

Proposed definitions for “Bio-Based” and “Recycled” fertilising products

Objectives and some key questions

Officially validated definitions are needed to provide a legally secure and value-chain recognised basis for a support or promotion of recycled and bio-based fertilisers, be it through public policies or public or private purchasing criteria. ESPP below proposes a possible draft legal text for such definitions in order to demonstrate that, despite some unavoidable complexity, this is feasible. We emphasise from input from our members and network, that there is **general agreement of stakeholders of the need to have definitions, for both “recycled” and “bio-based”, but strong concern that these must not accidentally exclude certain materials or result in unintended orientations, and therefore that there is need for structured consultation.** This proposal is therefore for demonstration purposes only.

- **The definitions of “bio-based –” and “recycled –” should be defined concurrently and in the same place** for nutrients and fertilising products. They are largely linked, but distinct. The term “recycled” is more widely used and understood. Some recycled nutrients are not bio-based (e.g. from batteries) and some bio-based nutrients are not recycled (e.g. clover grown to fix nitrogen). Definitions of “bio-based –” and “recycled –” should be developed and legally validated together for these products, in order to ensure market readability, operator understanding and regulatory coherence. Another word could be preferred to ‘recycled’, such as ‘circular’ or ‘secondary’
- **The definitions must cover “fertilisers”, “fertilising products” and “nutrients”.** The overall definition is the same, but the application is significantly different: bio-based or recycled nutrients can go to industrial non-fertiliser applications, non-“Fertiliser” products under the EU FPR should not be excluded (e.g. soil improvers ...). This results in some complexity, but we believe that this can be dealt with (see proposal below).
- **There should be appropriate, official, structured consultation** before adopting such definitions. The public consultations on the Call for Evidence Biotech II (now closed) and on the draft regulatory text of Biotech I (consultation now reopened until 5th August) are no adequate, especially as the currently open consultation concerns a text in which the words fertiliser, fertilising product and nutrient are totally absent. ESPP suggests that the definitions should be co-constructed with stakeholders and Member States, including through the EU Fertilisers Expert Group, Expert Group on Waste.
- **The definitions should not be applicable only to CE-Mark fertilising products.** One possible place to put these definitions is in the EU Fertilising Products Regulation 2009/1009 (FPR). The FPR has the mechanism to allow the Commission to add necessary detail by Delegated Amendment of Annex II (Labelling), to mandate CEN to develop standards for assessment, and the Fertiliser Expert Group provides an appropriate mechanism for consultation. However, the FPR at present only covers a very small part of the recycled fertiliser market (>90% of organic and organo-mineral fertilisers and soil improvers are today sold under National fertiliser regulations). The FPR Conformity Assessment process (and costs) are not adapted for many bio-based or recycled fertilising products produced locally. The FPR is nonetheless maybe the “logical” place to put these definitions: this is where operators would expect to find them, it ensures coherence with the vocabulary of the FPR, it ensures adaptation of the definitions to fertilising products. If definitions are included in the FPR, then they should be formulated to ensure transposability to other regulations, in particular National fertilisers regulations, but also industry standards, agri-food purchasing criteria, even other jurisdictions worldwide. This is already the case for e.g. the CMC12 “struvite” criteria of the FPR, which have become a reference text beyond CE-Mark products.
- **Need to carry through to implementation.** Defining legally robust and implementable wording (in e.g. subsidy or tax criteria, nutrient management plans, purchasing criteria ...) is complex, as demonstrated by the example text below. But the devil is in the detail, and without a detailed legal text, the general definitions do not really move things forward. This note therefore proposes possible texts for these definitions within the EU Fertilising Products Regulation (FPR). This proposal is for demonstration only. As indicated above ESPP considers that these definitions should be co-developed with stakeholders and Member States.

ESPP therefore suggests:

- **Add short general definitions to art. 2 “Definitions” of the FPR along with an explanatory “Recital”** (proposed texts below, par (A). Alternatively, these short general definitions could be directly included into the BioTech or the Circular Economy Act.
- **Enable appropriate consultation** of stakeholders, Member States and of the Fertilisers and the Waste Expert Groups.
- For nutrients, fertilisers and fertilising products, **definitions of both “bio-based” and “recycled” should be adopted concurrently**, to ensure coherence.
- **Delegate to the Commission to develop more precise definitions**, to include into the FPR Annex III Labelling, including implementation, validation processes, tolerances, after stakeholder, Member State and Expert Group consultation
- **These definitions should be transposable beyond CE-Mark fertilising products**, useable by Member States in national regulations and by other public or private operators. This should be enabled in wording and in the legal context in which they are inserted.

Context

At present there is no recognised or agreed definition of “bio-based” nor of “recycled” for nutrients, nor of “bio-based” nor of “recycled” for fertilisers. Without such definitions, any policy to promote or support bio-based or recycled nutrients or fertilisers would be on unsound foundations : it would be unclear which products would be eligible and which not. Policies could include inciting use or production of such products through the CAP, RED II, public procurement, tax differentials, national policies, Nitrates Directive “RENURE” exemptions, voluntary industry actions, promoting inclusion in food industry / supermarket criteria: but in all cases, definitions are important to ensure clarity and enable effective policy implementation..

There have been proposed various definitions by various research projects or other groups, including ESPP,: but the multiplication reduces the effectiveness. There is a need for a definition which is officially validated at the EU level.

Although the principles of CEN European Standard EN 16575 (August 2014) “Bio-based products: vocabulary” are applicable to nutrients, the methodology generally used to implement this, CEN/TR 16721, is based on radio-dating and is not applicable to nutrients: radio-dating will not identify bio-based nutrients from synthetic or mined fossil nutrients, because P and K in plants or animals may come from uptake of mineral fertilisers (directly or indirectly) or from mineral animal feed additives, and atmospheric N is ‘fixed’ into fertilisers both by plants and by chemical synthesis

Proposed text amendment to the FPR

The definitions below are proposed as possible text amendments to the FPR texts (left hand column of table) with explanation and justification for each point (right hand column of table). The proposed wording in this table is deliberately split into separate points to allow each to be discussed on its own. It is not a finished legal text and would need to be reassembled into coherent wording, which is left for Commission expertise. In substance, two general definitions are added to Article 2 of the FPR ('bio-based content' and 'recycled content') and implementation conditions are clarified in a proposed text to add to Annex III "Labelling". This second part is somewhat complex, but this is necessary to try to clarify what the general definitions mean in practice. The devil is in the detail, and without the text in Annex II we suggest that the general definitions do not alone move things forward.

Wherever possible, wording is based on existing texts (EN standards, other Regulation definitions, etc – in which case the origin is indicated).

Options where we propose different solutions to be discussed are in red.

Part (A) Short general definitions

*To add into the FPR art. 2 'Definitions' and Recitals. Or could be directly included in the Biotech or Circular Economy Acts.
These general definitions need clarification to be legally workable: could be done at a second stage by inclusion into FPR Annex III Labelling*

Proposed regulatory text	Justification and <i>options for discussion</i>
Definitions (26) 'bio-based content' means the part which is derived from biomass, that is material of biological origin excluding material embedded in geological formations and/or fossilised resources, and may have undergone physical, chemical, thermal or biological treatment".	<i>This is taken word-for-word from definitions 2.1 and 2.7 of CEN European Standard EN 16575 (August 2014) "Bio-based products: vocabulary", except that</i> <i>"thermal" is added to avoid ambiguity. This is coherent with EN 16785-1 (Bio-based products - Bio-based content - Part 1: Determination of the bio-based content using the radiocarbon analysis and elemental analysis), under which a plastic manufactured from CO₂ captured from organic waste incineration would be identified as "Bio-Based" (a plastic manufactured from CO₂ captured from a coal-burning plant would not),</i> <i>The word "part" is here used. We suggest that the detail concerning how you define a "part" and what it is a "part of" can be specified in Annex III Labelling:</i> <i>- as % (dry mass),</i> <i>- "part of" an EU fertilising product, of a fertiliser, of a component material, of content of a nutrient, of a micronutrient, or of organic carbon.</i> <i>NOTE: we suggest NOT to state that "all Organic Fertilisers" are bio-based because, this links the definition to the FPR PFC categories and may render problematic transposition to other jurisdictions (especially if people confuse with Certified Organic Farming!) and it is not true, as FPR organic fertilisers can contain peat (etc) which are not allowed under the EN 16575 definition (fossilised/geological).</i> <i>OPTION: Stakeholders have different positions as to whether peat and lignite should be considered "bio-based". If the definition indicated here were to be adopted, it would be important to explain in guidance (FAQ) that this differs from the FPR definition of PFC1(A).1 (Organic fertiliser) and PFC3(A)1 (Organic soil improver). These FPR definitions include peat, leonardite and lignite, whereas this EN 16785-1 definition excludes these fossilised/geological forms of organic carbon.</i>

'Definitions' (27)
'recycled' content means the part originating from recovery operations from any secondary material(s) or by-products, other than those from mining or fertiliser production, and which substitute a primary material.

OPTION: Some stakeholders prefer the words "circular" or "secondary", rather than "recycled", in particular if it includes from by-product, because the Waste Framework Directive limits both "recycling" and "recovery" to from waste (art. 3.15 and 3.17).

If this proposed wording is used, then we suggest that the definition of "secondary material" needs to be made clear, to be legally secure. This should be done at a second stage by inclusion into FPR Annex III Labelling. A wording proposal is included below for demonstration purposes.

As above, the detail concerning how you define a "part" and what it is a "part of" can be specified in Annex III Labelling.

The terms "recycling", "recovery" and "recovery operation" are defined in the Waste Framework Directive WFD (art. 3 Definitions, see below this table). The proposed wording aims

- by specifying "from any secondary materials", avoid limiting to "from waste" as in the WFD (allow from by-products, or non-wastes such as off-gases)

- to allow all forms of recycling, from technical recovery through to reuse, as in the WFD (points 17 and 16).

This reflects absence of stakeholder consensus to date as to what extent, if any, "recycling" should necessarily imply processing.

We cannot find any definition of "secondary material" in EU legislation, although the term is used in the CRM Act 2024/1252 and the term "Secondary raw material is used in the Taxonomy. We do not know what the "raw" adds, if anything ?

The best definition we found is in the Ecoinvent (Swiss NGO recognised as data source for LCAs) "Glossary", addressing only EN15804 (Environmental Product Declarations for Construction): "Secondary materials are materials recovered from previous use or from waste that substitute a primary material. They are inputs to the studied system. Secondary material inputs are assumed to be used primarily for their material properties and not for their energy content. Inventory indicator EN15804. Secondary materials are materials recovered from previous use or from waste that substitute a primary material" https://glossary.ecoinvent.org/elementary-exchanges/inventory-indicator-resource-use/secondary-materials-to-inventory-indicator-resource-use?utm_source=chatgpt.com

In the Taxonomy Delegated Regulation 2023/2486, footnote 130 (concerning "road furniture") states "For the purposes of the Delegated Act, 'secondary raw materials' means materials that have been prepared for re-use or recycled in accordance with Article 3 of the Waste Framework Directive and have ceased to be waste under Article 6 of that Directive."

OPTION: we propose to include "by-products" in that current definitions (e.g. Waste Framework Directive, Taxonomy, both cited above) tend to concern only from "wastes". The taxonomy Regulation 2020/852 specifically suggests that "secondary raw materials" do not cover byproducts (art. 13.1.a.i: "reducing the use of primary raw materials or increasing the use of by-products and secondary raw materials"). ESPP considers that on principle (and as in this art. 13 of the Taxonomy Regulation) recycling from by-products should be included. Also, this is important for coherence, because the same material from the same process can be "waste" in one Member State and "by-product" in another, and a "by-product" can become a waste by simply stating the "intention to discard" !

OPTION: The requirement to "substitute a primary material" can be considered to be the fundamental objective. It is coherent with the definition of "recovery" in the WFD art.3.15 which specifies "replacing other materials ..." and with the Ecoinvent definition of "secondary materials" (for construction). However, including this raises questions about how to confirm or certify what is an 'intent', and conflicts with the general FPR approach of regulating quality and safety but not use. It could pose future unintended or unforeseen limitations on some circular materials.

OPTION: It may be appropriate to specify that 'recycled' does not include recovery from mining or fertiliser production residues, in order to avoid classification as 'recycled' of fertilisers produced from e.g. phosphate rock mine tailings (lower grade phosphate rock, considered of inadequate quality for industrial processing in the past) or other cases of what is effectively upgrading or reprocessing of fertiliser production discards.

Recital (23) This Regulation should include definitions of “recycled –“ and of “bio-based –“ as applicable to fertilising products, fertilisers and nutrients, specifications as to how these terms should be used in labelling and on how they are measured and certified. This should ensure coherent information of downstream users; it should enable operators to use these terms appropriately on their products, to so develop markets and added value; it should prevent abusive use of these terms or of confusingly similar terms or symbols (such as recovered or biological). Clear definitions of these terms are necessary to enable implementation of public policies to support recycled or bio-based fertilising products, or prioritisation of such products in public or private procurement. The definitions and labelling specifications should be applicable to CE-mark fertilising products and could also provide a basis potentially useable by relevant authorities for national fertilisers, by private operators or by other jurisdictions.

This proposed Recital explains why the definitions are included in the FPR and the scope of their application.

Wording to adjust if “secondary” or “circular” are substituted for “recycled”

Part (B) Detailed specification text

Propose to add to FPR Annex III ‘Labelling’, Part 1.

The proposed text below is temporarily split into disconnected parts, in order to enable discussion of each point proposed. After deciding which points should or should not be include, then the text will need to be re-assembled into a legally coherent wording. We leave this for COM expertise to address.

Annex III, Part 1 “General labelling Requirements”, as a one new point 12

This localisation in the FPR makes it applicable to all FPR products (not only FPR “Fertilisers” but also soil improvers, growing media ...). This is simpler than trying to address each CMC one-by-one. It avoids questions when adding future CMCs. This also corresponds to the aim to have a definition which is transposable to other contexts (National fertilisers regulations, purchasing criteria ...) which may not have a CMC-PFC based system, or may have different CMCs.

The words ‘bio-based’ or ‘recycled’ may only be used according to the definitions in art. 2 and under the following conditions:

There is no reason to cover nutrients from bio-based streams (primary or recycling) and exclude nutrients recovered from industrial wastes (spent acids, batteries, fire extinguishers ...).

It makes sense to add both “bio-based” and “recycled” to the FPR together and at the same time, because they are largely linked, but distinct. Both should be addressed to improve operator understanding and avoid future inconsistencies.

Such non bio-based but recycled fertilisers may be outside the scope of the Biotech Act, which may pose a procedural issue (we leave this for COM expertise to address). This could be resolved by including instead in the Circular Economy Act or by including into the Biotech Act a wording enabling the Commission to modify FPR Annex II appropriately (need to check if the proposed additional new point is authorised by the delegation limitations of FPR arts. 42 and 43 – we leave this for COM expertise to address).

Clarification of definition of “bio-based content”: All content derived from urban wastewater or from biowastes, or from food and crop wastes and waste waters which is mainly organic is considered “bio-based”.	<i>This should perhaps be stated explicitly to avoid ambiguity because such wastes contain both bio-origin nutrients but also some non bio-origin phosphorus. For example: domestic sewage contains phosphorus from urine and faeces but also from cleaning products, mineral phosphate food additives. The term “urban wastewater” is defined in the Urban Waste Water Treatment Directive and excludes wastewater solely from industrial or commercial activities.</i>
Clarification of the meaning of “secondary material” as used in the definition of “recycled content”: Secondary material means any substance, mixture or material which originates from: (a) is waste within the meaning of Directive 2008/98/EC, (b) has ceased to be waste in one or more Member States by virtue of the national measures transposing Article 6 of Directive 2008/98/EC, (c) is formed from precursors which have ceased to be waste in one or more Member States by virtue of the national measures transposing Article 6 of Directive 2008/98/EC, or mixtures containing such substances (d) is a by-product within the meaning of Directive 2008/98/EC, (e) is an animal by-product or derived product within the meaning of Regulation (EC) No 1069/2009,	<i>To ensure regulatory coherence, the wording (a) – (e) is taken verbatim from the FPR CMC1 point 1.</i> <i>The words “originates from” enable to include e.g. sulphur recovered from biogas, which might otherwise be excluded in that the biogas is a product (note: only if the biogas is produced from waste).</i>
(f) materials or excrements from animals or humans, which are not animal by-products or derived products within the meaning of Regulation (EC) No 1069/2009, (g) urban and non-urban wastewater, (h) offgas.	<i>Human and animal excrements or materials should be explicitly cited in order to avoid current ‘accidental’ exclusions of waste secondary materials which can be used in fertilisers. These exclusions, be they in regulatory ‘scope or in ‘definitions’, can result in regulatory vacuums and de facto regulatory obstacles: e.g.:</i> <i>- “manure” under the Animal By-Product Regulation excludes fish excrements,</i> <i>- separately collected human urine may be considered to be not wastewater,</i> <i>- human hair is not covered by the Animal By-Product Regulation,</i> <i>- urban wastewater is excluded from the Waste Framework Directive</i> <i>- offgases are not ABP, may not be waste</i>
For the above: the ‘part’ refers to - % (dry mass) - of an EU fertilising product, of a component material, of a nutrient, of a micronutrient, or of organic carbon	

If: for or one or more declared nutrients or micronutrients in fertilisers (PFC 1A 1B 1C)	OPTION – <i>It is debatable whether these four bullet points are necessary. They aim to clarify to what the terms bio-based and recycled are applicable.</i> <i>It could be considered that including recycled carbon in an Inorganic Fertiliser, where it has no function, should not count. On the other hand, the organic carbon will in any case be returned to soil.</i> <i>In particular, it is debatable whether application should be limited, for nutrients only (not for organic carbon) to fertilisers.</i> <i>If the product is not a “fertiliser” then it could be argued that the nutrient may not be functionally valorised (not effectively replacing use of virgin nutrient) – but on the other hand it is “declared”, which means the farmer should be accounting it.</i> <i>Also, in terms of communication, does it make sense to say “Recycled Phosphorus” on a soil improver containing only 0.5% P₂O₅ (the level above which phosphorus must be declared in soil improver according to FPR Annex III) ?</i> <i>On the other hand, why not recycle nutrients to soil improvers: if the nutrient in question is declared, then the farmer should be accounting it, and so potentially substituting primary nutrients.</i>
and/or for organic carbon in organic fertilisers (PFC 1A), organo-mineral fertilisers (PFC 1B), organic soil improvers (PFC 3A) or growing media (PFC4)	<i>These are the PFCs in which the organic carbon is considered to have an agronomic value, not just to be there by accident.</i>
for blends of the above	<i>We don’t fully understand blends !... but it seems logical ? We leave this for COM expertise to address.</i>
and/or for other fertilising product component materials which do not have a nutrient function.	<i>For example, processing additives could be bio-based or recycled, as could polymer mulching films.</i>
The above applies to the product itself, not to packaging.	<i>There is already elsewhere legislation on packaging labelling and the recycled content of the packaging is not the object of this proposal.</i>

The words “Bio-based” and/or “Recycled” must not be used alone but must always include specification of what is concerned: “Bio-based XX” and/or “Recycled XX”. Here, XX may be “Fertilising product” or PFC name “Fertiliser”, component material(s), nutrient(s), micronutrient(s) or carbon where organic carbon is relevant as specified above. Where XX is “Fertiliser”, then at least one declared nutrient for macronutrient fertilisers or at least one declared micronutrient for micronutrient fertilisers (as defined in Annex I PFCs) must be at least partly biobased or recycled If XX is not 100% (DM) bio-based/recycled, then the terms “Partly bio-based XX” and/or “Partly recycled XX” may be used and it must be specified for at least one relevant component material, nutrient, micronutrient or carbon the % which is bio-based/recycled. The biobased and/or recycled % content can be specified for more than one aspect, including if 100%.	<i>It is important to allow the wordings “Bio-based fertiliser” and “Recycled fertiliser”, despite the term “fertilising product” being more coherent in the FPR context, in order to facilitate transfer to National regulations, other jurisdictions, purchasing criteria, etc</i> <i>This aims to avoid abusive labelling as “bio-based fertiliser” or “recycled phosphorus” of a product with only a very low bio-based or recycled content.</i> <i>It also aims to avoid labelling as a “Recycled Fertiliser” a product in which only a filler and an additive are recycled.</i> <i>The obligation to declare the bio-based / recycled % will enable market competition to push manufacturers towards higher biobased or recycled contents and enable purchasers to make fully informed choices.</i> <i>For example, three possible wordings could thus be, for the same product (a macronutrient NPK fertiliser containing 100% recycled P, 30% recycled N, no other recycled elements, resulting in 63% total recycled content dry mass):</i> <i>“Partly Recycled Fertiliser: 100% recycled phosphorus, 30% recycled nitrogen”</i> <i>“63% Recycled Fertilising Product”</i> <i>“Recycled Phosphorus (100%), 30% recycled nitrogen”</i> <i>Tolerance or range of % to be specified in an annex.</i>
The terms “bio-based” and “recycled” as specified above may be used independently and additionally where appropriate.	<i>A fertilising product, or a nutrient, etc. may be both recycled and bio-based, or possibly 100% recycled but only partly bio-based (e.g phosphorus from sewage sludge incineration ash plus phosphorus from battery recycling)</i>

For each concerned nutrient the bio-based and/or recycled content are calculated by a harmonised material balance method considering only the element in question (N, P, K, ...) and not oxygen or hydrogen bound to these elements.	<i>EN 16785-1 (radiocarbon analysis) is not applicable for nutrients: N fixed from air by a leguminous plant with have a $^{14}\text{N}/^{15}\text{N}$ ratio indistinguishable from N fixed from air by Haber-Bosch (see discussion in ESPP eNews n°11 (pending). P taken up by a plant from mineral fertiliser will not be distinguishable from P in mineral fertiliser). However, radio isotope analysis is applicable for organic carbon (all recycled organic carbon can be assumed to be bio-based).</i>
For organic carbon the bio-based and/or recycled content are calculated by a harmonised material balance method, or by a radiocarbon analysis method, considering only the element C in organic form, not oxygen or hydrogen bound to the C.	<i>EN 16785-2 (Bio-based products - Bio-based content - Part 2: Determination of the bio-based content using the material balance method) is also not applicable. This standard states “Element(s) other than C, H, O and N are not considered in this European Standard” (under point 6 “Rules for allocation of elements”). In this standard, the molecules of H, O and N are considered to ‘come with’ the carbon and follow the carbon in the mass balance calculation: “According to the current state of the art, it is not possible by isotopic measurements to establish a distinction between elements originating from biomass and elements originating from non-biomass, for elements such as oxygen, hydrogen or nitrogen”. EN 16758-2 is coherent for plastics, where O, H, N molecules are part of the polymer, so including them means that the mass balance corresponds to the mass of polymer. For fertilisers, however, this is not appropriate. N obviously needs to be considered separately, not just as “coming stuck to carbon”. And for other nutrients, the nutrient content is declared and is central.</i> <i>The radiocarbon method should be an option. If the material balance is already done for “recycled” then it should be allowed to use it for “bio-based”. Radiocarbon is expensive and material balance may be more economically appropriate.</i> <i>We propose therefore to use the words “method based on material balance” as per chapter 5 of CEN/TR 16721 (Bio-based products - Overview of methods to determine the biobased content).</i> <i>The material balance means that if ammonia salts are recovered from digestate, the N will be identified as bio-based and recycled (by mass balance method). However, if ammonia is produced by using biogas (bio-based methane from an anaerobic digester treating organic wastes) to ‘fix’ atmospheric nitrogen, then the ammonia contains 3H from the biomethane and N from the air. This would not be identified as recycled or bio-based N. It would be “green N” as is ammonia fixed using solar or wind electricity. The definition of ‘Green N’ is not addressed by this proposal.</i>
In line with the Green Labelling Directive 2028/825, the label may not include any wording or symbol which refers to or suggests bio-based, bio-derived, recycled, secondary, circular, recovered or similar, other than to bring additional information or illustration concerning how the points above are fulfilled.	<i>Avoid disloyal use of wordings such as “Recovered fertiliser” or “Secondary fertiliser” or “Biological nutrient” without respect of the defined criteria.</i> <i>Labelling should not prevent a company whose produce is appropriately labelled “Recycled phosphorus” from explaining how and from where it is recycled. Making such explanation of source obligatory is a possible option, for all or some bio-based or recycled inputs, but we have not addressed this question.</i>

For reference: definitions from the Waste Framework Directive (latest consolidated version = 16/10/2025)

Art. 3 'Definitions'

13. 're-use' means any operation by which products or components that are not waste are used again for the same purpose for which they were conceived;
14. 'treatment' means recovery or disposal operations, including preparation prior to recovery or disposal;
15. 'recovery' means any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy. Annex II sets out a non-exhaustive list of recovery operations;
- 15a. 'material recovery' means any recovery operation, other than energy recovery and the reprocessing into materials that are to be used as fuels or other means to generate energy. It includes, inter alia, preparing for re-use, recycling and backfilling;
16. 'preparing for re-use' means checking, cleaning or repairing recovery operations, by which products or components of products that have become waste are prepared so that they can be re-used without any other pre-processing;
17. 'recycling' means any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations

For reference: EN 16575 and EN 16848 texts

EN 16575 Bio-based products – vocabulary

Scope:

- Bio-based products other than food, feed and biomass for energy applications.

Definitions:

- Bio-based = derived from biomass, the biomass can have undergone physical, chemical or biological treatment(s)
- Biomass = material of biological origin excluding material embedded in geological formations and/or fossilized
- Product = substance, mixture of substances, material or object resulting from a production process
- Bio-based product = product wholly or partly derived from biomass
- Bio-based carbon content = fraction of carbon derived from biomass in a product
- Bio-based content = fraction of a product that is derived from biomass
- Waste = any substance, mixture of substances, material or object which the holder discards or intends or is required to discard
- Sustainable development = development that meets the needs of the present without compromising the ability of future generations to meet their own needs

EN 16848 Bio-based products – Requirements for business to business communication of characteristics using a data sheet

- Requirements for a declaration on bio-based products
- Product name and supplier name
- Bio-based carbon content and bio-based content
- Intended use, biomass type (plant, animal, algae, ...) and origin (geographical)
- Biomass: information on aspects of sustainability (of that biomass)
- End of life options (re-use, recycling, (energy) recovery, biodegradability, disposal)
- (If) the bio-based carbon content and the bio-based content of biomass are each equal to 100% ... it is not necessary to determine these contents by analytical methods.