

Certification of carbon removals – EU rules

Fields marked with * are mandatory.

Introduction

Responding to the urgency of climate action highlighted in the successive assessments of the Intergovernmental Panel for Climate Change (IPCC), the European Union has set in law its objective of economy-wide climate neutrality by 2050. The European Climate Law requires greenhouse gas (GHG) emissions and removals to be balanced within the European Union at the latest by 2050, with the aim of achieving negative emissions thereafter. Each single tonne of CO₂eq emitted into the atmosphere will have to be neutralised by a tonne of CO₂ removed from the atmosphere. To scale up carbon farming and industrial solutions for removing carbon from the atmosphere, the European Commission is working towards a legislative proposal in 2022 on a regulatory framework for the certification of carbon removals.

As underlined in the Communication on Sustainable Carbon Cycles, the establishment of the certification framework will be an essential stepping stone towards the transparent recognition of activities that remove carbon from the atmosphere in an environmentally sound manner. The certification rules should therefore set scientifically robust requirements for quality of measurement, monitoring, reporting and verification of the carbon removed from the atmosphere, the duration of the storage, the risk of reversal and the risk of carbon leakage increasing GHG emissions elsewhere. Requirements should also be set for the amount and type of energy used for the carbon removal process. The certification rules should put in place robust safeguards to make sure that carbon removal activities do no harm to biodiversity and other sustainability objectives. This is important to ensure that the EU can claim domestic climate neutrality while helping to achieve other objectives of the European Green Deal.

This public consultation invites public administrations, academic institutions, businesses, organisations and individuals to contribute to the preparation of an EU regulatory framework for the certification of carbon removals. The findings of the consultation (which will be summarised and published) will inform the impact assessment accompanying the Commission proposal on this initiative.

Guidance on the questionnaire

This public consultation consists of some introductory questions on your profile, followed by a questionnaire. Please note that you are not obliged to reply to all questions.

At the end of the questionnaire, you are invited to provide any additional comments and to upload additional information, position papers or policy briefs that express the position or views of yourself or your organisation.

The results of the questionnaire and uploaded position papers and policy briefs will be published online. Please read the specific privacy statement attached to this consultation stating how personal data and contributions will be dealt with.

In the interest of transparency, if you are replying on behalf of an organisation, please register with the register of interest representatives (if you have not already done so). Registering commits you to complying with a code of conduct. If you do not wish to register, your contribution will be handled and published with contributions received from individuals.

About you

* Language of my contribution

- Bulgarian
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- Danish
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- English
- Estonian
- Finnish
- French
- German
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- Hungarian
- Irish
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* I am giving my contribution as

- Academic/research institution
- Business association
- Company/business organisation
- Consumer organisation
- EU citizen
- Environmental organisation
- Non-EU citizen
- Non-governmental organisation (NGO)
- Public authority
- Trade union
- Other

* First name

Mark

* Surname

Preston Aragonès

* Email (this won't be published)

mark@bellona.org

* Organisation name

255 character(s) maximum

Bellona Europa

* Organisation size

- Micro (1 to 9 employees)
- Small (10 to 49 employees)
- Medium (50 to 249 employees)
- Large (250 or more)

Transparency register number

255 character(s) maximum

Check if your organisation is on the [transparency register](#). It's a voluntary database for organisations seeking to influence EU decision-making.

* Country of origin

Please add your country of origin, or that of your organisation.

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- Bonaire Saint Eustatius and Saba
- Bosnia and Herzegovina
- Botswana
- Bouvet Island
- Brazil
- British Indian Ocean Territory
- British Virgin Islands
- Brunei
- Bulgaria
- Burkina Faso
- Burundi
- Cambodia
- Cameroon
- Canada
- Cape Verde
- Cayman Islands
- Central African Republic
- Chad
- Chile
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- Guadeloupe
- Guam
- Guatemala
- Guernsey
- Guinea
- Guinea-Bissau
- Guyana
- Haiti
- Heard Island and McDonald Islands
- Honduras
- Hong Kong
- Hungary
- Iceland
- India
- Indonesia
- Iran
- Iraq
- Ireland
- Isle of Man
- Israel
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- Mozambique
- Myanmar/Burma
- Namibia
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- Netherlands
- New Caledonia
- New Zealand
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- Nigeria
- Niue
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- Palestine
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- Papua New Guinea
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* Contribution publication privacy settings

The Commission will publish the responses to this public consultation. You can choose whether you would like your details to be made public or to remain anonymous.

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Only organisation details are published: The type of respondent that you responded to this consultation as, the name of the organisation on whose

behalf you reply as well as its transparency number, its size, its country of origin and your contribution will be published as received. Your name will not be published. Please do not include any personal data in the contribution itself if you want to remain anonymous.

Public

Organisation details and respondent details are published: The type of respondent that you responded to this consultation as, the name of the organisation on whose behalf you reply as well as its transparency number, its size, its country of origin and your contribution will be published. Your name will also be published.

I agree with the [personal data protection provisions](#)

Questions

Scope

Question 1: What in your view are the main challenges regarding the integration of carbon removal in EU climate policies?

at most 3 choice(s)

- Ensuring that strong action to reduce emissions is not undermined by shifting focus on carbon removals.
- Ensuring a net contribution from removals to the achievement of climate neutrality.
- Ensuring precise, accurate and timely measurement for removals.
- Providing sufficient guarantees for the duration of carbon storage and the prevention of reversals.
- Avoiding potential negative environmental impacts and complying with sustainability principles.
- Fostering cost-effective carbon removal solutions.
- Guaranteeing transparency of the benefits and costs of carbon removals.
- Setting appropriate baseline and demonstrating the additionality of removals.
- Other

Please specify:

500 character(s) maximum

In the short/medium-term, removals must be additional to emission reductions.
Ensuring permanence is the key issue. On this basis, only permanent removals should be used to balance

emissions.

Options 2 & 3 are equally important and co-dependent. Critical that only net removals be certified to ensure that the desired outcome of reducing the atmospheric concentration of CO₂ is achieved.

Co-benefits of CDR must be maximised and trade-offs minimised but should not interfere with carbon accounting.

Question 2: What should be the main criteria defining the types of carbon removals that EU climate policies should incentivise?

at most 3 choice(s)

- Technical readiness and economic feasibility
- Potential for deployment at large scale
- Robustness of monitoring, reporting and verification aspects
- Affordability of monitoring, reporting and verification aspects
- Duration of carbon storage
- Risk of intentional or unintentional reversal of carbon removals
- Potential environmental co-benefits
- Potential social benefits
- Other

Please specify:

500 character(s) maximum

The criteria for CDR methods to be included should be independent of the TRL, potential, or economic feasibility, and should be focused on the reliability of the MRV and permanence of the CDR methods. The certification itself should only quantify the net amount of CO₂ permanently removed but environmental and social co-benefits are both highly important and should be qualitatively assessed aside the CDR value. Methods with a risk of intentional reversal should not be incentivised for CDR.

Question 3: Taking account of the aspects identified in the previous question, what carbon removal solutions should EU climate policies incentivise and in what time horizon?

Carbon farming solutions enhancing ecosystem removals

	As soon as possible	After 2030	Towards 2050	Never	No opinion
Afforestation under ecological principles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Reforestation and forest restoration	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sustainable forest management	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Agroforestry and mixed farming	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increase of soil organic carbon on mineral soils	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

Increase of soil organic carbon on organic soils	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Wetlands and peatlands restoration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Costal marine ecosystem restoration and preservation	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please specify:

500 character(s) maximum

None of the above CDR methods can provide tradeable credits due to the high risks of reversals and the risk of 'carbon tunnel vision': optimising for carbon removal at the expense of other co-benefits. For these methods, carbon removal should not be the primary objective nor be given incentives on a 'per-ton removed' basis.

The land sink should be handled separately from the geological sink since these have different timescales. Methods with very high risk of reversal (soil) are not CDR.

Industrial solutions for carbon removals

	As soon as possible	After 2030	Towards 2050	Never	No opinion
Biochar	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Direct air capture with long-term or permanent carbon storage	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bioenergy with carbon capture and long-term or permanent storage	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Geological storage of non-fossil CO2	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bio-based products with long lifetime (including for construction)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Utilisation of non-fossil CO2 in long lifetime products	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Enhanced rock weathering	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please specify:

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DACS' only purpose is to supply CDR and its development is contingent on a reliable MRV that ensures net-removals are accurately quantified.

BioCCS: the production of goods and heat should be prioritised above power generation. The land sink must not degrade when sourcing biomass and full LCA must be performed, even for waste/residual biomass.

Whether CO₂ in products results in CDR depends on end-of-life. No CDR incentive should be given for displacing fossil CO₂.

Reversal = Delayed emission

Would you have any additional comments on scope, please specify:

2500 character(s) maximum

As stated by IPCC, the short-term role of CDR is to accelerate net reductions. Therefore, CDR efforts should be additional to deep and rapid emission cuts before CDR is used to balance out residual GHG emissions.

EU CDR policy should treat land sink (short-cycle) and geological sink (long-cycle) removals separately given their different characteristics. Only reliable net-removals towards geological sinks (long-cycle removals) should be used to balance out residual fossil GHG emissions. Short-cycle removals should not be tradeable.

The certification should look at the whole lifecycle of the carbon molecule and include all associated emissions into the emission balance, ensuring only net removals are certified.

The CRC-M focus is on carbon removal. Therefore, while maximising co-benefits and minimising trade-offs should be encouraged, the carbon removal certificate value of a CDR method must only reflect the net amount of carbon that is permanently removed. For example, an improvement in biodiversity should not be used as a means to artificially inflate the value/amount of CO₂ that has been permanently removed.

For all CDR methods, incentives on the basis of carbon removal should only be given once the MRV and quantification is reliable and the risk of reversals and impacts on co-benefits are well-understood and managed.

For many CDR methods, the removal of carbon from the atmosphere is an ancillary benefit. In such cases, there is a risk that focusing on the CDR potential could produce undesirable outcomes where CDR potential is maximised at the expense of other environmental or social benefits. Where this is the case, the CDR methods should not receive CDR incentives which would disproportionately incentivise the removal of carbon above other benefits. In such cases, the deployment of the CDR method should be incentivised or mandated via other means, such as the implementation of protected areas for conservation and biodiversity.

Where a CDR method results in both an emission reduction and a carbon removal, only the net-removal should be certified. Reductions and removals should never be aggregated into a single number. The EU should look for CDR methods where there are synergies between emission reductions and carbon removal potential.

Where a CDR method has reversed, the certificate issued is nullified. If the certificate was used to balance out an emission, that emission should be subject to normal emission penalties.

The benefits of a certification framework to scale up high-quality carbon removals over the coming years

Question 4: Would you agree that establishing a robust and credible certification system for carbon removals is the first essential stepping stone towards achieving

a net contribution from carbon removals in line with the EU climate-neutrality objective?

- Yes
- No
- No opinion

Question 5: What would be the main objectives for the certification of carbon removals?

at most 3 choice(s)

- To increase the transparency and level playing field of voluntary carbon markets.
- To allow comparability and competition between different carbon removal solutions
- To provide better public incentives for nature-based and industrial carbon removals in EU and national funding programmes.
- To provide better financial incentives for land managers (e.g. purchasers of food and biomass products reward climate-friendly agriculture through price premiums or incentive payments – often called ‘in-setting’).
- To provide better financial incentives for carbon-storage products (e.g. bio-based products, woody construction material).
- To increase transparency in corporate sustainability reporting and foster the credibility of climate-neutrality claims.
- To support the labelling of sustainable products.
- Other

Please specify:

500 character(s) maximum

Only net removals with permanent storage should be certified.

Transparency and reliability is extremely important.

Certified carbon removal should be supplementary to emission reductions and should not be tradeable with emissions until emissions have been sufficiently reduced.

The overarching objective should be to ensure that a CDR method actually permanently removes CO₂ from the atmosphere and to produce a reliable mechanism to quantify/verify these processes with stringent liability.

The role of the EU in the certification of carbon removals

Question 6: Which role should the EU take in the certification of carbon removals?

- Voluntary carbon markets work well. There is no need for an additional intervention by the EU.
- The EU should establish minimum standard requirements on reporting transparency for carbon removals.
- The EU should establish comprehensive standard requirements for carbon removals, e.g. on monitoring, reporting and verification, on the duration of the removal or baseline setting and additionality.

Question 7: What functions in the certification process should be carried out by private or public entities?

	Independent private entities	Public administration	No opinion
Establishment of certification methodologies	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Establishment of the system for accreditation of certification bodies	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Validation of the carbon removal project (ex-ante)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Verification of removals made (ex-post)	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>

Would you have any additional comments on the role of the EU in the certification, please specify:

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The EU's role in the short-term should be to ensure that CDR projects achieve a net-removal of CO₂ from the atmosphere with permanent storage, along with appropriate liabilities in the event of reversals and without causing harm to other environmental priorities. These certificates should not be used for the purposes of offsetting in the short-term. Without a robust certification scheme, the EU will not be able to reliably provide incentives per-ton of CO₂ removed.

Q4: While an EU certification of CDR is an essential tool for EU climate policy, it is possible to incentivise or mandate some approaches where CDR is a co-benefit. For example, the restoration of ecosystems has many benefits, including carbon removal. However, without a certification it is not possible to give incentives on these removals on a 'per-ton of CO₂ removed' basis.

Q6: The EU should not rely or focus on the voluntary carbon market for the development of standards nor should it anticipate an inclusion of the VCM into compliance markets. Instead the EU should focus on ensuring that CDR deployment is robustly monitored, that liabilities/reversals are sufficiently handled for permanence, and that CDR does not get in the way of emission reductions. Prior to integration of the CRC-M into EU climate policy, it should be tested on projects funded by the Innovation Fund. The EU should also work towards eliminating corporate claims of climate neutrality on the basis of offsetting, except in cases where residual emissions are balanced out with additional net removal of atmospheric carbon with storage in the geological sink.

Q7: This does not necessarily have to be a public body, however it should not be a for-profit entity or a body which would receive financial incentives to grant or deny certifications. The entity should not derive its funding from the quantity of removals that are certified. Of the two above options, a public administration is preferable.

Certification methodologies

Question 8: Carbon removal solutions can differ significantly, for example as regards duration of removals or robustness of monitoring, reporting and verification. In this context, do you think an EU certification framework should allow different types of certificates for different types of removals?

- The EU certification framework should define only the minimum criteria for the certification and should not comprehensively define the certificates.
- The EU certification framework should only allow a single type of certificate to ensure equivalence of certified carbon removals.
- The EU certification framework should allow different types or sub-categories of certificates to better reflect the diversity of carbon removal solutions and their characteristics.

Question 9: Apart from diverging durations of existing carbon removal solutions, storage may also be prematurely interrupted and carbon may consequently be released back into the atmosphere. What approach could better manage this risk of intentional or unintentional reversal of carbon removals?

- Make removal providers liable for any reversal of removals and require them to offset any reversal.
- Encourage or require carbon removal providers to set up insurance systems or multi-project pooling mechanisms.
- Require commitment to multi-year monitoring plans at the outset of the certification procedure.
- Issue certificates with specific durations (e.g. 5, 7 or 10 years) that can be renewed.
- Require methods with a risk of reversal to be discounted or require a share of the removals to be stored in a buffer account (e.g. 10 to 25 per cent of the expected removals).
- Other

Please specify:

500 character(s) maximum

Permanent storage is the objective since temporary storage is equal to a delayed emission.

Different CDR methods will require different liability regimes to ensure permanent storage and accommodate varying characteristics. For this reason, land-sink and geological removals should be managed separately and used in different ways.

Combination of all approaches is required. Upfront payments linked to risk of reversal along with liability regimes to ensure reversals are remediated.

Question 10: In voluntary carbon markets, the use of baseline and additionality concepts aims to quantify and reward only additional removals, i.e. those that go beyond a pre-identified baseline and would not have occurred in the absence of the incentives from the carbon removal mechanism. To what extent do you think the EU certification framework should include the concepts of baseline and additionality?

- The EU certification should establish a single methodology to define the baselines and assess additionality.
- The EU certification framework should allow for a variety of baselines and additionality criteria to cater for different types of removals.
- To best adapt to the use of the certificates in a specific context, the certification framework should not prescribe definitions for baseline and additionality criteria.
- Other

Please specify:

500 character(s) maximum

Guiding principles should be the same, but the exact criteria will need to be flexible to accommodate the different CDR approaches.

Only anthropogenically-enhanced removals can be certified. For land-based sinks, the baseline should be defined in a consistent way, acknowledging the uncertainty of previous estimates. The variability of past baselines is another reason to keep sinks separate

If a project receives funding from another source (VCM) it cannot be eligible for full public funding.

Question 11: What information should the certification for carbon removal disclose?

- Type of carbon removals
- Quantity of carbon removed
- Information on the carbon removal provider
- Information on the certificate owner
- Information on monitoring, reporting and verification processes

- Duration of carbon storage
- Risk coverage and safeguards on sustainability objectives
- Environmental benefits
- Social benefits
- Information on the baseline and additionality of the removal
- Information on the use of the certificate and its contribution to the Paris Agreement with a view to avoiding double counting
- Price if the certificate has been traded
- Other

Please specify:

500 character(s) maximum

The co-benefits could be described qualitatively but must not be quantitatively added to the carbon removal certification or inflate the carbon removal value.

If the certificate is traded, information about how the certificate will be used (e.g. which emission it is balancing out/what type of claim is being made) should also be disclosed.

Clear information on who is liable in the event of a reversal.

Would you have any additional comments on on certification methodologies, please specify:

2500 character(s) maximum

The certification of CDR should first serve as a way to make sure that CDR projects truly permanently remove more CO₂ from the atmosphere than they emit in the process of doing so.

The methodologies should keep the definition of CDR in mind and should only certify net removals.

The four principles set out by Tanzer and Ramirez (2019) should be the underlying guidelines for this:

1. Physical GHGs are removed from the atmosphere
2. The removed gases are stored out of the atmosphere in a manner intended to be permanent
3. Upstream and downstream GHGs associated with the removal and storage process are comprehensively estimated and included in the emission balance
4. The total quantity of atmospheric CO₂ removed and permanently stored is greater than the total quantity of greenhouse gases emitted to the atmosphere.

The critical challenges will be to monitor the upstream and downstream emissions, as well as ensuring that CO₂ storage is not reversed.

Where biomass is required as an input for a removal, the direct and indirect land use impact should be assessed and included. Where the biogenic input is a 'waste' or 'residue' the certification should ensure it is not a waste/residue of an unsustainable or highly-emitting process (i.e. clear cutting of forests or waste derived from unsustainable production processes).

Bellona emphasises that storing CO₂ temporarily is akin to a delayed emission and should therefore be treated as such. Only when atmospheric CO₂ is reliably stored in a manner intended to be permanent

should a project be able to qualify for CDR certification. A key point is that if the CO2 storage risks being intentionally reversed, or was never intended to be permanent in the first place, it should not be eligible for certification.

The issue of permanence should be at the core of the certification methodologies and will be essential for the proper functioning of the CRC-M. Should the CRC-M certify a project which only temporarily stores CO2, this could undermine broader EU climate policy by introducing a substantial loophole.

Bellona recommends keeping the land-based and geological sinks separate. For land-based sinks Bellona recommends attaching a permanent liability to the certificate such that should a reversal occur, an equivalent additional removal must happen to prevent the certificate from being nullified. This would ensure only high-quality and well-managed projects can produce certificates.

Final remarks

Finally, are there any other important aspects that should be considered in establishing a regulatory framework for the certification of carbon removals in the EU?

- Yes
- No

Please provide your additional remarks:

5000 character(s) maximum

Ecosystem restoration is vital for both climate and biodiversity. However, CDR value should not be the driving factor of ecosystem restoration and other land-based removals. Such an approach is likely to undermine other environmental or social priorities such as management of nitrogen, water, land rights, biodiversity, among others. Furthermore, storage of carbon in the biosphere is highly susceptible to reversals and depends on the way the sink is managed. There is also distinct possibility that climatic conditions could undermine efforts to increase the land sink.

Some approaches mentioned in consultation can theoretically provide CDR but are not amenable to being certified. For example, storing carbon in soils is a theoretical possibility but changing climatic conditions will make it a challenge to even preserve that quantity of carbon currently stored in soils. Similarly, rewetting of peatlands is an effective way to prevent further degradation and emissions, but only very slowly removes carbon from the atmosphere once restored.

In short, the certification of CDR should not be a means to provide finance towards activities which are relevant for purposes other than reliable CDR. In the context of carbon farming, it is not helpful to suggest that enhancing soil carbon should produce a CDR certificate because it can increase agricultural yields (as is often discussed by Commissioner Frans Timmermans).

Recarbonation of cement does not qualify as additional CDR since it is the result of an existing (highly-emitting) process.

The consultation has not engaged on the issue of how the certification of carbon removals will be used. It is vital that this be clarified as quickly as possible. The added value of the certification process to climate

mitigation is directly linked to how these certificates will be used.

While CDR is essential for meeting net-zero targets, there is a substantial risk that it could undermine our approach to meeting these targets. It should be made explicit in EU policy that only residual emission sources can expect to rely on CDR to balance out their emissions. All other CDR deployment should be additional to emission reductions.

On the supply side, only geological storage CDR methods should be used to balance out residual emissions.

Should you wish to provide additional information (for example a position paper) or raise specific points not covered by the questionnaire, you can upload your additional document here.

Any document you upload will be published alongside your replies to the questionnaire, which is the essential input for this public consultation. An uploaded document is an optional addition and will serve as further background reading to better understand your position.

Please upload your file(s)

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/Addressing_differences_in_permanence_of_Carbon_Dioxide_Removal.pdf

5bcb8a84-7a3e-4791-a54f-5f3740ace4c8/CDR-Definition-and-Terminology.pdf

Contact

CLIMA-C03-ARES@ec.europa.eu

