CARBON MARKET WATCH

How to make carbon removals work for climate action in the EU

Six priorities to improve the European Commission's proposal for a Regulation establishing a Union framework for carbon removals

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SUMMARY AND RECOMMENDATIONS

Carbon dioxide removals (CDR), also known as negative emissions or carbon removals, refers to scrubbing greenhouse gases from the atmosphere and storing them permanently. The science is clear[1] that we will need to remove carbon from the atmosphere this century in order to keep global heating below 1.5°C. However, removals must be supplementary to and not a substitute for emission reductions, while differentiating between real and false removal solutions remains crucial. For the time being, the deployment of CDR will be inherently limited due to technological constraints, energy and land requirements, and the potential negative effects of CDR methods. But even if the scaling up of high quality CDR methods was possible today, overreliance on CDR should be avoided as it could cause polluters to delay or postpone real emissions reductions (so-called mitigation deterrence).

In this context, the European Commission's proposal for the creation of a certification system for carbon removals in the EU should, in principle, have been a necessary first step in determining what actually constitutes valid carbon dioxide removals and in understanding the related environmental and social impacts, thus helping ensure the sustainable deployment of these methods in Europe. At the same time, an EU certification framework for removals could potentially harmonise rules among EU member states in this field while serving as a leading example for removals policy in other jurisdictions and at the international level (for example, under Article 6 of the Paris Agreement).

Regrettably, the European Commission's proposed Carbon Removal Certification Framework[2] (CRCF) falls short of this potential. It needs major changes if this framework is to become an effective tool for climate action.

[1] IPCC (2022), Climate Change 2022 - Mitigation of Climate Change, Working Group III Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.

[2] European Commission, Proposal for a Regulation of the European Parliament and of the Council establishing a Union certification framework for carbon removals, COM(2022) 672 final, November 2022..

Carbon Market Watch urges policymakers to consider the following policy recommendations to ensure the CRCF supports, rather than undermines, EU climate action. Policymakers must ensure that the CRCF makes sense from a climate perspective, and is not merely a tool to create extra revenue for specific groups or actors.

ENSHRINE THE CLIMATE FUNCTION OF REMOVALS IN THE CRCF AND MAKE THEM COUNT TOWARDS A FUTURE SEPARATE EU REMOVAL TARGET

NEVER USE CARBON REMOVALS TO OFFSET EMISSIONS

FOCUS ON REAL AND PERMANENT REMOVALS - KEEP CARBON FARMING AND PRODUCTS OUT

SET UP STRICTER QUALITY CRITERIA AND PROVIDE REAL GUIDANCE FOR KEY PRINCIPLES

DEVELOP LAND ACTIVITIES FOR NON-CLIMATE USES

GUARANTEE TRANSPARENCY AND PUBLIC ENGAGEMENT

Enshrine the climate function of removals in the CRCF and make them count towards a future separate EU removal target

In the absence of dedicated carbon removal legislation, the CRCF should set the right standard by enshrining in law the core climate function of removals: supplementing deep emission reductions and contributing to a dedicated separate target. The hierarchy of climate action, which sees removals used to balance the very last, unavoidable emissions[3] and reach net-negative emissions, should thus not only be mentioned in the recitals, but also incorporated into Article 1 of the proposal, to avoid any confusion and defang the risk of mitigation deterrence: removals slowing down or hampering emission reduction efforts.

At the same time, the new certification system should make explicit what removals can be used for and the role they will play in EU climate policy**.** In line with their climate function, carbon removals should be developed in parallel to emission reductions, potentially as a valuable limited resource.

KEY SUGGESTIONS FOR THE TEXT:

- **The climate role of removals as supplementing deep emission reductions should be enshrined in Article 1 on 'Subject matter and purpose' (renamed Article 1).**
- **'Rules for the use of the carbon removals certifications' should be added as point (d) (new) of Article 1.**

[3] The concept of residual emissions is critical in this regard. Residual emissions need to be really 'residual' - and a realistic threshold for emissions that are too hard or expensive to abate should be set in a dynamic way. What is so-called 'hard-to-abate' now might not be so in a few years or decades.

Never use carbon removals to offset emissions

Carbon removals must not be used for offsetting purposes. Any attempts to bring removals into the EU Emission Trading System (ETS) or to use them for the flexibility mechanisms of the Effort Sharing Regulation (ESR) should be explicitly ruled out. This means that no removals certified under the CRCF should be used either by installations covered under the EU ETS or by the EU member states to comply with their reduction targets under the ESR. In addition, the use of removals-based carbon credits (such as in voluntary carbon markets) by polluters to offset emissions or claim net-zero emissions must be prohibited.

In the short term, public funds (including the revenues of the ETS and the Common Agriculture Policy) and public procurement could be used to invest in CDR. Private funding in the shape of climate contributions[4] can also play a role in maturing CDR methods in the EU. A well-designed Carbon Removal Certification Framework can contribute in these regards, to guide public and private funds by quantifying climate benefits, promoting environmental co-benefits, and assessing and addressing re-released carbon (so-called reversals).

KEY SUGGESTION FOR THE TEXT

A new article titled 'Scope and prohibition' should be added that excludes the possibility of using removals units created through the CRCF for offsetting, compensating or replacing emissions reductions in voluntary or compliance frameworks.

[4] Carbon Market Watch (2020), Above and Beyond Carbon Offsetting – Alternatives to Compensation for Climate Action and Sustainable Development
https://carbonmarketwatch.org/publications/above-and-beyond-carbon-offsetting-alternatives-to-compensation-for-climate-action-and-sustainable-development/

Focus on real and permanent removals - Keep carbon farming and products out

The environmental integrity of the CRCF stands or falls with its definition of carbon removals. That definition must be science-based and reflect the constraints and functions of removals in the physical world. Real carbon dioxide removal actually reduces the concentration of CO2 in the atmosphere. Moreover, absolute confidence in the quality of removals is vital to reach climate neutrality in the real world and not only on paper. Therefore, to be considered as such, a removal process needs to remove carbon dioxide directly from the atmosphere and store it permanently (meaning at the very least for two centuries), with the emissions taken out of the air significantly outweighing the emissions involved in the removals process[5] (net negative emissions balance).[6]

Therefore, emission reductions should be excluded from the definition of removals in the CRCF. Even though emissions reductions (including in the land use sector) should be the top priority of EU climate legislation, the CRCF is not the appropriate tool to support those because it must focus on the removal of CO_2 already present in the atmosphere.

Over and above this, any methods which cannot scientifically feasibly guarantee permanent storage of carbon after its capture from the atmosphere should not be considered removals, but instead incentivised through other means for other benefits they offer. This means that the CRCF should exclude:

- **CARBON FARMING**, because these activities only store carbon in vulnerable carbon sinks, with carbon being released back into the atmosphere as part of the short-term or 'active' carbon cycle. Biogenic carbon pools are vulnerable to human or natural disturbances and net carbon sinks can easily turn into sources of carbon over time. Carbon farming under the CRCF includes some very short-term storage possibilities (such as soil) with uncertain benefits for climate change mitigation.[7] In addition, the biosphere does not have a limitless storage capacity but, instead, can reach saturation within a few decades.[8]

- **CARBON STORAGE IN PRODUCTS**, because the range of products that store carbon permanently is miniscule. Even when considering "long-lasting" wood products for construction, data show that half the carbon from these products returns to the

[5] All GHG emissions linked to the removal and storage process, such as land use change (direct or indirect), energy, materials and all other inputs and outputs, need to be well understood through rigorous life cycle assessments and accounted for in the quantification exercise.
[6] Tanzer, S. E., & Ramirez, A. (2019). When are negative emissions negative emissions? Energy and Environmental Science, 12(4), 1210-1218. https://doi.org/10.1039/c8ee03338b
[7] Caster, Paul et al. (2023), Carbon farming: Are soil carbon certificates a suitable tool for climate change mitigation?, Journal of Environmental Management Volume 330, 15 March 2023, 117142, https://doi.org/10.1016/j.jenvman.2022.117142
[8] Carbon Gap (2020). White paper, A guide to certifying carbon removal, p. 11. https://carbongap.org/wp-content/uploads/2022/11/Carbon_Gap_White_Pater_Oct22_updateCRCF.pdf

atmosphere within an average of 35 years,[9] which is nowhere near the centuries required to ensure tangible climate benefits. In addition, wood harvesting reduces the carbon stock of forests compared to unharvested forests (shifting the carbon from a more robust natural to a shorter-term and more vulnerable storage medium). The durability of carbon storage drops dramatically for other carbon capture and utilisation products, such as paper, plastics or fuels, which only retain the carbon for as long as the product is in use. Any potential products which may be developed in the future that scientifically guarantees the storage of carbon for at least two centuries would directly fit the definition of 'permanent removal", so there is no need to create a separate category for products.

All short-term storage methods must be disqualified from the CRCF. Throughout the EU climate policy landscape, clear differentiation is needed between temporary parking of carbon and permanent removals - including on what they can be used for (e.g. labelling or public procurement versus reaching of climate targets), compared to permanent storage**.** Highly reversible carbon sequestration has little to no climate value, and that should be explicitly acknowledged in the CRCF.

In addition, any units generated should receive a tag identifying the expected storage timeline - adding transparency and differentiation, for example, between storage that lasts centuries and storage that lasts millenia. The duration listed on the tag should be set by an independent expert body.

KEY SUGGESTIONS FOR THE TEXT

- **The proposed definition of 'permanent carbon storage' in Article 2(g) should be used as the main definition of 'carbon removal' and replace Article 2(a). Definitions 2(h) on carbon farming and 2(i) on carbon storage in products should be deleted - as the new definition 2(a) [old 2(g)] on permanent storage encompasses any activity that can lead to the generation of real carbon removals.**
- **A 'carbon removal activity' in Article 2 (b) should be defined as only resulting in permanent carbon storage. The references to enhancing carbon capture in a biogenic carbon pool, reducing the release of carbon from the biogenic carbon pool and storing atmospheric or biogenic carbon in products or materials should be eliminated.**
- **Any references to 'long-lasting', 'long-lived', 'long-term' or 'durable' that refers to storage of carbon should be replaced by a clear reference to permanent storage or storage for at least multiple centuries.**

[9] Hurmekoski, E. et al (2020). Impact of structural changes in wood-using industries on net carbon emissions in Finland. Journal of Industrial Ecology. https://doi.org/10.1111/jiec.12981

Set up stricter quality criteria and provide real guidance for key principles like baselines, liability and accounting

Ensuring the quality of certified removals is essential to enhancing the credibility of the CRCF and to incentivise safe and sustainable removal solutions. Yet, the crucial criteria proposed by the Commission are often vague, and important details are hazardously left out of the primary legislation. The addition of explicit guidance for these key principles would ensure clarity on how they would be operationalised, while not overly expanding the scope and detail of the current proposal.

To make sure carbon removals can fulfil their climate role, the quality criteria should be strengthened by:

1. Breaking down the category of direct and indirect emissions in the quantification formula and using conservative estimates.

KEY SUGGESTIONS FOR THE TEXT

- **Spell out what is meant by direct emissions and include domestic and international indirect effects as part of indirect emissions in Article 4.1(c), to cover not only indirect upstream or downstream emissions but also emissions from, for example, direct and indirect land use change, activity shifting, market and ecological leakage.[10] Specifying the nature of direct and indirect greenhouse gas emissions associated with the removal process is essential to quantify the real climate benefit of the activity.**

- **Replace 'accurate' with 'conservative' in Article 4.4. Carbon removals shall be quantified in a conservative manner, to limit the risks of overestimation. Specific provisions should also be included to determine how conservativeness is achieved in quantification. The degree of conservativeness should be proportional to the level of uncertainty in the quantification of carbon removals.**

[10] Activity-shifting leakage may occur when the removal project displaces an activity somewhere else; market leakage may occur when the removal project impacts supply or demand for a given good; ecological leakage refers instead to emissions change in an area that is hydrologically connected to the area where the removal project is implemented (for example, emissions from soils in a wetland if water levels are lowered).

2. Establishing credible and conservative baselines.

KEY SUGGESTIONS FOR THE TEXT

- **Baseline scenarios and quantification methods defined in Article 4.5 should be conservative, regularly reviewed, and in line with best available science, technologies and practices. Possible perverse incentives for baseline inflation should be considered and addressed.**

- **The baseline scenario should be aligned with achieving the goals of the Paris Agreement. If standardised baselines are to be used, they should reflect the best performance of comparable activities on the market, if these activities are compatible with achieving the goals of the Paris Agreement. Standardised baselines should not be set based on the average performance of a sector, as this does not create a sufficiently high incentive for improvement.**

3. Assessing additionality.

Additionality is unlikely to be a major concern for the certification of permanent removals in the near future. It is highly unlikely that these activities are going to be economically viable in the short term without an incentive focused on the delivery of the removals themselves. The CRCF certifies projects for their delivery of high-quality and sustainable removals, and in that sense the Framework can take a different approach to additionality than voluntary carbon markets. This is, however, only the case if offsetting is ruled out. Moreover, in the medium to long run, the European Commission should monitor the financial additionality of projects and project-types to evaluate whether that remains the case. On the other hand, the non-eligibility under the CRCF of legally required activities remains crucial to define additionality.

KEY SUGGESTION FOR THE TEXT

The reference to "Union and national statutory requirements" in Art. 5.1 (b) needs to be clarified so that it refers to non-climate legislation and activity-level requirements, and not to Union or national removals targets.

4. Defining liability for reversals to reinforce long-term storage.

Liability for reversals should set a clear responsible actor who is obliged to compensate for any reversals that occur - ideally by repurchasing removal units, or by creating new and additional removals. The draft Article 6.1, which requests that operators demonstrate that their removal activity "aims" at ensuring long-term storage of carbon, is not enough to make sure carbon is stored permanently. Certifying on the basis of an intention is unacceptably weak and risks leaving operators unaccountable for potential reversals. The burden of liability should lie with the actors that financially benefited from the removal activity. Countries and the general public should not automatically be considered responsible for any reversals of storage.

KEY SUGGESTION FOR THE TEXT

As only permanent storage should be certified as removals, the 'appropriate liability mechanisms' in Article 6.2(b) could directly refer to the provisions of the CCS Directive on geological storage and CO2 leakage. This would make operators liable to compensate for any re-emission through the surrender of ETS emissions allowances. Another alternative is to develop a new liability mechanism centred around the mandated creation of new and additional removals to compensate for reversals. In either case, the reversal must be accounted for first and society at large should not automatically assume liability, especially if actors benefited financially from the removal activity).

5. Demanding that nature-based solutions have a positive impact on the sustainability objectives, and adding social safeguards to the list.

Land or biomass based-activities, such as bioenergy with carbon capture and storage (BECCS), should have the primary role of positively contributing to the sustainability objectives identified in Article 7 of the proposed CRCF. Current practices, especially in the forestry sector, are harmful to biodiversity. By only demanding 'neutral' impacts, those damaging activities can be continued and even certified and financially rewarded. There is a need for ensuring positive environmental and biodiversity impacts beyond the status quo. In addition, the sustainability requirements should address and implement social protection concerning land rights to prevent land grabbing and protect small-scale farmers and foresters, and local communities.

KEY SUGGESTIONS FOR THE TEXT

- **A sentence should be added to Article 7.2 on the need for land or biomass based removals to ensure a positive contribution to the sustainability objectives.**

- **A new paragraph to Article 7.1 should be introduced addressing social impacts, and especially protection against land-grabbing.**

6. Introducing the principle of good accounting.

Certified removal activities should apply rigorous accounting methodologies, with the disclosure of as much information as possible related to the removal process. This would help prevent double-counting and double-claiming (i.e. the activity is accounted or claimed twice); allow the expiry of the certificate in case of reversal while turning removals into emissions in the inventories/accounting frameworks; and make sure that the certification happens at the actual end of the removal process (for example, when natural carbon stocks have recovered, instead of when biomass is burned).

KEY SUGGESTION FOR THE TEXT

Introducing a new subparagraph under Article 3 on good accounting as an explicit eligibility condition.

Develop land activities for non-climate purposes

The removal and storage of CO2 through vegetation and soil management should not be regarded as real carbon removals for a number of reasons:

- **IT CAN EASILY RELEASE THE STORED CARBON BACK INTO THE ATMOSPHERE** because of human or natural disturbances, including simply failing to continue started practices, thus long-term storage cannot be ensured. They are in no way equivalent to permanent emissions or permanent storage
- **IT IS VULNERABLE TO THE ALREADY SEVERE IMPACTS OF THE CLIMATE CRISIS**, which can heavily affect the limited storage potential of the biosphere. This includes droughts, floods, pests and forest fires

- **IT TAKES A LONG TIME TO REPAY THEIR 'CARBON DEBT' AND DELIVER ACTUAL REMOVALS,**[11] time we simply do not have in the timeframe of the current climate breakdown. Biomass is not carbon neutral
- **IT RISKS GENERATING REMOVAL UNITS BEFORE DELIVERING THE ACTUAL REMOVALS,** which can take decades to centuries for certain land sector removals (e.g. forests and peatlands)
- **IT IS DIFFICULT AND EXPENSIVE TO REPORT, MONITOR AND VERIFY THESE ACTIVITIES,** especially when compared with removal methods that result in geological storage of carbon

However, if implemented mindfully, some nature-based solutions offer significant environmental, social and economic benefits which are far more important than their carbon sequestration effect. In line with the objectives of the upcoming Nature Restoration and Soil Health laws, nature-based solutions should be incentivised to maximise their benefits on biodiversity, soil quality and water retention, rather than focusing on an elusive and misleading carbon metric.

The correct way to do so is through activity-based finance, which would support farmers and foresters using good practices, instead of trying to quantify carbon that cannot feasibly be measured and robustly monitored, and for which liability for reversals will place undue burden on landholders. Activity-based finance in these areas would not only lead to less burdensome Measurement, Reporting and Verification (MRV), simpler certification methodologies, lower risks for farmers and forests, but it would also allow for the continuous support of good practices. This would also reduce the risk of overestimating carbon 'removals' in these sectors and the potential for equating temporary parking of carbon with either permanent emissions or real removals. Early movers would also be supported for adopting these environmentally positive activities.

KEY SUGGESTION FOR THE TEXT

Carbon farming should be incentivised through dedicated non-climate, biodiversity and nature-focused legislation. If carbon farming is kept in this regulation, it should only be covered in a new chapter solely dedicated to carbon farming that would lay out the principles, rules and production methods for farmers to follow to get Carbon Farming Certification (along the lines of the Regulation on organic products). This certification would be distinct from the removal certification and must not lead to the generation of removal units. The new chapter should also focus on activity-based finance, which can provide a business case to implement practices that are needed for the environment and the climate, with clarity that continued support depends on continuing those practices.

[11] Any removal method that uses biomass is just a transfer from one storage medium (the ecosystem) to another (wood in the case of trees, or geologic storage in the case of BECCS) with a certain amount of emissions generated during the process, which creates a 'carbon debt'. The removal of atmospheric carbon is only achieved when the next generation of biomass regrows (in the order of decades to centuries for forest biomass), repaying the carbon debt.

Guarantee transparency and public engagement

Transparency and public engagement should be ensured on multiple levels:

- **EXPERT GROUP ON CARBON REMOVALS.** The work of the Expert Group on Carbon Removals, which will support the Commission in the preparation of the delegated acts, should be public. This means that, in addition to the participation of different stakeholders from different groups, including environmental groups, all meetings should be public and streamed online, and all stakeholder input should be publicly available.

- **OPERATOR, CERTIFICATION BODIES AND CERTIFICATION SCHEME.** The operator carrying out removal activities to be certified needs to publicly disclose complete and transparent information on the activity undertaken sent to the certification body. This can help identify unforeseen ecological or social impacts that will need to be addressed if removals are scaled up over time. At the same time, transparency during the certification process is vital. Stakeholders need to be alerted and consulted prior to the issuance of certificates.

- **THE EUROPEAN COMMISSION.** Finally, the Commission should maintain an open and publicly available central registry keeping track of all certified carbon removal projects and how they are used. The registry should be regularly updated and any reversed carbon should be accounted for, leading to the expiry of the related certification label/credit/claim.

KEY SUGGESTION FOR THE TEXT

Articles 9 to 14 should be widened to ensure transparency and public engagement at the three levels mentioned above.

CARBON MARKET WATCH

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