



Brussels, 14 April 2023

Minutes
1st Meeting of the Carbon Removals Expert Group
7 March 2023, Brussels

1. Approval of the agenda

The agenda was adopted without comments.

2. Nature of the meeting: Kick-off for the work of the expert group

The first meeting of the Expert Group (EG) took place in a hybrid format. The first part 09:30-11:00 was not public and only open to EG members. From 11:00 onwards the meeting was public. The recording of the session is available on the Streaming Service of the European Commission¹.

3. Summary of discussions

Welcome, introduction & Rules of Procedure

Presentation by Christian Holzleitner - Head of Unit, 'Land economy and carbon removals', DG CLIMA

Mandate of the EG

DG CLIMA outlined the mandate of the EG², in particular regarding certification methodologies for carbon removals. It was highlighted that the EG will be a vital forum for bringing about exchanges of experiences and good practices from existing public and private initiatives in the field of carbon removals, where in 2023 the EG will focus on mapping out, opportunities and challenges, highlighting best practices of existing certification methodologies for carbon farming (forestry, agriculture, and peatlands) and industrial carbon removals. The work will also involve scoping the extent to which the existing methodologies address the four Q.U.A.L.I.T.Y criteria set out in the CRCF.

In the long term, the EG will feed into wider policy reflections on the integration of carbon removals into the EU's climate policies. It was stressed that the proposal for a Regulation on an EU certification for carbon removals, Carbon Removals Certification Framework (CRCF)³

¹ [FIRST EXPERT GROUP MEETING ON CARBON REMOVALS CERTIFICATION - Streaming Service of the European Commission \(europa.eu\)](#)

² [Terms of Reference](#)

³ [Proposal for a Regulation on an EU certification for carbon removals | Climate Action \(europa.eu\)](#)

is still under discussion in the Council and Parliament and will not be a matter of discussion in the EG.

The work of the EG will be supported by a technical assistance project led by Wageningen Environmental Research (WENR) and the consultancy 'Partners for Innovation' (Pfi), henceforth known under the acronym CRETA (Carbon Removal Expert Group Technical Assistance). CRETA will provide overall organisational support for the EG and be more closely involved, particularly in mapping out the existing certification methodologies, preparing scoping papers and strawman proposals on certification methodologies for carbon farming and construction products.

In addition, the EG will among others cooperate with projects from the Soil Mission (Horizon Europe) and the JRC. With regard to certification methodologies for permanent storage, including BECCS and DACCS, the work of EG will be supported by a separate technical assistance contract.

Rules of Procedure (RoP)

DG CLIMA presented the RoP⁴ which was circulated to all EG members prior to the meeting. The EG will make all efforts to adopt opinions, recommendations, and reports by consensus (as specified by point 5.1 of the RoP, following the standard RoP of all Commission expert groups laid down in Annex 3 to Commission Decision C(2016) 3301)⁵. In accordance with the horizontal rules, a majority position (by vote) will be sought if consensus cannot be reached (having exhausted all compromise options). The EG members with a minority position against or abstaining have the right to annex a summary of reasons for their position to the respective opinion, recommendation, or report. Subgroups meant to support the steering group could be set up in 2024 once the CRCF will eventually have been adopted.

Carbon Market Watch submitted written comments prior to the meeting and raised several issues in the meeting. They emphasised the utmost importance of the transparency of the EG and encouraged public streaming of all parts of all meetings. All documents, inputs and notes should be shared rapidly and be made easily accessible, including for the general public. They also raised the issue of voting because in their view commercial interests have disproportionate weight considering their strong representation in the EG, and that scientific and environmental groups are underrepresented. It was noted that several EG members were classified as NGOs even though they represent commercial interests. **DG CLIMA** reassured that all efforts will be made to take decisions by consensus. Minority positions will also be published in a transparent way. DG CLIMA clarified that the classification of 'organisational type' and 'represented interest' published through the registry reflects the self-assessment made by the members in their application under the call. Following this, the RoP was adopted by the EG.

⁴ [Transparency Expert Groups Register](#)

⁵ [C\(2016\)3301/F1 - EN \(europa.eu\)](#)

Keynote speech: ‘The role of CDR and current climate policy: Pigou's Advice and Sisyphus' Warning’

Prof. Ottmar Edenhofer - Director and Chief Economist of the Potsdam Institute for Climate Impact Research - presented the role of CDR. He emphasised that climate targets cannot be met without carbon dioxide removal (CDR), wherein the EU should take a leading role. When looking at CDR, a full range of options (from nature-based to industrial) needs to be explored and scaled up. The CDR gap must be addressed urgently with a consistent policy framework and solid incentive schemes. A European Carbon Central Bank (ECCB) could be considered as an intermediary between demand and supply-side.

Panel discussion: Industrial removals - permanent storage & products

Moderated by Fabien Ramos - Policy Officer DG CLIMA

Permanent storage presentations

Fabian Levihn (Stockholm Exergi AB) presented the BECCS project at Stockholm Exergi AB, which is financed by the EU ETS Innovation Fund.

Louis Uzor (Negative Emissions Platform) presented three DACCS projects (Heirloom and Carbon Engineering projects in the US and the Climeworks Orca plant in Iceland) that showcase different permanent removal approaches with a concentrated stream of CO₂ as a final product, to be stored in geologic formations and products.

Felix Ertl (Circular Carbon) presented a biochar carbon removal (BCR) project in Hamburg, using the waste residue of cacao shells and turning them into biochar and heat (steam and electricity).

Discussion with EG members

David Chiaramonti (independent EG member) highlighted the importance of considering the storage of carbon in products and soil. In addition, many technologies are mature and well advanced (high TRL level) and are ready to respond when needed. However, the current market conditions do not allow to develop sustainable business plans in many cases, and the emissions trading system (ETS) could be adapted to make the business of carbon removal possible, particularly in soil applications.

The Umweltbundesamt advised considering quality criteria and existing blueprints of the voluntary market and EU policies like the CCS Directive, while considering the value chain of fossil and biogenic carbon including losses. Negative emissions are not covered in ETS, so the methodology framework for BECCS and DACCS should account for them. Biochar is a form of BECCS, but accounting for biomass permanence is challenging.

Stockholm Exergi AB commented that negative emissions in ETS should be carefully considered, as it may be used in hard-to-abate sectors, which may lead to continuing business as usual.

Negative Emissions Platform highlighted its proposal for Creditinvest International Corporate Finance (CICF), urging consideration of various carbon capture methods and markets/companies buying credits (e.g., Microsoft). The EG should remain technology-agnostic and prioritise strict permanence standards.

Zero Emissions Platform emphasised the significance of calculating the permanence of BECCS and DACCS, which can be achieved when the value chain is known. However, BECCS and DACCS should not be considered the same: The CO₂ supply is virtually unlimited for DACCS, while the limited biomass supply of BECCS can lead to sustainability concerns. Also, other technologies should be considered.

Greece explained that currently, all emissions from ETS and non-ETS are covered by inventory systems and accounted for already. Issues of double-counting and additionality were raised.

Germany asked how Circular Carbon is currently using biochar. **Circular Carbon** answered that the biochar is sold to farmers, as it has a clear benefit in soil and rumen of animals.

The European Conservation Agriculture Federation commented that the benefits of biochar for soil are clear, but to consider it as additional is not a given.

Carbon storage in long-lasting products presentations

CEI-Bois discussed the potential of using timber in construction for the long-term storage of carbon and presented several examples of state-of-the-art wooden construction projects from the US and Switzerland.

CEMBUREAU explained the potential of carbonation of concrete over its lifetime and after demolition and noted that this carbon uptake is currently not covered by any certification.

Project AIR, Perstorp discussed the reliance of the chemical industry on fossil-based resources and the role of recycling as a mitigation option and presented a project (AIR, Perstorp) which substitutes fossil-based methanol with methanol based on renewable energy.

Discussion with EG members

Joris van Acker (independent EG member) clarified that there is no need to distinguish between wood and agricultural products, both can be seen as lignocellulose materials. The focus should be on moving towards sustainable timber practices instead of BECCS or bio-refinery. Sustainable construction using wood is a crucial factor in carbon removal, and innovation can facilitate collaboration between sectors to achieve optimal solutions.

Sebastian Rüter (independent EG member) stated that Kyoto Protocol's promotion of afforestation only stores a small portion of carbon in wood. Monitoring changes in biomass carbon and related pools is necessary. Sustainable management of biomass is possible, but deforestation, imports, exports, and national guidelines must be considered. LCA can aid in accounting, but the dimensions of various calculation methods, system boundaries, and scale levels will be the most challenging aspect of this EG.

Carbon Market Watch expressed scepticism about carbon storage in products. The key issue is permanence as the lifetimes in products are relatively short (not considered removal but only a reduced emission).

CEFIC complemented that for biomass in general the growing rate also needs to be considered.

Bellona Europe stated that sustainable production can lead to co-benefits such as reduced emissions and displacement of fossil fuels, but these are not actual removals. Including them can be misleading and result in figures that exceed 100%. To accurately measure removals, it's crucial to account for the flow from CO₂ uptake to storage in products, minus the emissions from the process.

The Netherlands highlighted the emission of bio-based construction products in addition to wood in the discussion.

CEFIC clarified that methanol could also be used for longer-lasting products, but that it is especially important to look at circularity in the context of long-term storage, both at the source and in terms of permanence and to include this in the certification process.

Negative Emissions Platform commented that there is a significant difference in storage time from a scientific perspective, with the IPCC indicating a range of 10,000 to less than 100 years. Therefore, it is essential to gather and categorise all approaches based on their permanence, as this differentiation is crucial to achieving long-term targets in Europe.

Panel discussion: Carbon farming – soils & forests

Moderated by Valeria Forlin, Policy Officer DG CLIMA

Agriculture presentations

Hugh McDonald (Ecologic Institute) highlighted the challenges related to the certification of soil carbon sequestration due to small and context-specific sequestration rates, risks of carbon release, difficulties in establishing additionality, and possible unintended side effects on sustainability.

Kaj Granholm (Baltic Sea Action Group) presented experiences from the pilot LIFE Carbon Farming project, which developed a methodology for soil carbon sequestration that has been successfully certified and audited in Finland.

Grega Milcinski (independent EG member) discussed the possibility of using satellite data to continuously monitor activities on the ground (e.g., for CAP payments). This can help assess changes in carbon stocks. Cloud infrastructure, machine learning and ground data can complement satellite data for robust monitoring.

Discussion with EG members

The European Environmental Bureau commented that some carbon removal solutions, such as rewetting, offer co-benefits for nature, farmers and climate but warned against using carbon storage in the land sector to compensate for emissions from fossil GHG in other sectors.

Climate Agriculture Alliance acknowledged the need for convergence on standards and highlighted the Farm Vote shared registry as a good example of avoiding double counting.

The European Conservation Agriculture Federation stated that if the full set of principles of conservation agriculture is applied, the soil carbon sequestration rate can easily be improved from 2 to 4-8 kilotons per year.

COPA-COGECA commented that it is important to realise that the certification framework should not be a financial risk or entail high administrative burden for farmers and must accelerate the low-carbon transition of agriculture.

Ifoam Organics Europe noted that soils and land are more than just carbon and that adverse impacts of carbon farming practices on biodiversity and ecosystems should be avoided; she also stressed the importance of recognising the continuation of good management practices.

Indigo Agriculture Europe noted that a potential solution to the risks of carbon farming could be to scale up and manage farmers collectively as a population. Finally, it was the important role of transparency in an accurate system was highlighted.

Anne-Catherine Dalcq (The European Council of Young Farmers) commented that a major challenge in farming is weather fluctuations, giving rise to the need for risk sharing such that the responsibility for carbon farming results does not fall on a single farmer.

Forests presentations

Asger Olesen (independent EG member) highlighted the large interest in certificates as already 70% of the global economy has a net-zero target, noted the plentiful data that will become available in the next decade, and said that the focus should be on building an entire system for removals, and not solely on certification.

Lucia Perugini (independent EG member) presented examples of state-of-the-art earth observation technologies and projects that can help with data collection for forest monitoring and emphasized the need for high-resolution platforms that allow the use of machine learning and artificial intelligence to produce remote-sensing data products.

Clothilde Tronquet (I4CE) shared the experience from the French national certification framework Label Bas Carbone (Low Carbon Label) for addressing uncertainties, the long timeframes of forestry projects, and the reversal risks.

Discussion with EG members

The Confederation of European Forest Owners commented on the importance of combining field data and satellite data, on additionality, and on the long timeframes of forest management.

Ministry of Agriculture and Forestry of Finland informed of Finland's approach to enhancing the forest carbon sink and of efforts to establish a national voluntary carbon market (including the recent publication of guidelines).

Environmental Coalition on Standards emphasised that forest-based carbon removals should be contingent upon forest ecosystem restoration with a focus on biodiversity and climate resilience, and that the success of the scheme depends not only on results but also activity-based monitoring and support for ecological forestry.

Climate Leadership Coalition commented that there would be an increase in demand for carbon removals as companies have set net-zero targets and need carbon credits for that.

Panel discussion: End-use & credibility of certification

Moderated by Giulio Volpi, Policy Officer DG CLIMA

Presentations on end-use of certification / verified carbon removal units

Giulia Maria Stellari (independent EG member) highlighted the three key reasons why companies currently buy carbon credits on the voluntary market: manage regulatory risks; build trust, and send a signal to their clients; build internal expertise to be prepared for engaging in the carbon credit market.

Gilles Dufresne (Carbon Market Watch) shared insights from his research on corporate net-zero climate targets. He found that many companies claim to be carbon neutral despite offsetting only a fraction of their emissions, and that many rely on short-term carbon removals from uncertified carbon farming projects. Furthermore, the marketing claims of these companies (e.g., carbon neutral, insetting) are often ill-defined and not well-understood by customers.

Discussion with EG members

Frauke Kracke (Stripe Climate) highlighted the need to increase the demand for removals to scale up the supply. Key quality criteria for Stripe's procurement of removals include permanence, additionality, robust methods for verification, and the ability to scale up. Different certification methodologies are needed for different removal pathways.

Martin Comes (independent EG member) highlighted the need to better define the end-uses of the certified carbon removals, the eligible biomass for BECCS and monitoring rules for long term-storage. He cautioned that the use of standardized baselines might result in an overestimation of total removal.

FoodDrinkEurope recommended using a value chain approach for the certification methodology, whereby certified units are attached to the raw materials to facilitate the calculation of Scope 3 emissions.

David Chiaramonti (independent EG member) underscored the need to discuss concrete methods for measuring carbon in soils, building on the related methodology on soil carbon accumulation set out in the EU Regulation C(2022) 3740 on certification rules under the Renewable Energy Directive.

Presentations on verification rules

Norbert Schmitz (ISCC) outlined the key aspects of their certification system, including governance, sustainability criteria, GHG emission calculations, and traceability. The certification process is conducted by an independent body that verifies data sustainability and GHG emissions throughout the entire supply chain. ISCC ensures credibility through factors such as transparency, practicality, effectiveness, competencies, and continuous development and responsiveness, ultimately promoting integrity.

Hanane Taidi (TIC Council) highlighted the importance of robust MRV to ensure the trustworthiness of the certification process. The founding pillars of a good certification framework include the independence of auditors from certified projects, the standardisation of the verification procedures to ensure credibility and create a level playing field between companies.

Discussion with EG members

Bellona Europa remarked that the issue of liability had not been discussed today but is a core issue relating to permanence and the end use of certificates and expressed the wish to have this on the agenda the next time. **The Chair** replied that liability would certainly be discussed in the future and is one of the Q.U.A.L.I.T.Y criteria.

4. Conclusions

Conclusion by Christian Holzleitner - Head of Unit, 'Land economy and carbon removals', DG CLIMA

DG CLIMA warmly thanked all the participants for their active participation and contribution to the first meeting and outlined the next steps. DG CLIMA took note of EG members' and stakeholders' feedback. The comments voiced during the meeting will be carefully considered when preparing the outreach activities and designing the key technical elements of the next meetings.

5. Next steps and meetings

A dedicated web-based tool ('Basecamp') will be set up for collaboration and sharing input by the EG members.

The next meeting of the **EG will focus on carbon farming methodologies** (soils, forests, peatlands) and will take place in a hybrid format on 21-22 June 2023. Following meetings will be held on industrial removals Sept/Oct 2023 (permanent storage, long-lasting carbon storage products), certification process Oct/Nov 2023 (certification schemes, third-party verification, registries), on 2024 work program Q4 2023 or Q1 2024 (report on best practices)

The precise dates of meetings will be announced in due time.

Annex 1: List of participants

List of representatives of members of EG participating, including Observers, ad hoc invited participants, and European Commission

A-Type Members of EG (independent experts)	
Last name	First name
CAMES	Martin
CHIARAMONTI	David
MILCINSKI	Grega
OLESEN	Asger
RÜTER	Sebastian
PERUGINI	Lucia
STELLARI	Giulia Marina
VAN ACKER	Joris
TAMME	Eve (Observer)
HOGLUND	Robert (Observer)
JOOSTEN	Hans (Observer)

B-Type Members of EG		
Last name	First name	Organisation
GRANHOLM	Kaj	Baltic Sea Action Group
KRACKE	Frauke	Stripe climate / Frontier
VOYSEY	Andrew	Climate Agriculture Alliance (Observer)

Representative of D/E-Type Members of EG	
Organisation	Delegation
Ministry of Environment, Waters and Forests	Romania
Ministry of Agriculture and Rural Development	Slovakia
Ministry of Agriculture of Hungary	Hungary
Swedish Environmental Protection Agency	Sweden
Danish Ministry of Climate, Energy and Utilities	Denmark
Ministry of the Environment	Czechia
Department of Environment, Climate Change division	Cyprus
Ministero dell'Agricoltura, della Sovranità	Italy
Alimentare e delle Foreste	Italy
Ministry of Climate	Poland
Ministry of Agriculture and Forestry of Finland	Finland
Department for Agriculture, Food and Marine	Ireland
Department of the Environment, Climate and Communications	Ireland

Ministry of Economic Affairs and Employment of Finland	Finland
Ministry of Environment	Lithuania
State Forest Service	Lithuania
Department of Environment	Cyprus
Ministry of Energy transition	France
Ministry of agriculture	France
Portuguese Environment Agency	Portugal
Slovenian Forestry Institute	Slovenia
Ministry for the Ecological Transition	Spain
Ministry of agriculture	Latvia
Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology	Austria
Ministry for Environment and Energy	Greece
Institute of Agricultural Economics	Hungary
ISTITUTO SUPERIORE PER LA PROTEZIONE E LA RICERCA AMBIENTALE	Italy
Ministry of Environment and Water	Bulgaria
Norwegian Environment Agency	Norway
Ministry of the Environment of the Republic of Estonia	Estonia
Environment Public Service/Climate Change Unit	Belgium
Ministry of economy and sustainable development	Croatia
BMUV	Germany
Ministry of the Environment	Finland
Ministry of Agriculture, Nature and Food Quality	Netherlands
The Ministry of Agriculture	Lithuania
Ministry of Agriculture of Hungary	Hungary
BMEL	Germany
Ministry of Environment	Slovakia
Ministero dell'Ambiente e della Sicurezza Energetica	Italy

Representatives of C-Type Members of EG	
European State Forest Association (EUSTAFOR)	
European Biochar Industry (EBI)	
REC Standard Foundation (Observer)	
ISCC System GmbH (Observer)	
European Council of Young Farmers (CEJA)	
Copa Cogeca	
IOGP International Association of Oil&Gas Producers	
Indigo Agriculture Europe GmbH (Observer)	
FoodDrinkEurope	
CEFIC (European Chemical Industry Council)	
Umweltbundesamt GmbH (Observer)	
Confederation of European Paper Industries (CEPI)	
Zero Emissions Platform (ZEP)	
Stichting BirdLife Europe	
European Environmental Bureau	
Stockholm Exergi AB	
IETA (International Emissions Trading Association)	

Ecologic Institute
European Confederation of Woodworking Industries (CEI-Bois)
Clean Air Task Force
Confederation of European Forest Owners (CEPF)
CEWEP, Confederation of European Waste-to-Energy Plants
Environmental Coalition on Standards (ECOS)
Bellona Europa
European Landowners' Organization
Negative Emissions Platform
Carbon Market Watch
TIC Council
I4CE Institute for Climate Economics (Observer)
Climate Leadership Coalition
CEMBUREAU - The European Cement Association
IFOAM Organics Europe
Negative Emissions Platform

<i>Invited experts: representative from</i>
Cool Farm Tool
Cool Farm Alliance (CFA)
Carbon Gap
EEA
Soil Mission
Partners for Innovation (CRETA-project manager)
Wageningen Research (CRETA Scientific coordinator)
CREDIBLE
Committee of Regions (CoR)

<i>European Commission: representative from</i>
DG CLIMA
DG ENV
DG AGRI
DG GROW
JRC
DG RTD
DG ENER

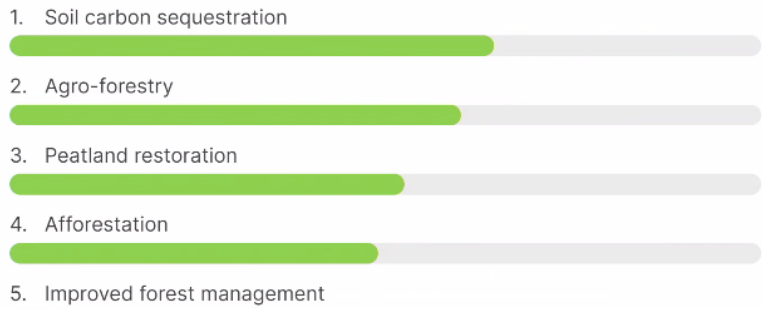
Annex 2: Questions from the public ('Slido')

The questions below were raised on the 'Slido' platform and will be taken into account as input for the subsequent meetings of the EG.

The results of the two 'Slido' polls are also included at the end.

How do we avoid that whole trees, and not just residues, are used for BECCS? The income generated by using trees as feedstock for BECCS could be greater than the price commanded by sawn timber.
LULUCF is a prominent C-sink, while the CH ₄ and N ₂ O from agriculture might be the most unavoidable emissions. Why not focusing on AFOLU carbon neutrality with C farms?
Should we certify plots of land or farms as a whole? The increase in C sequestration in one parcel can result in a decrease in C sequestration in other plots of the same farm.
How to deal with the fact that sandy soils have less sequestration potential (worse crediting business case), but are vulnerable to droughts, i.e. climate change?
What is the role of carbon offsetting in achieving carbon neutrality? Are there any limitations or drawbacks to this approach?
One of the main challenges is to track the permanent stored carbon. Could a digital product passport play a role in tracking stored carbon in products?
Are any specific CDR targets defined in current EU climate policy?
How will the EU Carbon Removal Certification Framework enable scale-up of carbon removal activities, as it is voluntary for companies to participate?
What does the CRCF mean for the companies? What would be the difference between this and other certification schemes (not the criteria but the function)?
Methodology for permanent storage is simple, whereas for C farming and CCU it is challenging. Do you think progress should be made where simple, and not hold up?
How to guarantee the additionality of Carbon Removal via wooden construction?
The CO ₂ reabsorbed by concrete is CO ₂ that was originally emitted from the production process. Surely that means that the process does not produce a net removal?
Are there any ethical concerns surrounding carbon removal technologies, such as the potential for unintended consequences or the displacement of communities?
How can we ensure that carbon credits are accurately measured and verified?
How can we encourage businesses and individuals to adopt more sustainable practices, and what role can governments play in this effort?
What is the role of carbon pricing in reducing carbon emissions, and how can we ensure that it is effective and equitable?

CARBON FARMING | Which of the following carbon farming activities should the group prioritise to develop the first certification methodologies?



CARBON FARMING | In prioritising carbon farming activities to develop the first certification methodologies, what criteria should the group consider?

