

POSITION PAPER

Technology Neutrality in the EU ETS: Biochar Carbon Removal Belongs in the Removals Mechanism

Statement by German Biochar e.V. on the revision of the EU Emissions Trading System – COM (2026) 616, amending Directive 2003/87/EC · September 2026

German Biochar explicitly welcomes the fact that, with its proposal, the Commission is for the first time specifically making EU ETS funds available for the procurement of permanent CO₂ removals. This is a very important step towards an emissions trading system that takes climate neutrality seriously. The corrections set out below concern the design of the proposal, not its overall direction.

Our demand:

- Full technology neutrality: all three removal pathways certified as permanent under the CRCF – Direct Air Capture with Carbon Storage (DACCS), Biogenic Carbon Capture and Storage (BioCCS), and Biochar Carbon Removal (BCR) – must be admitted to the EU ETS on an equal footing.

Rationale:

- The exclusion of BCR cannot be justified on either scientific or regulatory grounds and creates unnecessary fragmentation between the CRCF and the EU ETS.
 - Biochar application in soil is regulated by EU Fertilizing Products Regulation 2019/1009
 - Biochar product safety, e.g. for use in construction materials, is currently standardized by the private industry standard EBC and, from 2027 on, by the forthcoming DIN standard DIN 4883-1.
 - Carbon removal accounting is harmonized and widely recognized through the CRCF.
- BCR is already market-ready today (TRL 8–9) and accounts for over 80% of the permanent removal certificates traded on the voluntary market – an immediately available lever for reaching targets.
- Excluding BCR unnecessarily raises the cost of removal procurement: biochar can currently store one ton of CO₂ permanently for around 150–200 €. The exclusion therefore burdens both the competitiveness of industry and – via the pass-through of CO₂ costs – households across Europe.
- Only a technology-open approach ensures all Member States fair access to CDR, regardless of their geological capacity for storing liquid CO₂.
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On the following pages we set out this argument in detail.

1. A portfolio approach for cost efficiency, resilience and consumer protection

Europe's transition to climate neutrality requires a broad portfolio of permanent carbon removal solutions. Restricting ETS integration to CCS-based pathways – DACCS and BioCCS – unnecessarily narrows this portfolio and significantly increases the cost of reaching targets.

The EU ETS serves cost-efficient emission reduction, not the pre-selection of individual technologies. Obligated companies pay per ton of CO_{2e} removed. If they are denied access to the cheapest available permanent removal technology, they will pay more than necessary. These additional costs do not disappear – like CO₂ costs in general, they are passed on to a significant extent to end customers. Excluding BCR therefore means not only an unnecessary burden on the competitiveness of European industry, but also an avoidable additional financial burden on society – and thus on voters – who would have to bear higher energy and product prices for a more expensive, but not more climate-effective, removal architecture. This is politically difficult to convey and economically unjustifiable.

A diversified removal portfolio strengthens competition, ensures cost-efficient compliance and provides robust protection against the failure of individual suppliers. BCR complements DACCS and BioCCS rather than competing with them – the pathways differ in feedstock base, infrastructure requirements, geographic availability and application profile. Furthermore, BCR and BioCCS can be technically combined with one another. Only the inclusion of multiple certified pathways secures long-term climate targets while preserving industrial competitiveness and a climate policy that remains affordable for the economy and society.

2. BCR is already deployable today – and delivers immediately

Biochar Carbon Removal is already operated at commercial scale in Europe and worldwide, while other removal pathways still depend on future infrastructure build-out. BCR plants are already producing certified removal credits today using established MRV methods.

With a technology readiness level (TRL) of 8–9 and a share of over 80% of the permanent removal certificates realized on the voluntary carbon market, BCR is among the most mature technologies available. Its inclusion in the ETS will unlock immediate removal capacity and allow Europe to integrate permanent removals into compliance markets without waiting for future build-out stages. Combined with its cost efficiency, BCR can help secure the planned removal volume early and reduce the risk that insufficient auction revenues undermine the entire mechanism.

Policymakers looking for solutions that actually deliver in the decisive decade ahead must make deployment readiness and scalability central selection criteria. BCR meets both requirements – today, not only in the 2030s.

3. A coherent legal framework must be ensured

The CRCF establishes the EU-wide certification framework for permanent carbon removals. Delegated Regulation (EU) 2026/285 has adopted methodologies for three permanent removal activities: DACCS, BioCCS and BCR. The EU ETS relies on precisely this certification framework for quality assurance – it must therefore also apply it consistently.

If only two of the three methods already recognised at EU level were transferred into the ETS, this would create unnecessary and avoidable fragmentation of the legal framework, undermining both investment certainty and regulatory predictability. This is incompatible with the goal of coherent European climate law.

4. “Made in Europe”: BCR is industrial policy, not a niche

The Commission itself positions carbon removals and CO₂ farming as building blocks of European competitiveness, bio-based value chains and resource independence. Pyrolysis plants are integrated biorefineries within the definition of the EU Bioeconomy Strategy. Biochar and BCR are a European industrial and bioeconomy topic – not a climate policy niche. The manufacturers of the world's most advanced pyrolysis technology and software companies in the BCR field are headquartered in Europe. This technological lead should be defended and expanded.

We call on the Commission, Council and Parliament to actively support European technology leadership in this field, rather than holding it back through incomplete legislation.

5. Industrial front-runners deserve a technology-neutral ETS

Europe's industrial transformation depends on companies that have already invested today in low-emission production, circular value chains, electrification and the procurement of clean energy. These front-runners made long-term capital decisions based on a credible, predictable and ambitious EU ETS. Weakening this framework does not solve Europe's competitiveness problem – it undermines investment certainty and penalizes those who acted early.

The right response is to preserve the ETS price signal, strengthen the CBAM, and use the ETS design to expand credible decarbonization options for hard-to-abate emissions. This is exactly where BCR comes in: its inclusion alongside other CRCF-certified permanent removals broadens the portfolio of available compliance solutions, reduces artificial scarcity, improves cost efficiency and supports industrial front-runners with residual emissions.

6. An opportunity for industry and rural areas

The agricultural sector remains difficult from a climate policy perspective because its potential for decarbonization is limited. According to the Commission, non-CO₂ emissions from agriculture account for around 11% of total EU greenhouse gas emissions; the EEA expects that existing and additional measures will reduce agricultural emissions by only 10–13% by 2030 compared with 2005. Within effort sharing, agriculture accounts for 18% of ESR emissions. Farmers are therefore a key stakeholder group for the argument that residual emissions require complementary removals.

At the same time, agricultural soils are a suitable storage site for biochar. The use of biochar offers additional co-benefits, such as reducing agricultural emissions of nitrous oxide, methane and ammonia. BCR links industrial removal capacity with rural value creation – an opportunity that a purely geology-based ETS architecture would leave unused.

7. Direct access to CDR for all Member States – not only those with the “right geology”

Restricting CDR in the EU ETS to geological CO₂ storage forces numerous Member States without suitable geology – including Finland, Estonia, Luxembourg, Belgium, Austria, Slovenia and also Germany – into costly CO₂ exports to Norway or Denmark, making them dependent on those countries' infrastructure and willingness to cooperate.

BCR requires no geological storage capacity whatsoever: biochar can be produced decentrally and safely stores carbon as a solid material – independent of geological conditions. Excluding BCR and restricting eligibility to CCS as the only recognized removal pathway unfairly disadvantages all those Member States that do not have the “right geology”. BCR enables fair participation in achieving the EU's climate targets and must not be denied to precisely these countries.

8. Permanence and reversal risk – the scientific evidence is clear

The scientific basis for the permanence of carbon storage in biochar is well established. An extensive body of peer-reviewed studies shows that a large proportion of the carbon bound in biochar remains stable for millennia, provided it is produced to recognized standards and applied under suitable conditions. The Commission's own impact assessment confirms that biochar stores carbon as a stable, inert solid material for centuries to millennia, and that the risk of reversal for the stable carbon fraction is virtually excluded. Without the risk of a loss of removals, there is no liability issue.

It was precisely this scientific evidence that formed the basis for the Commission's decision to adopt certification methodologies for BCR under the CRCF. The permanence requirements for permanent removals are therefore already anchored in the EU regulatory framework – there is no scientific justification for excluding BCR from the EU ETS.