of material and ensures that exceeding the bills of material by actual values does not result in a shortfall in the balance (negative balance) at the end of the balance period.

## 8.3 Account management system

The entered and removed *mass balance units* must be managed in an account management system. Companies may operate several separate account management systems in order to make different product-specific claims. If both biomass-balanced and recycled materials or products are produced in *integrated sites*, multiple accounts must be maintained (in the ERP system) to the extent that the statements about the product relate to the origin of the respective raw material (*biogenic* and/or *recycled*). One MBU can only be administered here in a single account management system. The account management system selected for a certification cycle is binding for the respective product.

For the production or sale of *certified products*, the respective percentage of certified sustainable materials must be removed from the account management system. The allocation of certified MBUs to (intermediate) products is generally only permitted if there is a technical possibility that these (intermediate) products can actually contain physically sustainable substances. The only exception to this rule applies if the *extended mass balance* (EMB) described in *Annex 1* is applicable.

## Entries

Entries of *MBUs* in the account management system are made, as explained in section 8.1, after considering the respective production pathway, taking into account verified conversion rates. The MBUs entered into the account management system do not have to be differentiated by their raw materials and are therefore interchangeable. MBUs can only be entered after the raw materials have been physically transferred to the spatial boundaries for mass balancing and if it is ensured that the raw material is used for material purposes. Certified sustainable materials that are used to generate energy may not be entered in the account management system. The last possible measurement is decisive for the quantity of entries. If the allocation to energy and material use takes place only after the physical transfer to the spatial boundaries for mass balancing, entry to the account management system is permitted if evidence can be provided that the possibility of double counting is ruled out.

## Removals

Entries are removed depending on the selected *balance period*. If the sales-based balance period is used, the quantity is removed when the product is sold. If the production-based balance period is used, the quantity is removed with the product is manufactured. The removals must be documented for each specific product and the respective amount of MBU is booked out based on the bill of material (see section 5.7). Once a year, the entries must be corrected on the basis of the *bills of material* using actual values. If the actual values are less than the bills of material used, they do not need to be corrected. For corrections, a negligibility limit applies: if the deviation is  $< 0.5\%$  or  $< 200$  kg MBUs, it is not necessary to correct the values.

## 8.4 Additionality

The scheme participant may only use additional certified sustainable substances for *certified products*, which replace fossil-based raw materials as of the date of certification.

## 8.5 Double counting not permitted

The account management system must be suitable for preventing *double counting* of MBUs, especially if different account management systems are in use.

### Double counting of products sold as bio-based or consisting purely of recovered materials

Quantities of sustainable biomass used for the *dedicated production* of products sold as *bio-based* or consisting purely of *recovered materials* may not be included in the account management system, i.e. credited twice. It is also possible, for example, to sell the product as bio-based or consisting purely of recovered materials if the certified sustainable materials are included in the list of contents or it is confirmed to the customer upon request that they are contained in the product. If a raw material is used both for the production of products sold as bio-based or consisting purely of recovered materials and for the production of mass-balanced products, an overall balance for this raw material must be provided. The overall balance must list the quantities of the raw material used for dedicated and mass-balanced production. A product-specific list of the quantities of the manufactured products must also be available.

### Other double counting

The total quantity of certified sustainable raw materials used (for dedicated and certified products) may only be communicated if the impression is not created that every product sold contains a corresponding percentage of certified sustainable materials.

## 8.6 Principles of traceability

### Documentation of material flows

The scheme participant is required to fully document the material flows from the certified sustainable materials used to the certified end product. The system used is part of the quality management system.

### Handling waste and exhaust gas flows

Waste and exhaust gas flows arising in the production process must be accounted for in the balance. The loss due to the conversion rate is transferred proportionately to the sustainable properties, i.e. the sequestered quantities of MBUs must be removed from the account management system using the respective balancing method. The waste and exhaust gas flows must be measured for this data to be available. Otherwise, the provisions apply based on the principle of *accuracy*.

### Handling by-products

By-products can relinquish their sustainable property if the possibility of double counting can be ruled out. The sustainable property does not have to be tied to the specific raw materials or intermediate products. This means that their identity as a sustainable product is no longer given. The relinquishment of the sustainable property can be credited to the bill of material. When determining the amount of the credit, waste and exhaust gas flows in the further processing chain of the by-product must be accounted for.

### Validity of entered MBUs

Entered MBUs are valid for a period of 12 months.

If the quantity of sustainable materials in the balance exceeds the physical quantity of sustainable materials in the company, only the physically existing quantities can be carried forward to the next *balance period*. This means, for example, that *Mass Balance Units* (MBUs) expire if there is no longer adequate inventory in storage. Credit balances of sustainable materials may then not be transferred to the next balance period. This kind of situation can occur, for example, if sustainable bio-naphtha is included in the mass balance but during the balance period a large quantity of it was sold for a use other than for the production of *biomass-balanced products* (e.g. for energy generation).

Deviations from this rule can be accepted if it can be shown that adequate storage capacity for the raw material or its derivatives is available on the site.

### Rules for the process-spanning trade of certified sustainable material flows

Suppliers of certified sustainable materials generally have to give their customers information on the quantity of material supplied that replace fossil-based resources in the production process of the material supplied. This information can be provided in one of two ways. One option is to indicate the quantity of MBUs contained in the product. In this case, it must be indicated which standardised material these MBUs are based on (preferably methane). Alternatively, information can also be provided on the relative quantity of fossil fuel-saving materials used in the production of the material. In this case, customers are then required to determine the MBUs using this information. This is determined by calculating the quantity of raw materials required for the production of the material in question. This is a conservative calculation based on the processes described in the literature and implemented in technological processes.

All other documentation requirements are set out in the REDcert-EU document "Scheme principles for mass balancing".

## 8.7 Requirements for downstream companies

For downstream companies that use biomass-balanced products or recovered or recycled materials certified as sustainable, special requirements apply to the mass balance and communication. In addition to certified products, downstream companies can also use certified sustainable biomass that has a REDcert-EU, REDcert<sup>2</sup>, FSC or PEFC certificate or another scheme that has been positively evaluated by the *Sustainable Agriculture Initiative* (SAI). In addition, downstream companies can also use directly recovered or recycled materials, provided that they can furnish proof of sustainability certification in accordance with this document or their origin from a certification scheme recognised by REDcert as "equivalent" (see [Annex 2c.](#)).

The downstream company must prove that the use of certified products in production and with the same bill of material requires only marginally more energy and thus reduces the use of fossil-based resources overall.

### 8.7.1 Balancing requirements

Downstream companies carry out either process-specific or process-spanning balancing. The advertising claim allowed for the product determines which method is selected.

#### Process-specific mass balancing

When mass balancing is process-specific, it is determined what percentage of mass-balanced input materials is contained in the certified product. Input and output materials are balanced specific to the process using this method. Balancing across different operating units is **not permitted** in this case. It is not necessary to convert the quantities of input and output materials to MBUs. Only a production-based *balance period* is permitted for a process-specific mass balance.

Accordingly, quantities must be removed from the account management system upon production of the product.

### Process-spanning balancing on the basis of mass balance units

When mass balancing spans processes, it is determined what percentage of fossil-based raw materials is replaced by certified sustainable raw materials along the entire value chain. As a result, balancing as outlined in section 8.1 can be carried out across several operating units. In contrast to process-specific mass balancing, the balance here is based on MBU. All input materials are converted to MBU by converting intermediate products into mass balance units on the basis of the quantities of fossil-based raw materials required for the production of the respective input material (Figure 10). If no certified value is available from the upstream supplier for this purpose, the required raw material quantity can be conservatively estimated on the basis of processes described in the literature which have been technologically implemented (see section 5.2).

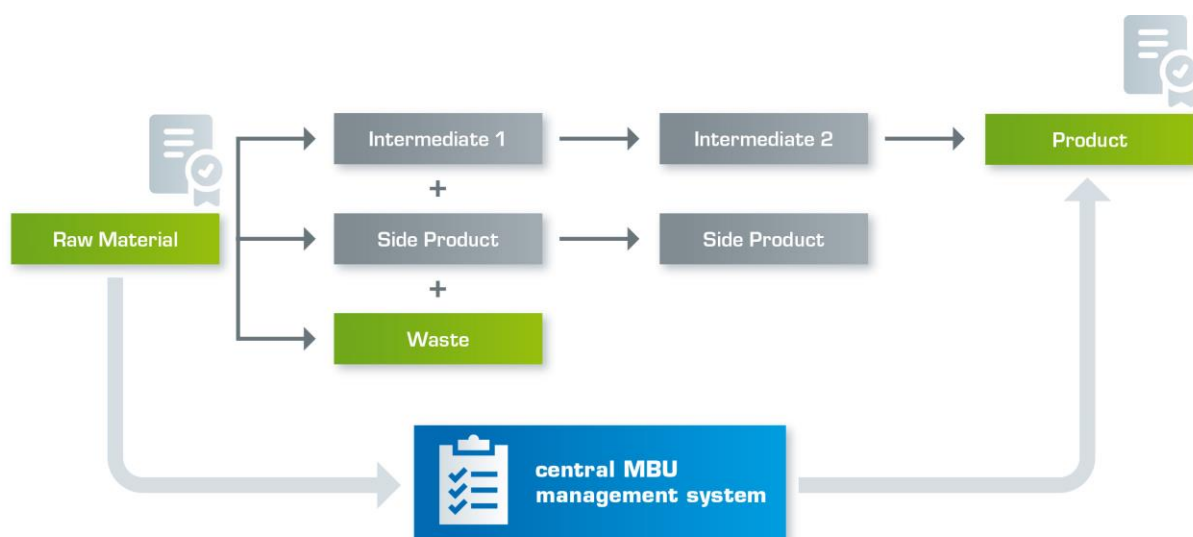


Figure 10: Attribution of sustainable properties by MBUs. MBUs are based on the lower calorific value of the raw material used; for example:  $LHV(\text{naphtha})/LHV(\text{methane}) = 44 \text{ MJ}\cdot\text{kg}^{-1}/50 \text{ MJ}\cdot\text{kg}^{-1} = 0.88$ . One kilogram of naphtha is equivalent to 0.88 MBUs (ISO 22095).

Balancing is optionally based either on the production-based or sales-based *balance period*. However, the latter is only permitted if the products used by the upstream company are certified on the basis of the production-based balance period. Quantities may also be removed upon sale of the certified product. A maximum balance period of three months is permitted.

### Requirements for communication

The requirements for certified downstream companies when using the REDcert<sup>2</sup> logo as well as certain product statements (both a process-specific and process-spanning mass

balance) are described in the "Guidelines governing the use of the REDcert<sup>2</sup> logo and the representation of claims for bio-based and biomass-balanced products".


## 9 Requirements for neutral inspections

The requirements outlined in the REDcert-EU document "Scheme principles for neutral inspections" also apply to the scheme principles for the certification of sustainable material flows in the chemical industry. When this document mentions the REDcert scheme, this always relates to the REDcert<sup>2</sup> scheme. This also applies to other terms such as checklists, integrity and quality assurance measures, etc. In addition, the following provisions apply.

The documented requirements for neutral inspections relate to both the implementation of the requirements of Directive (EU) 2018/2001 of "bioliquids/biofuels/biomass fuels" as well as the supplementary criteria of the REDcert<sup>2</sup> scheme to the extent that they are applicable.

Inspection certificates are not issued in the REDcert<sup>2</sup> scheme. "Certificates" are only issued to verify compliance. Companies in the chemical industry that want to be certified in line with the REDcert<sup>2</sup> scheme requirements must register online on the REDcert website ([www.REDcert.org](http://www.REDcert.org)).

For the sake of clarity, the table below shows how the essential elements of the REDcert-EU scheme document "Scheme principles for neutral inspections" correlate to the REDcert<sup>2</sup> scheme requirements for the certification of sustainable material flows in the chemical industry:

REDcert-EU	REDcert <sup>2</sup>
"Scheme principles for neutral inspections", Version 06; section...	"Scheme principles for the certification of sustainable material flows in the chemical industry", Version 1.2
	9 Requirements for neutral inspections
1 Inspection system	✓ 9.1 Reference
1.1 Types of inspections	✓ 9.2 Reference; supplementing the following provisions in this section
1.2 Process and duration of inspections	✓ 9.3

1.3 Inspection intervals	✓ 9.4 Reference
1.4 Evaluation of the inspection results	✓ 9.5 Reference
1.5 Reporting	✓ 9.6 Reference
1.6 Issuing and revoking certificates	✓ 9.7 Reference; supplementing the following provisions in this section
1.7 Scope of the inspections	✓ 9.8 Reference; supplementing the following provisions in this document
1.8 Risk management	✓ 9.9 Reference; supplementing the following provisions in this document
2 Definition of the scope of sample inspections for upstream operations	✓ 10 Reference; with restriction to non-recovered materials
2.1 Group inspections and certification of farms	✗ (not applicable)
2.2 Inspections and certification of waste producers	✗ (not applicable)
2.3 Inspections and certification of storage sites	✗ (not applicable)
3 Requirements and responsibilities of certification bodies	✓ 11 Reference
3.1 Requirements for certification bodies	✓ 11.1 Reference; supplementing the following provisions in this document
3.2 Revoking approval	✓ 11.2 Reference
3.3 Responsibilities of certification bodies	✓ 11.3 Reference; supplementing the following provisions in this document;
	<b>Note: Inspection certificates are <u>not</u> issued in the REDcert<sup>2</sup> scheme!</b>
4 Requirements of REDcert inspectors	✓ 12 Reference
4.1 Training and qualification	✓ 12.1 Reference
4.2 Required knowledge, professional and practical experience as an inspector	✓ 12.2 Reference; the following provisions in this document are different
4.2.1 Further education and training	✓ 12.2.1 Reference; the following provisions in this document are different



5 Registration process	✓ 13 Reference
5.1.1 Registering as a scheme partner	✓ 13.1 Reference
5.1.2 Registering a certification body	✓ 13.2 Reference
5.1.3 Registering an inspector	✓ 13.3 Reference
6 REDcert integrity and quality assurance measures	✓ 14 Reference

## 9.1 Audit system

See REDcert-EU document “Scheme principles for neutral inspections”.

## 9.2 Types of audits

### 9.2.1 Scheme audits

In the initial and subsequent recertification audit, the *mass balance* and all relevant information such as *bills of materials*, material flows, processes, tools, raw materials used and *products* sold are checked.

If new sustainable products are to be included in the scope of the certificate during the course of the year, the certificate holder must notify the certification body in advance. The need to verify the sustainability characteristics of these products depends on the (calculated) quantity of these products sold. Products which are sold in quantities of < 1 t can be evaluated as trial quantities and are not subject to audits during the year. Products that are (presumably) sold in quantities > 1 t are generally subject to audits. In this case, the audit can be carried out as a document check (desk audit) if the audit criteria in the abridged desk audit checklist can be assessed with the same degree of reliability as an on-site audit. This requires certification bodies to assess the risk level/potential and which type of proof needs to be provided.

In the respective audit framework, e.g. detailed documented information must be checked by means of ERP systems, databases, etc. for traceability, mass balancing and product declaration. The proof used as a basis for a desk audit must be accessible, transparent, traceable, tamper-proof, credible and trustworthy. If the desk audit shows that the

REDcert<sup>2</sup> requirements are not satisfied or not sufficiently satisfied, the certification body must undertake further appropriate steps to check compliance (e.g. on-site audit).

Subcontractors (*suppliers* only) of a certified company who do not make a chemical, physical or biological change to the product, e.g. bottlers or warehouses, do not necessarily have to be inspected on site. The certification body responsible is in charge of assessing which companies need to be audited and in which form (on-site or desk audit). The number of sample audits should be determined based on a meaningful grouping (e.g. by activity, trade volume, other relevant parameters) of all subcontractors. The members of these groups are subject to a sample audit using a risk-based approach.

The risk assessment should include the following risk criteria:

- quantity of the processed product
- product type
- registered office of the company in question
- company size
- operational management (certificate holder vs. independent management)

### 9.2.2 Special audits

See REDcert-EU document "Scheme principles for neutral inspections".

## 9.3 Process and duration of audits

Audits must be carried out in accordance with the requirements of ISO 19011.

The duration of the audit is determined by the respective certification body and contractually agreed with the respective operation prior to beginning the audit.

REDcert, however, has the right to define a minimum duration for the respective steps in the future (particularly based on the audit results) in the interest of quality assurance.

## 9.4 Audit intervals

See REDcert-EU document "Scheme principles for neutral inspections".

## 9.5 Evaluation of the audit results

See REDcert-EU document "Scheme principles for neutral inspections".

## 9.6 Reporting

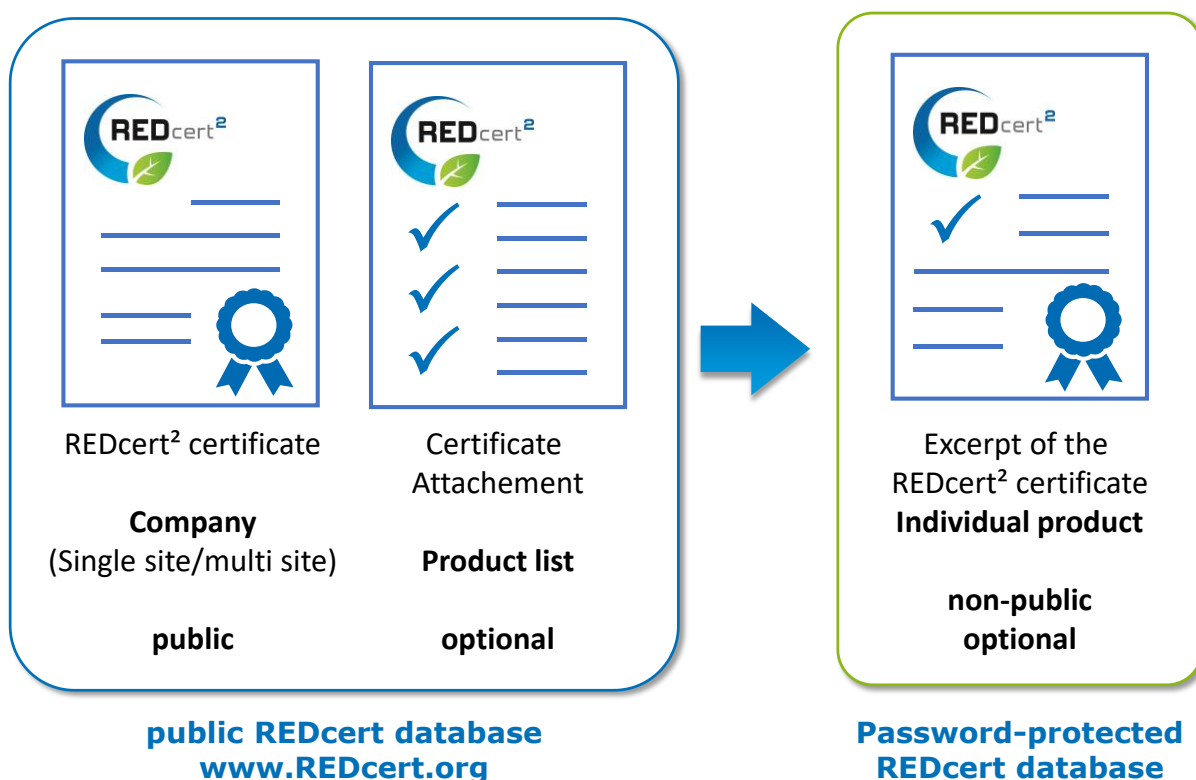
See REDcert-EU document "Scheme principles for neutral inspections".

## 9.7 Issuing and withdrawing certificates

See both the REDcert-EU document "Scheme principles of neutral inspection" as well as the following additions.

Only "certificates" in the form of "single or multi-site certificates" and "product certificates" are issued as proof of conformity. The "single or multi-site certificates" are listed in the scheme's proprietary and publicly accessible database. If required, all *certified products* under a certificate can be listed in the certificate's annex if necessary. The product certificates for the certified products under a certificate can be created by the certificate holders themselves in a protected area of the REDcert certificate database (see section 5.6).

The figure below shows the different REDcert<sup>2</sup> certificates for the certification of sustainable material flows in the chemical industry:



The templates and forms provided by REDcert must be used to issue certificates. The format and/or language of them may be changed, but not the content. REDcert must be informed if the templates or forms are changed. The translated version of a certificate must indicate that it is a translation which is not legally valid.

For identical products – based on a basic certificate – **secondary certificates** can be offered and issued to additional distributors, dealers and shareholders of the certificate holder. Products are considered to be identical if their chemical or environmental properties are not changed and the differences in their physical properties are only negligible. If the chemical or environmental properties of a product are modified, the requirements for a secondary certificate are not fulfilled and the processing company must be certified independently. It is generally only possible to issue secondary certificates if packaged and clearly labelled goods are redistributed by the certificate holder in their original state (closed and sealed) by the additional distributors, dealers and shareholders.

The decision on the admissibility of a secondary certification lies with the certification body responsible following consultation with the basic certificate holder. It is possible to issue secondary certificates for both commercial and retail products. Products that will be or have been changed or products supplied in a loose state are to be represented in the certification via a closed chain. For a secondary certificate to be issued, the following is required: a valid certification contract between the certificate holder and the certification

body, a successful initial certification in which the admissibility of the secondary certification and the existence of the necessary processes are checked. In order to maintain the validity of the secondary certificate, the mass balance and communication of the secondary certificate holder must be checked on a regular basis (risk-based, at least every 12 months) by the certification/registration body. Secondary certificates are valid for a maximum of three years; their validity depends on the validity of the basic certificate.

## 9.8 Scope of the audits

See the REDcert-EU document "Scheme principles of neutral inspection" as well as the following additions.

### 9.8.1 Group certification of operating sites

Compliance with the following conditions enables scheme participants to have their own *operating sites* inspected in the form of what is known as group certification. The individual operating sites must have comparable production processes with uniform *products*, which can be represented centrally and digitally. To this end, the group needs an internal management system to create confidence that the individual group members meet the REDcert<sup>2</sup> scheme requirements. All operating sites in the group must be legally and/or contractually linked by a common administration or ERP system that is defined and implemented, monitored and checked internally by the main office.

The following requirements apply to operating sites:

- The main office of the company must keep a list of operating sites and can decide which operating sites may join the group after consulting the certification body.
- It must be clear between the individual operating sites and the main office that the operating sites are integrated into the company in an organisationally uniform manner and that the ownership structure is unambiguous.
- The group must have or set up a shared main office and appoint a representative of the group management or of the respective business division of the group who is responsible for implementing the scheme requirements.
- The main office is authorised to instruct the operating sites, take necessary corrective action and is responsible for the group inspection.

Compliance with the required criteria must be verified by the certification body responsible, which then decides whether a group certification applies.

#### 9.8.1.1 Scope and process for sample audits of operating sites

The minimum number of *operating sites* for sample audits as part of the initial certification or the annual re-certification is one third of all operating sites belonging to the group. The sample audit must be organised in such a way that non-audited operating sites are included in the sample in the following year. This will ensure that all operating sites belonging to the group are audited in a three-year cycle. The main office is audited once a year on site.

The sample audit of the operating sites is carried out on site once a year and is defined by the certification body. Operating sites that are not subject to on-site sample audits must also be audited by verifying the shared ERP system.

#### 9.8.1.2 Threshold value for a failed audit

If one third of the operating sites audited does not meet the scheme requirements, the scope of the audits must be doubled. In an extreme case, this can continue until all operating sites that belong to this company have been audited on site (inspection density of up to 100%). The main office will be informed of all major non-conformities. Only operating sites that meet the scheme requirements may supply *sustainable products* or *intermediate products* that are certified under REDcert<sup>2</sup>.

Sample audits must be conducted on site. This means that the auditor visits the individual operating sites; a purely documentary check is not permitted.

### 9.9 Risk management

As part of the risk assessment by the certification bodies, the following indicators are to be taken into account at a minimum for the participants in the value chain:

- a) Existence and quality of an internal quality management system
- b) Scope and complexity of the organisation covered by the certification (number of processes and operational units included)
- c) Scope of the *products* to be evaluated (number, length of production chain)

- d) Scope of the input materials used (*aggregates*, intermediates)
- e) Non-conformities in previous conformity assessments
- f) Number of sub-contractors

The risk analysis is to be used to determine the quantity and depth of the inspection to be conducted. This involves at a minimum:

- a) Check of measurement data and original documents
- b) Check of business transactions (purchase/sale)
- c) Check of *bills of material*

In addition, the requirements of section 1.8 Risk management in relation to the inspection system and section 3.3.1 Risk management in relation to the certification bodies found in the REDcert-EU document "Scheme principles of neutral inspections" apply.

## 10 Scope of sample audits for upstream operations

See REDcert-EU document "Scheme principles of neutral inspections" if non-recovered materials are involved.

## 11 Requirements and responsibilities of certification bodies

See REDcert-EU document "Scheme principles for neutral inspections".

### 11.1 Requirements for certification bodies

All certification bodies require accreditation according to the principles laid down in Article 4 of Regulation (EC) No 765/2008, either by the competent authority of the respective country or by a national accreditation body according to ISO/IEC 17065:2013.

REDcert reserves the right to request further proof of accreditation for the approval of certification bodies in the REDcert scheme.

The certification bodies conduct their audits in accordance with the requirements in ISO 19011 (prerequisite for accreditation). Conformity evaluations are carried out in line with the specifications of ISO/ICE Guide 60.

The certification bodies must demonstrate experience in checking mass balance systems (certification of biofuels/liquid biofuels/biomass fuels according to Directive (EU) 2018/2001, Art. 30).

Before starting certification activities, a designated representative appointed by a certification body must have taken part in a "Train-the-Trainer" course of the REDcert<sup>2</sup> scheme principles for the certification of sustainable material flows in the chemical industry. He must transfer the knowledge acquired within the certification body to auditors and employees involved in REDcert<sup>2</sup> certification. Additional training requirements for auditors (see section 12.2.1) remain unaffected.

## 11.2 Revoking approval

See REDcert-EU document "Scheme principles for neutral inspections".

## 11.3 Responsibilities of certification bodies

See REDcert-EU document "Scheme principles for neutral inspections".

### 11.3.1 Risk management

See REDcert-EU document "Scheme principles for neutral inspections".

### 11.3.2 Performing audits and issuing certificates and inspection certificates

The certification bodies have to prove implementation of a documented process that governs the certification process and the issuance of certificates and inspection certificates under the REDcert<sup>2</sup> certification scheme. The general requirements of the audit process are specified by the standard ISO 19011.

The requirements of the REDcert-EU document "Scheme principles of neutral inspection" also apply.



**No** inspection certificates are issued in the REDcert<sup>2</sup> scheme for the certification of sustainable material flows in the chemical industry and **no** surveillance audits are to be conducted in the area of waste and residues following initial certification.

### 11.3.3 Lists of interfaces

See REDcert-EU document "Scheme principles for neutral inspections".

### 11.3.4 Storing and handling information

See REDcert-EU document "Scheme principles for neutral inspections".

### 11.3.5 External and internal training for auditors

See REDcert-EU document "Scheme principles for neutral inspections".

## 12 Requirements of REDcert auditors

See REDcert-EU document "Scheme principles for neutral inspections".

### 12.1 Training and qualification

See REDcert-EU document "Scheme principles for neutral inspections".

### 12.2 Required knowledge, professional and practical experience as an auditor

Auditors who audit on the basis of the REDcert<sup>2</sup> scheme principles for the chemical industry must meet the following requirements:

Special skills	Audit technique, communication skills, extensive knowledge of the legal requirements in the relevant area and of the REDcert <sup>2</sup> scheme requirements for the
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	certification of sustainable material flows in the chemical industry
Required qualification as an auditor	Training (e.g. in accordance with EN ISO 19011) Duration: at least 3 days
Professional experience	At least 5 years of professional experience in the area to be audited in a relevant position
Practical experience as an auditor	At least 5 audits in the last 2 years in the audited area (e.g. ISO 9001, ISO 14001, REDcert (conversion), environmental verification activities) as well as 2 years of audit experience in a certification standard that certifies quantity-specific information

### 12.2.1 Further education and training

In addition to furnishing proof of the requirements under 12.2, auditors must have participated in a *two-day* basic training of the REDcert<sup>2</sup> scheme for the certification of sustainable material flows in the chemical industry which addresses in particular the special features of the *mass balance approach* before they start their activities in the REDcert<sup>2</sup> scheme.

## 13 Registration process

See REDcert-EU document "Scheme principles for neutral inspections". [Annexes 3](#) and [4](#) contain the applications for registration of a certification body or an auditor under the REDcert<sup>2</sup> certification scheme for the certification of sustainable material flows in the chemical industry.

### 13.1 Registration as scheme partner

See REDcert-EU document "Scheme principles for neutral inspections".

#### REGISTRATION



Figure 11: Diagram of the registration process.

### 13.2 Registering a certification body

See REDcert-EU document "Scheme principles for neutral inspections".

### 13.3 Registering an auditor

See REDcert-EU document "Scheme principles for neutral inspections".

## 14 REDcert integrity and quality assurance measures

See REDcert-EU document "Scheme principles for integrity management".

## 15 Sanction system

In terms of the sanction system, the stipulations in the REDcert-EU scheme apply exclusively and in full.

<b>REDcert-EU</b> <b>"Sanction system", section...</b>	<b>REDcert<sup>2</sup></b> <b>"Scheme principles for the use of biomass-balanced products in the chemical industry",</b> <b>Version 1.2</b>
1 Introduction	✓
2 Procedure	✓
3 Special requirements	✓

## 16 Relevant documents

The document structure of the REDcert<sup>2</sup> scheme principles for the certification of sustainable material flows in the chemical industry includes the following documents:

No.	Document	Published/revised
1	Specific requirements for recycling processes in the chemical industry	The current versions of the supplementary REDcert <sup>2</sup> scheme principles for the certification of sustainable material flows in the chemical industry are published on the website at <a href="http://www.red-cert.org">www.red-cert.org</a> .
2	REDcert-EU scope and basic scheme requirements	
3	REDcert-EU Scheme principles for mass balancing	
4	REDcert-EU Scheme principles for neutral inspections	
5	REDcert-EU Sanction system	
6	Checklist for the inspection of interfaces, operating sites and suppliers of sustainable material flows in the chemical industry (REDcert <sup>2</sup> )	
7	Desk audit checklist for the inspection of interfaces, operating sites and suppliers of sustainable material flows in the chemical industry (REDcert <sup>2</sup> )	
8	Checklist for the inspection of waste producers/collection points that deliver waste and residues to the chemical industry (REDcert <sup>2</sup> )	

## 17 Revision information

Compared to version 1.1, which is valid until 31.12.2022, the present document "Scheme principles for the certification of sustainable material flows in the chemical industry (Vers. 1.2)" includes additions to the content, which are summarised in table below". In addition, many paragraphs have generally been reworded to make the text easier to read and some specific questions have been addressed.

Section	Change
Overall Document	Editorial changes and highlighting the importance of recycling; additional figures
<i>Section 1</i>	Mineral raw materials included in the REDcert <sup>2</sup> scheme document for the first time Unit counting as an additional account management system
<i>Section 3</i>	Possibility of licensing companies included by REDcert Requirements for sustainably produced biomass moved to section 5.1 and 5.2
<i>Section 5.2</i>	Generalisations of the previous regulations on sustainably produced biomass
<i>Section 5.3</i>	Criterion for prioritising efficient recycling methods
<i>Section 5.4</i>	New sub-section "Input materials partially recycled for energy"
<i>Section 5.5</i>	Application of chemical recycling beyond the pyrolysis process. Some processes result in virgin quality intermediates, which may then in turn be entered into the MBU system.
<i>Section 5.7</i>	Generalisations, approval of mineral raw materials and explicit recognition of hybrid products based on biomass and recycled materials
<i>Section 5.10</i>	Specific information moved to Annex 2c
<i>Section 5.11</i>	New version with identical content
<i>Section 5.12</i>	New section
<i>Section 5.13</i>	New section
<i>Section 16</i>	New document "Specific requirements for recycling processes in the chemical industry"
<i>Section 17</i>	New section for revision information

## Annex 1 – Definition of terms

### Operating site

An operating site is defined as a dependent fixed business operation or plant operating on behalf of the company.

### Bio-based product

A bio-based product from *dedicated production* consists partly or entirely (>99%) of certified sustainable biomass and is marketed as such. The use of bio-based raw materials and intermediate products can be verified, for example, by  $^{14}\text{C}$  spectrometry.

### Biomass

The term biomass refers to the biodegradable fraction of products, waste and residues from biological origin from agriculture (including vegetal and animal substances), forestry and related industries including fisheries and aquaculture, as well as the biodegradable fraction of industrial and municipal waste. Biomass has a biogenic percentage of at least 99%. The non-biogenic part is the result of unavoidable production processes. In addition, the term can also include hydrogen, for example, as long as it comes from electrolysis using electricity from renewable energy sources.

For information on the requirements for sustainably produced biomass in the REDcert<sup>2</sup> scheme for the chemical industry, see sections 5.1 and 5.2 on page 13.

### Chemical and mechanical recycling

**Mechanical recycling** refers to the recovery of valuable materials using physical methods that do not change the chemical identity of the material being recycled. This includes, for example, granulation and compounding, distillation and sublimation. Materials recovered in this way may lose some of their physical properties and are therefore managed solely on a mass balance basis.

**Chemical recycling** involves temporarily or permanently changing the chemical identity of the recovered substance through a chemical reaction. This includes, for example, the pyrolysis of used plastics or the solvolysis of polymers (monomerisation). Chemical recycling usually results in virgin quality intermediates or, for example in the case of pyrolysis, raw materials (pyrolysis oil). Chemically recycled materials can either be traced by

conventional mass-balance or booked into an MBU account management system; chemically recycled raw materials are converted to MBUs based on their lower heating value (LHV).

### Dedicated production

Dedicated production is a chemical, biological or physical manufacturing process that ensures, through the separation of material flows, that used, certified sustainable source materials are physically integrated into the product ("identity preservation"). In this way, *dedicated products* made entirely or partly of *biomass* or *recycled materials* can be produced.



### Dedicated product

A *dedicated product* originates from dedicated production with clearly separated material flows and is produced partly or entirely from certified sustainable recycled materials, biomass or biomass-based intermediate products and is marketed as such. Products based entirely on biomass from dedicated production are also called *bio-based products*.

### Extended mass balance (EMB)

An extended mass balance is defined as a clearly defined domain. Within the limits of this domain, a company is authorised to operate a single accounting system. This concept allows sustainable properties to be flexibly attributed (Figure 12) and helps to reduce transport routes. No physical connection between the individual operating sites included in



the spatial boundaries for mass balancing is required. Mandatory requirements for the scheme-compliant compilation of an extended mass balance are as follows:

- The operating sites in the spatial boundaries for mass balancing are under the operational management of the same company
- The transfer of sustainability properties is only permitted for identical products with a valid product certificate
- All operating sites are certified according to this document and have a valid certificate
- The balance limit is a maximum distance of 2,000 km



Figure 12: Functional principle of the extended mass balance. Sustainable properties can only be attributed if the same product is produced at both sites; it is not possible to attribute sustainable properties between chemically identical raw materials. The transfer of MBUs between chemically non-identical products is also ruled out.

### Fossil-based raw materials

All substances listed in [Annex 2a](#) are considered fossil-based raw materials. Other fossil-based raw materials can be recognised by the REDcert scheme on a case-by-case basis.

### Accuracy

The requirements for and compliance with a measuring and weighing system are represented in the quality management system (QMS) of the certified company (selection of measuring and weighing systems, regular calibration, etc.) and include validity checks and measures which must be initiated accordingly in the event of non-conformities. The measuring and weighing system concentrates on the measurement of main and by-products, waste and exhaust gas flows. For the sake of accuracy, it is possible to make a conservative

estimate in order to minimise the work necessary to perform measurements if data is missing. A maximum of 10% (mass-based) of the necessary data per bill of material may be based on a conservative estimate.

### Integrated manufacturing sites and plants

Integrated manufacturing sites and plants are defined as a physically connected arrangement of operating sites at the same location or describes the physical connection of *operating sites* across different locations by dedicated transport routes (e.g. pipelines but also regular consignments by ship, train or truck) without any supply to or from external parties. Third parties are also part of the integrated manufacturing sites or plants, provided that they are physically connected to the operating sites of the integrated site and are under the operational management of the company.

### Integrated production

Integrated production is a chemical, biological or physical manufacturing process that uses partially certified sustainable *biomass* or *recovered materials*. Material flows from sustainable materials and fossil-based raw materials are not separated from one other and can go through several process steps (Figure below).

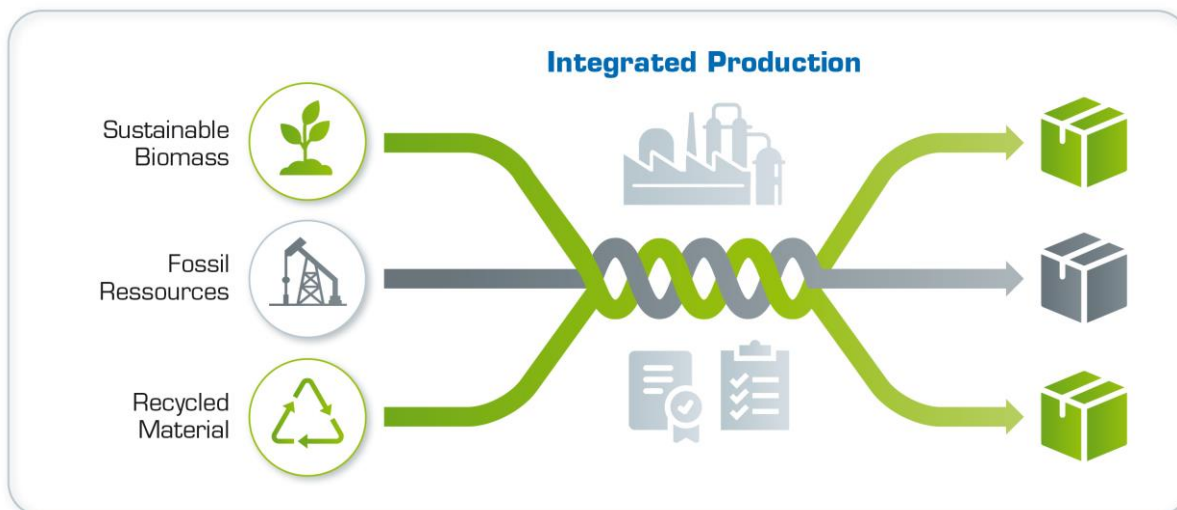


Figure 13: Diagram of integrated production. Incoming materials are not physically separated from each other within the operating site, but can be stored together. Sustainable properties are allocated on a mass balance basis through an account management system.

This is defined as a physically connected arrangement of *operating sites* at the same location or physically connected operating sites across different locations, e.g. through interconnected pipelines. The products manufactured as part of integrated production can be

certified on the basis of the mass balance. Recycled materials therefore become “circular mass-balanced products” and *biomass* becomes “biomass-balanced products”.

### Mass balance unit

The mass balance unit (MBU) is the standard unit for the mass balance system. The conversion of chemical substances to the MBU is based on the mass balance. In order to convert different chemical raw materials in such a way that they can be compared, the technical process of synthesis gas generation including the water gas shift reaction is used as a basis. For fossil-based raw materials and sustainable materials, the conversion rate is determined in MBUs based on the synthesis gas process. In the process, the quantity required for the production of synthesis gas is determined. This is standardised to a clearly defined product, e.g. methane. For fossil-based raw materials and sustainable materials, the conversion rate for the MBU may be determined using the net calorific value. The possible biomass is listed in [Annex 2a](#). Other raw materials can be recognised by the REDcert scheme on a case-by-case basis.

See also Figure 3 on page 15 and Figure 10 on page 38.

### Mineral raw materials

Mineral raw materials generally refer to inorganic salts and solids such as carbonates and silicates. Recycling processes aimed at saving mineral raw materials are recognised by the REDcert<sup>2</sup> scheme in cases of doubt on a case-by-case basis; individual specifications are published separately in the document “Specific requirements for recycling processes in the chemical industry”.

### Recycled material

Substances that have been processed from recovered (recycled) material. These are, for example, mechanically recycled plastic granulate or pyrolysis oils and synthesis gases.

### Recycled product

A recycled product from *dedicated production* consists partly or entirely (>99%) of certified sustainable recycled materials and is marketed as such.

## Recycled content

Proportion, by mass, of *recycled materials* in a product or packaging. Only pre-consumer and post-consumer materials may be considered as recycled content, consistent with the following use of the terms.

1. Pre-consumer material

Material diverted from the waste stream during a manufacturing process. Excluded is reutilisation of materials such as rework, regrind or scrap generated in a process and capable of being reclaimed within the same process that generated it.

2. Post-consumer material

Material generated by households or by commercial, industrial and institutional facilities in their role as end-users of the product which can no longer be used for its intended purpose. This includes returns of material from the distribution chain.

## Company

In this document, the term company describes an economically and legally independent organisational unit that produces and sells biomass-balanced chemical products or recovered or recycled waste materials.

## Bill of material

A bill of material is a plant-specific quantity specification of all input materials required for production as well as the quantities of the by-products and main products.

## Materiality

In terms of the limit on the materiality of data, information is material if the result of the measurement could be affected if the information is omitted, misstated or reported incorrectly. The limit value for materiality is defined as 5% in relation to the balanced percentage of sustainable materials in the certified product.

### **Certified product**

In the case of a certified product, certified sustainable materials have been verifiably used for its manufacture in the value chain. The respective percentage in the product does not necessarily have to be physically verifiable due to the possibility of attribution and fluctuations in *integrated production processes*, but is shown on average in the individually issued product certificate.

### **Recovered (reclaimed) material**

Material that would have otherwise been disposed of as waste or used for energy recovery, but has instead been collected and recovered (reclaimed) as a material input, in lieu of new primary material, for a recycling or a manufacturing process.

These are materials that have been obtained by processing wastes with fossil-based raw material components (mainly plastic waste). These materials can, for example, be processed into oils or synthesis gases by means of chemical processes such as pyrolysis or gasification. Recovered materials can also be reused by recycling them mechanically. Recycled materials in this case is both the waste fractions collected separately or sourced from a sorting facility, which are used to produce mechanically recycled products, and the products made from them.

### **Intermediate products**

Intermediate products are the result of the first or further processing steps and in turn serve as input materials for other products, but not the end product (see *Annex 2b*).

## Annex 2a) – Sustainable biomass and fossil-based raw materials

### Certified sustainable biomass (selection)

- Hydrogen (produced with renewable energy)
- Biomethane
- Bio-naphtha
- Biodiesel
- Vegetable oil
- Wood (air-dried)
- Fresh wood
- Palm oil
- Biobutanol
- Bioethanol
- Glycerine
- Biomethanol
- Biogenic production residues

### Fossil-based raw materials (selection):

- Natural gas
- Methane
- Butane mix
- *n*-butane
- Naphtha
- Crude oil
- Asphalt (HVR)
- Coal

### Certified sustainable recycled materials:

- Pyrolysis oil
- Synthesis gas
- Mechanically processed waste fractions
- Chemically recycled intermediate products

See also the REDcert<sup>2</sup> document "Specific requirements for recycling processes in the chemical industry".

## Annex 2b) – intermediate products

### Intermediate products (selection):

- Ethylene
- Butanol
- Methanol
- Glycerine (fossil)
- Acrylic acid
- Adipic acid
- Butadiene
- Butanediol
- Caprolactam
- Ethylene glycol
- Ethylene oxide
- 2-ethylhexanol
- Furandicarboxylic acid
- Polyamide
- Polystyrene
- Polyethylene
- Hexamethyldiamine
- Hydrogen
- Isoprenol
- Methanesulfonic acid
- Muconic acid
- Neopentylglycol
- 1,3-propanediol
- Propylene oxide
- Propylene glycol
- Sebacic acid
- Styrene
- Succinic acid
- Terephthalic acid
- Polypropylene
- Polyvinylchloride

## Annex 2c) – recognised certification schemes

Sustainable *biomass* that has been certified within the scope and version of a voluntary certification scheme recognised by the European Commission in accordance with Directive (EU) 2018/2001 can be used without restriction within the REDcert<sup>2</sup> scheme for the chemical industry. The same applies to sustainable biomass that does not originate from a scheme recognised by the European Commission as a voluntary certification scheme, but has at least a positive benchmark result by the *Sustainable Agriculture Initiative* (SAI) or is FSC or PEFC certified. For sustainable biomass from other sources, the provisions in section 5.11 apply.

The use of *recovered (recycled) materials* is only possible if they have been certified in accordance with this scheme document or a certification scheme recognised as “equivalent” by REDcert (see table).

*Certification schemes recognised by REDcert*

Certification scheme	Biomass	Recyclates	Intermediate products
RED II voluntary schemes <sup>1</sup>	✓	✗	✓
ISCC Plus	✓	✓	✓
RSB	✓	✓	✓
SAI-benchmarked	✓	✗	✗
FSC	✓	✗	✗
PEFC	✓	✗	✗
EuCertPlast <sup>2</sup>	✗	✓	✗

<sup>1</sup>Online: [https://energy.ec.europa.eu/topics/renewable-energy/bioenergy/voluntary-schemes\\_en](https://energy.ec.europa.eu/topics/renewable-energy/bioenergy/voluntary-schemes_en)

<sup>2</sup>Recognition applies to mechanically recycled materials.



## Annex 1 Application for registration of a certification body under the REDcert<sup>2</sup> certification scheme for the certification of sustainable material flows in the chemical industry

(The certification body sends the application electronically to REDcert. The certification body is also responsible for the content of the application and for reviewing this information.)

(1) Master data of the organisation	
<input type="checkbox"/> See application for registration of a certification body under the REDcert-EU certification scheme	
<b>Name and legal form of the organisation</b>	
<b>Name of the person responsible</b> (the person responsible has to be authorised to legally represent the certification body)	
<b>Name of the REDcert<sup>2</sup> contact</b> (The REDcert <sup>2</sup> contact person is responsible for communicating with REDcert and providing information externally/internally under the REDcert certification scheme.)	
<b>Address</b> (Street address, PO box)	
<b>Postal code, city</b>	
<b>Country</b>	
<b>Mailing address</b> (if different)	
<b>Postal code, city</b> (if different)	
<b>Country</b> (if different)	
<b>Tel. no.</b>	
<b>Fax no.</b>	
<b>E-mail</b>	
(2) Status and scope of recognition by the competent authority	
<input type="checkbox"/> See application for registration of a certification body under the REDcert-EU certification scheme	
<b>Certification body approved by the competent authority</b>	<input type="checkbox"/> Yes / <input type="checkbox"/> No (please check the item that applies)
<b>The registration number is:</b>	

<b>Is approval limited to individual countries or states?</b>	<input type="checkbox"/> Yes / <input type="checkbox"/> No (please check the item that apply; <u>if <b>Yes</b>, please explain</u> )
<b>Is approval limited to individual areas of application?</b>	<input type="checkbox"/> Yes / <input type="checkbox"/> No (please check the item that apply; <u>if <b>Yes</b>, please explain</u> )
<b>Is approval limited to individual types of biomass?</b>	<input type="checkbox"/> Yes / <input type="checkbox"/> No (please check the item that apply; <u>if <b>Yes</b>, please explain</u> )
<b>(3) QM system and documentation of the certification body</b>	
<input type="checkbox"/> <i>See application for registration of a certification body under the REDcert-EU certification scheme</i>	
<b>Description of the certification process</b> (schematic diagram of workflow)	(To be included as an annex)
<b>Description of the process for issuing certificates</b>	(To be included as an annex)
<b>List of auditors and people in the certification body who decide about certification including application for approval of an auditor (see respective annex)</b>	(To be included as an annex)
<b>Measures for transparency and prevention of misuse</b>	(To be included as an annex)
<b>Process for handling complaints and claims</b>	(To be included as an annex)
<b>Process for revoking and reinstating certificates</b>	(To be included as an annex)

Place and date:

Name and signature of the person responsible at the certification body:

## Annex 2 Application for registration of an auditor under the REDcert<sup>2</sup> certification scheme for the certification of sustainable material flows in the chemical industry

(The REDcert contact person of the respective certification body submits the application electronically to REDcert. The certification body is responsible for the content of the application and for reviewing this information.)

1. General information about the auditor			
<b>Name</b>			
<b>First name</b>			
<b>Form of address/title</b>		<input type="checkbox"/> Mr. <input type="checkbox"/> Mrs./Ms./Miss	
<b>Date of birth</b>			
<b>Scope of application:</b> <input type="checkbox"/> Conversion plant/integrated manufacturing sites and plants (upstream/downstream) <input type="checkbox"/> Trade in sustainable material flows			
2. Auditor's training and education			
Type of education (by school degree, chronologically)	Duration	Subject	Degree (diploma, certificate)
	from to		
	from to		
	from to		
	from to		
	from to		
3. Professional experience of the auditor			
Company	Duration (number of years)	Indus-tries/ma in area of activ-ity company activities	Position in the com-pany (including description of activity)

4. Relevant training of the auditor					
<input type="checkbox"/> <i>Mandatory 2-day basic training of the REDcert<sup>2</sup> scheme for the certification of sustainable material flows in the chemical industry (training certificate available)</i>					
Training and experience	When (Date of the training/seminar, etc.)	Comments (brief description of the experience)			
5. Practical experience of the auditor (description of the audits conducted)					
<b>All information is handled confidentially and is only used to check the experience as an auditor.</b> The auditor must furnish proof of at least 2 years of professional experience and 5 audits in the applicable area.					
Type of audits (e.g. REDcert, ISO, EMAS inspections, environmental reports)	Date of the audits	Duration (days)	Name of the audited company	Scope of the audit	Position (Lead/co-auditor, observer)
6. Confirmation by the certification body					
<b>The certification body hereby confirms that the data provided here by the auditor has been checked.</b>			<input type="checkbox"/> Yes / <input type="checkbox"/> No (please check the item that applies)		
<b>The certification body confirms that a contract with the auditor exists and that all proof of the skills and expertise of the auditor is kept in the office of the certification body.</b>			<input type="checkbox"/> Yes / <input type="checkbox"/> No (please check the item that applies)		
<b>Comment:</b> Please use only this template to apply for approval of REDcert <sup>2</sup> auditors for the certification of sustainable material flows in the chemical industry. Other templates will not be accepted by REDcert.					

### **Publication information**

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