



Executive Summary

In February 2026, the European Union Commission [adopted a regulation](#) setting out methodologies for Carbon Removals and Carbon Farming (CRCF). The CRCF methodologies are *voluntary* certifications for organizations committing to certain activities that permanently remove carbon dioxide from the atmosphere.

The new rules cover three types of permanent carbon removal activities:

- Direct air capture with carbon storage ('DACCS')
- Biogenic emissions capture with carbon storage ('BioCCS')
- Biochar carbon removal ('BCR')

The methodologies also define what counts as a metric ton of removal, how permanence must be ensured, and how the key risks (e.g. leakages and liabilities) are addressed.

The regulation now goes to the European Parliament and the Council of the EU for a two-month scrutiny period (which could be extended).

Findings and Analysis

In the regulation, “biochar carbon removal activity” or ‘BCR activity’ is officially defined as “an activity resulting in the production and permanent storage of biochar by its application to soils or by its incorporation into materials.”

Article 4 of the regulation lays out the certification methodology for BCR:

(note: Article 4 refers the reader to several sections of the Annex of the regulation; those sections have been copied here in lieu of reference to the Annex)

A BCR activity shall comply with the following requirements:

- A BCR activity shall consist of biochar production at one or more biochar production facilities that are owned by the same legal entity and that apply the same biochar production technology as each other. Biochar produced at different locations may never be assigned to the same production batch (see Section 2.2.5.1) even if the feedstock and production conditions are similar. Biochar from a single activity may be applied in soils or incorporated in products at several sites.
- Biochar may be applied to soils to provide permanent carbon storage. Operators of activities where biochar is applied to soils shall ensure that there is no significant risk that the net climate benefit of the BCR is offset by heat absorption due to albedo decreases.
 - Biochar applied in agricultural and forest soils
 - Biochar application shall be eligible for certification if it has been, either directly without first intermixing it with any other product, or after intermixing with a matrix consisting of soil or one or more additional soil amendment products in compliance with Article 5 of Regulation (EU) 2019/1009 of the European Parliament and of the Council¹, or after feeding to animals and recovery as manure:
 - applied to agricultural soils;
 - applied to forest soils;
 - applied to soil in greenhouses.



- Total application of biochar to agricultural and forest soils shall be limited to no more than 50 tonnes per hectare cumulatively over time [t/ha], including any forms of biochar application whether or not they are certified and including applications that were made prior to the adoption of this methodology. Operators shall maintain geographically specific application records to enable cumulative application to be monitored.
 - Biochar applied in soils other than agricultural and forest soils
 - Biochar application shall be eligible for certification if it has been, either directly without first intermixing it with any other product, or after intermixing with a matrix consisting of soil or other appropriate materials:
 - used in landscaping, for daily cover at landfill sites or for filling holes, including disused mines and oil wells;
 - (ii) applied to urban soils, including growing media used in flowerbeds or for urban tree planting and in public parks and public or private gardens.
- Operators of activities that produce biochar that is used for landscaping, landfill or hole filling shall intermix the biochar with at least one other material prior to application and shall ensure that the intermixture cannot self-sustain combustion.
- Only BCR activities that incorporate biochar in cement, concrete or asphalt shall be eligible for certification
- The duration of any activity period for a BCR activity shall not exceed 5 years. At the end of every activity period operators may start a new activity period by submitting a new activity plan.
- The monitoring period for BCR activities shall be:
 - for activities that use biochar by application to soil, where application to soil is directly overseen by the certification body the period up to application, otherwise the period up to one year after the end of the certification period during which the biochar is reported to have been applied to the soil;
 - for activities that use biochar by incorporation in products, the period up
- The certification period for a BCR activity shall not exceed one year. Carbon removals and associated emissions shall be recorded in the certification period in which the CO₂ is permanently stored by application of biochar to soils or incorporation of biochar in products
- BCR activities shall consider GHG sources and sinks included in Table 6.

Table 6: Sinks and sources that shall be included for a BCR activity

Phase of the operation	Emission sources/sinks	Gases included
Biochar Production	Biochar production facility: Equipment used to produce biochar	Greenhouse Gases
	Biochar production facility: Any biochar processing equipment that is used to treat the biochar prior to its shipping for application or incorporation.	Greenhouse Gases
	Biochar production facility: Any associated energy generation equipment that is geographically contiguous with the facility.	Greenhouse Gases
	Biochar production facility: Any treatment equipment for processing wastes or byproducts of the biochar production process.	Greenhouse Gases



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	Biomass and biomass fuel supply emissions: Production, collection and transportation of biomass and biomass fuel used by the biochar production facility.	Greenhouse Gases
	Input emissions: Production and supply of inputs used by the biochar production facility	Greenhouse Gases
	Waste treatment: Processing and treatment of any wastes (including wastewater and exhaust gases) generated by the biochar production facility.	Greenhouse Gases
	Capital emissions: Emissions associated with the construction and installation of the biochar production facility.	Greenhouse Gases
Transport of Biochar	Transportation: Fuel combustion and electricity consumption at land transportation (e.g. tank trucks, rails), maritime transportation (e.g. sea tanker) and other vehicles	Greenhouse Gases
Application to soils or incorporation in products	Quantity of CO ₂ permanently stored in the form of biochar	CO ₂ only
	Application/incorporation site: Any energy consumption and/or generation associated with the process of application or incorporation.	Greenhouse Gases

- A standardized baseline set to 0 tCO₂/year shall apply for BCR activities. Where the activity is financed through a combination of public and private funding, in order to document that there is no overcompensation of costs, when submitting the activity plan to the certification scheme operators shall indicate any form of public financing received or applied for with regard to the activity. This information shall be included in the certificate of compliance.
- The operator shall calculate the total carbon removals (CR_{total}) in accordance with equation 44:



$$CR_{total} = -3.664 * F_{perm} * C_{org} * Q_{biochar} \quad [44]$$

where:

F_{perm} = permanence fraction of the biochar calculated following the rules in Section 2.2.7.1, as a percentage;

C_{org} = the organic carbon content of the biochar, C_{org} , which shall be established by laboratory analysis as the ratio of the mass of organic carbon in the biochar to the total mass of the biochar. Certification schemes may identify specific cases in which operators may treat the inorganic carbon content of the biochar as zero without requiring it to be directly assessed;

$Q_{biochar}$ = the mass of biochar applied or incorporated during the certification period, in tonnes on a dry matter basis. The mass of biochar shall exclude any fraction from non-biogenic material also processed in the biochar production process. If the biochar feedstock may be expected to contain a fraction of non-biogenic carbon greater than 2 % of the total carbon feedstock by mass, the biogenic carbon fraction in the biochar product shall be identified by carbon 14 (^{14}C) testing;

3.664 the mass ratio of a CO_2 molecule to a carbon atom.

- The greenhouse gases associated shall be calculated according to the equation 45:

$$GHG_{associated} = GHG_{biochar} + GHG_{transport} + GHG_{use} \quad [45]$$

where:

$GHG_{biochar}$ = GHG emissions associated with the production of biochar, calculated following the rules in Section 2.2.5.4;

$GHG_{transport}$ = GHG emissions associated with biochar transport from the production facility to the point of application or incorporation, calculated following the rules in Section 2.2.6.1;

GHG_{use} = GHG emissions associated with the application or incorporation of biochar, calculated following the rules in Section 2.2.7.2.

- The H/Corg ratio of each batch of biochar shall be measured. No carbon removal units may be issued in respect of any batch of biochar that is measured to have an H/Corg ratio greater than 0.7.
- The use of produced biochar shall be monitored up to the point of application to soil or incorporation in a product, and carbon removal units shall be issued in relation to the quantity of biochar applied or



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incorporated. Biochar from certified activities shall be segregated in the supply chain from any biochar produced by non-certified activities until reaching the point of application or incorporation. Certified and non-certified biochar may be mixed at that point and then applied or incorporated. If biochar from multiple production batches produced by certified activities is mixed together prior to application or incorporation it shall be well mixed, and the mixed material shall be treated as consisting of fractions of the original batches in proportion to the quantities originally mixed. A segregated supply for each production batch is mandatory unless production batches can be demonstrated to be well mixed. The chain of custody shall in particular ensure that biochar is only used in ways that are appropriate to its production and characteristics.

- Where biochar is applied to soils and this application is not directly overseen by a representative of a certification body, operators shall grant access to the location of application to certification schemes, certification bodies or relevant competent national authorities upon request, during the monitoring period, to allow the soil to be tested in order to confirm that biochar has been applied. After this point the application of the biochar shall be treated as having been demonstrated.
- Operators are not subject to further monitoring requirements after the end of the monitoring period as the risk of reversals is characterised through the assessment of the permanence fraction of the biochar and it is not practically possible to directly identify reversals after the point of application or incorporation.
- Operators of BCR activities where biochar is applied to agricultural, forest or urban soils shall demonstrate that:
 - the biochar complies with the limit values on heavy metals and organic contaminants stated in Section 4.4.1;
 - the biochar meets all requirements relating to pyrolysis and gasification materials in Regulation (EU) 2019/1009, including the limitations on permissible input materials.
- Operators of BCR activities where biochar is being applied to agricultural and forest soils shall demonstrate that the local context has been considered and that it is reasonable to expect no overall negative effect on biomass production, site condition or soil health and no significant reductions in the storage of other soil organic carbon through positive priming effects from the application of biochar. Where significant loss of other soil organic carbon or deleterious impacts on agricultural productivity, on biodiversity, on ecosystems receiving the biochar and the ones located downstream in the watershed, soil health, or on any other environmental aspects are considered likely by the certification body, no carbon removal units shall be issued in relation to that applied quantity. Certification schemes may provide additional best practice guidance or soil health monitoring guidance on biochar application to soils.
- To promote scientific advancement and facilitate collective progress in the field of biochar carbon removals, operators shall share relevant data and information that is not commercially sensitive upon request by certification schemes, competent national authorities or the European Commission, and without creating undue administrative burden for farmers. Certification schemes shall enable knowledge sharing between operators by providing platforms to allow the dissemination of data gathered in the course of any post-application monitoring activities undertaken by operators.
- Any production batch of biochar in which the produced biochar is expected to account for 50 % or more of the total energy outputs in the co-products of the biochar production facility (see equation [47], Section 2.2.5.4) shall only be produced from waste or residual feedstocks, EN 73 EN or from biofuel,



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bioliquid or biomass fuel produced from waste or residual feedstocks, as defined in Article 2, points (23) ('waste') and (43) ('residue'), of Directive (EU) 2018/2001.

A BCR activity shall ensure that the biochar production facility and the storage of the biochar are located in the Union.