



Brussels, 28 June 2024

Minutes
4th Meeting of the Carbon Removals Expert Group
CRCF Regulation, third-party verification, and EU certification
methodologies

15, 16 and 17 April 2024, Brussels

1. Approval of the agenda

The agenda of the 4th meeting was adopted without comments.

2. Set-up of the meeting: 4th Meeting of the Carbon Removals Expert Group

The fourth meeting of the Expert Group (EG) took place in a hybrid format, with WebEx available for experts who could not attend in person. The entire meeting was also web-streamed on the Slido platform to allow interaction with the wider public. The recordings of the sessions and the slide decks are available on the Commission Expert Group website.¹

3. Overview

The agenda of 4th EG meeting covered the following 3 broad themes: the provisional agreement on the CRCF regulation was presented, including a preliminary prioritisation of EU certification methodologies; the technical assistance project (VERTA) on rules for third-party verification and certification registries; and Technical Assessment papers for the preparation of EU certification methodologies tailored to carbon farming, permanent carbon removals and carbon storage in products. The presentations were complemented by presentations from methodology developers and users, panels and discussions amongst the members of the EG. The discussions and subsequent written feedback will feed into the preparation of the VERTA stakeholder workshop in September as well as into the development of the strawman proposals for certification methodologies that will be developed by CRETA and ICF/Cerulogy.

4. Detailed summary of the discussions

DAY 1: CRCF Regulation and rules on third party verification

Chair: Christian Holzleitner (DG CLIMA)

Welcome and objectives of the 4th Expert Group meeting

Introduction by Christian Holzleitner - Head of Unit Land economy and carbon removals (DG CLIMA)

¹ https://climate.ec.europa.eu/news-your-voice/events/4th-eu-carbon-removals-expert-group-meeting-2024-04-15_en

DG CLIMA welcomed the experts to the three-day meeting, which now has a stable legal basis with the provisional agreement on the carbon removal certification regulation. They highlighted the agenda and the objectives of the meeting, which was focused on the CRCF Regulation and third party verification rules (day 1), carbon farming (day 2) and permanent storage and carbon storage in products (day 3) with plenty of room for discussion. The basis for these objectives were the technical assessment papers (TAs), outlining the progress of the certification methodologies for the underlying topics. Comments on these TAs are very welcome. In addition, DG CLIMA presented a timeline with the activities from November 2022 up to February 2024.

Presentation of the provisional agreement on the EU Regulation on Carbon Removals and Carbon Farming (CRCF) by Christian Holzleitner (DG CLIMA)

Presentation by the Commission

Christian Holzleitner (DG CLIMA) presented the provisional agreement on the CRCF Regulation and gave an outlook on its implementation. On 10 April 2024, the European Parliament adopted the [provisional agreement on the Carbon Removals and Carbon Farming \(CRCF\) Regulation](#), which created the first EU-wide voluntary framework for certifying carbon removals, carbon farming and carbon storage in products across the European Union. By establishing EU quality criteria and monitoring and reporting rules for carbon removal projects, the CRCF Regulation will facilitate investment in innovative carbon removal technologies, as well as sustainable carbon farming solutions, while addressing greenwashing. To implement the CRCF Regulation, the Commission will take the following steps: 1) with support from the Expert Group on Carbon Removals, it will develop tailored EU certification methodologies tailored to different carbon removal activities; 2) it will also set out technical rules for third-party verification and for the CRCF registry; and 3) it will approve certification schemes able to carry out certification in the EU Member States.

The CRCF Regulation foresees a number of reviews. By mid-2026, the Commission will assess the feasibility of certifying activities that reduce agricultural emissions from the management of livestock. By the same date, the Commission will also review the use of CRCF certified units for compensating emissions outside of the EU NDC and assess the need for alignment with the relevant provisions related to the implementation of Article 6 of the Paris Agreement. In addition, by 2028, the Commission will carry out a general review of the implementation of the Regulation. The political agreement was endorsed by the Member States' representatives in the Council (COREPER) on 8 March and by the European Parliament's Environment Committee on 11 March 2024, and is due to be voted by the Parliament's plenary in April 2024. The final legal text will be revised by lawyer-linguists, before it can be formally adopted by both institutions, published in the EU's Official Journal, and enter into force. This process is expected to be concluded before the end of 2024. The Commission intends to adopt the first set of certification methodologies within one year from the entry into force of the Regulation. Further information is available on DG CLIMA [website](#).

Participants on Slido were asked which of the 9 objectives is most important to them via a poll (figure 1) and which type of carbon removal activities should be prioritised (figure 2).



Figure 1 Slido response importance of objectives



Figure 2 Slido response priorities activities

Q&A

Replying to questions from the floor and from remote audience through Slido, the Commission team clarified the following points:

- The geographical scope of the CRCF is limited to activities taking place in the European Union. So CRCF does not certify activities carried in third countries.
- While the CRCF is voluntary, when companies join an EU approved certification scheme they are bound to apply the CRCF rules.
- CRCF requires the Commission to set out standardised baselines in the EU certification methodologies, provided that data is available, taking into account local regulatory, economic and environmental conditions to ensure that activities are additional. Standardised baselines are not set by operators.

- In absence of standardised baselines, the EU certification methodologies will set out rules for operators to calculate their activity-specific baselines. In this case, the methodologies will also include rules for demonstrating regulatory and financial additionality. These rules will be based on existing approaches applied under the EU state aid rules, i.e. allowing co-funding from state aid schemes
- The CRCF quality criteria and rules will be operationalized through detailed certification methodologies tailored to the different types of carbon removal activities (e.g. Direct Air Capture and Storage).
- Carbon removal units generated by carbon farming and carbon storage in products will be temporary, e.g. they will expire at the end of the monitoring period, unless some other conditions are met. On temporary units, if the credits are taken up with claims this should be reflected like in the corporate sustainability directive.
- The Commission will recognise certification schemes based on a thorough assessment process, whose details will be further set out in the implementing act on verification rules.
- CRCF includes clear criteria to avoid double issuance and double use of certified units, which will be implemented through the certification scheme registries and the CRCR Registry, once established.
- Certified units will be issued only ex-post, by certification schemes and then by the CRCF Registry once established, i.e. on the basis of already generated carbon removals and soil emission reductions. This doesn't prevent projects to forward into contracts with public/private payments.
- While there is no direct link between the certified units, which are based on a life-cycle assessment (LCA) methodology, and the accounting of carbon removals and soil emission reductions towards the EU climate objectives, which are based on the relevant EU legislation and IPCC rules, the CRCF certificate of compliance will contain relevant information for EU and national GHG accounting (e.g. amount of total removals).
- CRCF mandates that carbon removals certified need to contribute to the EU Nationally Determined Contribution (NDC) and climate objectives.
- The certified units cannot be used to achieve third-party NDCs or international compliance schemes (e.g. the CORSIA scheme for aviation).
- The Regulation does not require corresponding adjustments for any uses of the CRCF certified units, including uses for voluntary climate goals.
- While some carbon removal activities cannot yet be accounted for in the EU GHG inventory, all of them can already be certified under the Regulation, and certified units can still be issued for voluntary climate claim.
- By mid-2026, the Commission is tasked to review the use of certified units for compensating emissions outside of the EU NDC, and to assess the need for alignment with the relevant provisions related to the implementation of Article 6 of the Paris Agreement and with best practices on corresponding adjustment. This review would be accompanied by a legal proposal, if appropriate.

Development of third-party verification rules and certification process

Presentation: VERTA project (Verification of Carbon Removals – Technical Assistance)

Gemma Toop (Guidehouse) presented the Verta project, which focuses on the rules on verification and registries for carbon removals. The project runs until the end of the year and is conducted in cooperation with Trinomics and Ricardo. In particular, the project aims to assist the EC in developing implementing rules for the verification of carbon removals and certification registries. First step in the approach is to review existing approaches for inspiration (Task 1), then zoom in on the final CRCF text and develop options what the set-up could be under the CRCF (Task 2), followed by an in person workshop and additional stakeholder interactions to discuss and validate the outcome (Task 3). As part of the review, four main types of approaches were looked into: REDII, EU organic agriculture, EU ETS and existing voluntary carbon market certification schemes. Task 1 comprises processes, schemes (how these are operating, address governance elements and involve stakeholders) and existing registries (how these are linked to international carbon markets). Aim today is to hear from the room today what the main concerns are. Timeline: there will be a stakeholder workshop in September, have options on paper to acquire feedback on and then report back to the Commission by the end of the year.

Q&A

Martin Comes (Type A Expert) enquired about the priorities of the project in terms of types of issues addressed. Gemma Toop answered that implementing rules are required for all issues. David Chiaramonti (Type A Expert) asked about the timeline (with a workshop planned in September and time needed for stakeholders to review the input). Giulio Volpi (DG CLIMA) assured there will be sufficient time to provide input.

Review of existing approaches on verification rules and certification process

Presentation: Background paper by VERTA

Gemma Toop (Guidehouse) continued to provide an overview of initial findings of the VERTA project, mentioning that the methodology will need to be broad enough to be applied to all types of carbon removals, that the broader process and general rules of verification will be part of the project and stressing the importance of lessons learned from existing schemes (most tricky elements from current practice will be addressed in the discussion with stakeholders). Certification schemes have a crucial role: the EC wants to build on available schemes in the market, these control the documentation flow, audit the plans and verify the credits. The EU intends to recognise existing schemes that can be used, and as from 2028 the will itself operate CRCF certification. The main flow of the certification process starts with the application from the operator including an activity and monitoring plan, on basis of which the initial validation audit takes place. The monitoring period can be longer than the activity period. The EC recognises certification schemes, REDII is an important predecessor and example in that sense. ISO standards 17065 and 14065 form an important basis for the accreditation. A group auditing approach is envisaged to reduce the administrative burden for operators, both REDII and the EU organic certification have a similar approach. Auditing is then done on a sample basis, rules are to be set in the certification schemes. Voluntary schemes such as Label Bas-Carbone, Verra and Gold Standard all allow group auditing.

Asger Olesen (Type A Expert) enquired, assuming in most Member States the accreditation bodies will be the ones used in the ETS, these need to be in place in order for any credits to be issued (there is no alternative)? Giulio Volpi answered that certification bodies need to be accredited by national accreditation bodies or recognised by competent Member States' authorities. Objective is to have certification up and running as soon as possible, we therefore have to adopt certification methodologies, in parallel adopt implementing rules and then start recognition of certification schemes. Gemma Toop adds that schemes can be accredited in accordance with ISO standards, authorities are familiar with these. This however takes time and resources. Activity specific accreditation could be an option.

Martin Pigeon (Fern) expressed a concern regarding subsidiarity (i.e. national authorities are not keen on EC involvement in forest management). RED criteria are checking the legality more than the outcome. Removing primary woody biomass from the RED as proposed by the EP in the co-decision process would be a good step, to avoid use of the most destructive biomass feedstock. Sustainable biomass programme (scheme recognised by the EC) rewarded the destruction of old growth forest. The Commission was informed but no action was taken. A better review process is required for the CRCF. Label Bas Carbone incentivises destructive forest management practices. In recognition of existing schemes the Commission should take care not to make things worse.

Clean Air Task Force asked whether payments for the registries will come from the operators, and whether there will be oversight on the entire process, in view of potential reversals, e.g. by the Commission.

Giulio Volpi answered that it was decided in the co-legislation process that there will be full alignment with RED sustainable biomass criteria, but schemes could require stricter criteria. Regarding risk of reversals and rules for liability mechanisms: these will be part of the EU certification methodologies.

Lithuania (Irma Kragnyté via Webex) asked whether competent authorities, having to control certification bodies, will be subject to additional rules from the EC e.g. under the regulation? Giulio Volpi replied that the implementing act may set further rules regarding supervision of competent authorities. We can build upon forthcoming guidance on basis of the working groups with Member States operating under the RED.

Spain asked what happens when within a group of operators some are not performing well. Gemma Toop replied that the monitoring sample will be increased if irregularities are found, and monitoring may have to be redone. The group manager may need to impose rules.

Comments

Norbert Schmitz (ISCC) stressed the importance of a balanced stakeholder representation: credibility is key, if that is not in place there is a serious problem. The approach of the ISCC was explained, this goes beyond legal requirement, integrating also social aspects, and adding also food security and biodiversity to the approach. The approach should always be risk oriented, avoiding too much bureaucracy (seeking a Pareto optimum) with a focus on key topics. Auditors should do a proper and clear job based on the procedures of the certification system. The system itself should have an integrity programme in place. Robustness depends on supervision by the competent authorities, need to ensure that the auditors apply the rules in the same way. Critical cases/fraudulent behaviour should be dealt with in cooperation between the parties involved. Audit costs should be managed through straightforward protocols and digital

solutions, group solutions for carbon farming are crucial. Standardised baselines have been indicated already, remote sensing can be applied for monitoring. Limited versus reasonable assurance level: recommendable to look at the cost implication vs. the additional assurance obtained.

Simon Martel (I4CE): I4CE provides independent policy analysis of climate change mitigation and adaptation, has been deeply involved in the implementation of the Label Bas Carbone. Feedback from the agricultural and forestry sector includes that distribution of costs must be clarified (transaction as well as audit costs) and limited so as to not discourage participation while at the same time assuring a robust and credible system. Information asymmetry between the operator and credit buyer should be avoided. Discounting is a simple and powerful tool to do so. Payment of stakeholders per certificate may pose the risk of pursuing financial gain. Transaction costs are an issue in particular for small operators, group certification is promising in that respect. Methodologies need to be clear and prescriptive, thereby making it easier for the auditor. Many already exist, there is no need to reinvent the wheel: the EU could set general rules per sector, existing schemes could then prove their compliance. Assessment tools should address the carbon balance at the farm level, recognising tools that comply with EU regulation and allow the use of existing databases e.g. the CAP system for land parcel identification. For forestry, databases and remote sensing exists but still needs a few years to become fully operational.

Martin Michelot (TIC Council): TIC Council is an international association for the certification sector. Terminology is key. Three points to be highlighted: 1) need for a solid accreditation system, level playing field – accreditation is a national competence. Certification bodies need to be accredited by national authorities according to a specific scope. Certification and accreditation bodies will need to know what standard (ISO 17029 or 17065) will be the basis for accreditation. Certification (e.g. of products) is normally for a limited time, after which recertification needs to take place. Quantity of carbon removed is largely a verification issue, which is a different activity. Details of validation, verification and certification can easily be specified by the scheme. Both approaches are possible but it needs to be applicable in all Member States. 2) Competence of the auditors: remote verification may be applied, digital solutions may help in reducing costs for the operator. Remote auditing already exists, e.g. for product safety certification. This also reduces the carbon footprint of the auditing work. Certification bodies need to be active guarantors of rules and procedures. 3) Liability is clearly outlined in certification schemes, when there is e.g. fraudulent activity the liability falls upon the certification body. Risk management is built into the applicable ISO standards.

Giulio Volpi stressed the importance of accreditation for the integrity of the overall system. One of the key challenges is the balance to be found between robustness, integrity and cost effectiveness. There will be a full-day workshop in September to further discuss on basis of more detailed work of Verta.

Discussion

Zero Emission Platform asked, since the certification schemes are critical for transparency and reliability, what happens if one of the schemes misbehaves. Is there a system in place to take corrective action, and how will this be detected? Giulio Volpi replied that there are rules in the CRCF article 13 and 14 – recognition is on a 5 year basis (as under RED) and there are reporting requirements - it is the role of the Commission to monitor. Norbert Schmidt added that the Commission can indeed take away the recognition, the same applies in other schemes.

Martin Cames asked what the experience is with potential perverse incentives to reduce the scrutiny since the operators are paying for the audit (related question via Slido: who is going to bear the costs for auditing). Simon Martel answered that in the Label Bas Carbone the validation is undertaken by a public body, hence it is paid through taxes. Norbert Schmidt added that it is common practice that the certification body is paid for by the economic operators. An alternative could be that the auditing fee is paid to the certification system, which is then distributed to the certification bodies. Martin Michelot mentioned that this system is already being applied by several schemes working on product sustainability.

Review of existing approaches on certification registries

Presentation by VERTA

Boris Lagadenov (Guidehouse) presented the review of existing approaches on certification registries. It is envisaged that within 4 years of entry into force a registry will be established by Commission, in the meantime the Commission adopts implementing acts to recognise existing registries. When looking at existing schemes, good examples were found particularly on interoperability (registries need to be interoperable). Generally annual fixed fees are applied, linked to the level of use. A thing to note is that the financing provisions need to establish how certification schemes will be financed. If the schemes do not have registries yet they need to establish them and ensure they are interoperable. Ultimately registries contribute to ensuring transparency, they hence have an essentially critical role in environmental integrity. The units will be issued by the certification registries, and at the later stage by the central EU registry. There are basically four options when establishing interoperable registries: 1) Link via transaction log: revert to the original registries established under the Kyoto protocol, taking a transaction log timing perspective. These would need to be developed in a fairly short period, existing registries should be linked to this log. This does not seem to be the most appropriate way forward. 2) Direct linking, similar to the Swiss and EU ETS registries, this follows the Kyoto protocol but since there is only bilateral linking, a real-time link does not exist. 3) Climate Action Data (CAD) trust: this is an open source metadata platform which is already active. Currently less than 10 registries are connected, but the idea is to have one place, one dashboard with the information coming from the different registries. Potentially there is a risk of duplication of work here, we expect to be able to answer more questions if we have a more clear idea on the end state of the CRCF registry. 4) Document based, such as the California cap and trade scheme – credits on voluntary market can be used to a certain percentage for the annual obligation.

Regarding interoperability, it was mentioned that the ultimate goal is to eliminate, ensure there is no double counting (double use/double claiming). For existing registries which are not interoperable, it will increase costs to make them interoperable. For smaller stakeholders especially, costs are an important element, we need to take that into account when developing new registries. The documentary linking method applied in California could be a solution for

a transitional period but should be linked to the overall architecture of the future CRCF Registry. In the best case scenario 2026 will mark the start of first activities in the EU registry. Units can be held and issued in the respective registries during the transition phase. Within existing registries, both units and CRCF units will be held, and need to consider a sort of tagging of the CRCF units so they can be distinguished from other types of units. There need to be clearly uniform registry fees once functioning, in the transition period through fee alignment, unless it is decided to keep this as a competing element. There need to be robust processes for documentation. Next step in the process will be to further review existing systems, conduct the evaluation of options during summer and discuss recommendations during the September meeting.

Nanna Kryger (DG Clima) indicates that experts' and panel views are requested on avoiding risk of double counting, how to organise interoperability until the central registry is there, and of course how to set up the EU registry.

Panel comments

Marianne Tikkanen (Puro.Earth) indicated that Puro Earth operates a standard and registry for carbon removals which is based in Finland but operates globally, with projects in 32 countries. She mentioned that the harmonisation that the EU is developing here is appreciated and similar effort are made by Puro.Earth. The registry as it is functioning today works with retirements: a claim when a buyer has used the credits, indicating the date of retirement. An example is provided of a retirement of 11 net tons, which is removed from the total – a unique identifier is used for traceability, indicating also the methodology (biochar in the example case), and who has used it: in this case PwC to offset company impact. It also contains a link to the project page with audit documentation. To maintain the system a lot of governance is needed, as well as a reliable technology platform. It is commended that the EU intends to build upon existing schemes, as a lot of effort has been invested already in developing and operate these. Clients need to estimate amount of credits needed, e.g. make a contract for five years, but they may under- or overestimate – they must be able to buy more or sell credits. There is hence a need to be able to trust the market, the majority of credits is not yet booked for, and make an informed investment decision. Investments can easily be in the range of millions or tens, even hundreds of millions, so not an easy decision to make.

Fiona MacIver-Jones (Gold Standard): Gold Standard started in 2006 with emission reductions rather than removals, hopefully increasing the focus on removals through the CRCF. Regarding double issuance (i.e. one tonne removal leads to two credits in different registries): operators have to agree that project is only registered with Gold Standard and will not be registered anywhere else. This will be confirmed in auditing of certification bodies, which will include an audit of information in our registry as compared to other registries. Basic information such as project location needs to be easily accessible to the auditor, who also must be able to delve into deeper layers. All documentation needs to be harmonised, comparable and accessible. Regarding double use (retirement of one credit but counted to two offsetting targets), this needs to be mitigated so that each credit is uniquely claimable – when a credit is retired it needs to be indicated who retired it and for what purpose it is retired. We can then check whether it is used appropriately. Regarding interoperability, we feel that in the transition period it would be best and most cost-effective to apply API (Application Programming Interface) software comparable to a flight comparison site: information from different databases is included in a centralised comparison site. Each registry should then have an API connection to this comparison site, which should include the functionality of

issuing and retiring the credits. Collating data can help us to prevent double issuance or double use.

Lukas May (Isometric) commented that with regard to the architecture, the EU registry would exist alongside current systems. This would require a set-up similar to centralised vs. private banks today: you can use your individual bank website for transfers while the central bank maintains a single version of the truth. In our case it would be the central registry that has the only version of the truth. This doesn't yet exist today. Efforts will need to be focused on the backend – the EU is not going to spend a lot of money on the interface. Current registries focus more on the frontend. Guidehouse did a good job in fleshing out the key issues: 2028 is a long time away, we need functionality in the meantime. Government IT projects tend to spend a lot of money without providing much in return, we would need a clear roadmap to avoid overspending. Efforts should focus on where the EU can bring added value as a central registry, and current schemes can continue doing what they are good at. We need a really transparent roadmap, to get it right roles must interact smoothly and IT systems need to be able to communicate. The main benefit of such a system would be that if there is one place where all the credits are stored you can better identify strange movements happening. Also, we must ensure that if individual systems go down, the credits that were issued are still stored centrally.

Questions/discussion

Sara Sijes (The Netherlands) asked what the effect is on national allocations, as in the example of Puro.Earth a Canadian buyer offsets emissions with French carbon credits. Marianne Tikkanen replied that the example was from the voluntary market. French officials can decide if biochar is included in the NDC. Lukas May added that carbon removals are generally not accounted for in the country contributions. **Denmark** added that corresponding adjustments are currently not allowed in NDC as these should be coupled with national inventories.

Fabian Levihn (Stockholm Exergi): indicated it is important to differentiate between the need of the buyer and use of the credits: that an international firm buys the credit doesn't mean that they will transfer it to the country where it is located.

Andrew Voysey (Climate Agriculture Alliance): pointed out that FarmVault also provides a solution for double issuance. In case of an application of a group of operators, it should be ensured that an individual farm cannot enrol in different schemes. FarmVault has been developed to prevent that.

Spain asked who is going to pay the certification fee, the Commission confirmed this is done by the operator. In addition, a remark was made on the transparency: it is important to include geographical explicit information – land is the distinguishing factor in this system. Fiona MacIver-Jones replied that the documentation on the registry includes this geographic specific information. would be included – re-certification

Wijnand Stoefs (Climate Watch): asked, since interoperability is complex, and setting up new registries is costly, whether it would be an option to wait for the new registry to become operational in 1.5-2 years. Annex 2a provides minimum information requirements, of which point h addresses the status of compliance and end use purpose – this can change, how do we update the registry afterwards? On the topic of corresponding adjustments: we do feel these

are needed: one unit should only be used once – registry needs to take this into account from the start (no double counting between voluntary and compliance registries).

Fiona MacIver-Jones replied that indeed the use case needs to be specified - final retirement is what needs to be checked, since that is where the claim is made. A guide for best practices is available, which can provide further clarity. On the topic of double use, it was mentioned that not everyone does this maliciously, in some cases just better guidance is needed.

Max DuBuisson (Type A Expert): expressed his concern about the complexity and costs, listening to the discussion and seeing the structures proposed. We can learn from the California cap and trade methodology, in that system there are three independent registries but centralised methodologies are applied, the units will show up in the compliance registry. Two important lessons: it provided a good natural experiment, the methodologies used came out of the voluntary market and had been in use for several years. After a few years you could see how costs went up and verification timelines got longer, in the end leading to operators leaving the programme for voluntary schemes, and this is system simpler than what we are looking at here. 2nd: information flow: implementation of projects requires constant and consistent guidance for the practitioners. When it is a centralised methodology it is going to be the EU's responsibility give consistent guidance. In the Californian example there was no efficient way of posing questions and getting feedback: I would urge the need for good guidance and flexibility of implementation to be woven into the fabric of the system.

Giulio Volpi (DG CLIMA) added that, as under the RED, central guidelines will become available, while there is room to manoeuvre for the schemes the need to implement the methodology to provide more technical guidance. An as much as possible harmonised certification methodology is required, guidance and training will need to be provided by the certification schemes. There is still this flexibility. The Commission will not recognise certification methodologies but will set up a harmonised certification methodologies at the EU level based on best practice. There was a question on slido regarding the future integration of carbon removals into the ETS: there is a review closed under the revised ETS that refers only to *permanent* carbon removals, and mentions inclusion in *a* ETS - not necessarily the current EU ETS. Under the CRCF, the EC will set-up an EU wide registry of carbon removal credits, taking into account the 2026 review. The Commission will still need to assess the pros and cons of a possible integration under an ETS.

Wrap-up and next steps

There will be a stakeholder event in September in which these elements will be discussed in further detail, based on more concrete material from the Verta project.

DAY 2: CARBON FARMING

Welcome and structure of the day

Chair: Valeria Forlin (DG CLIMA)

Valeria Forlin (DG CLIMA) informed the EG about the changes that were made in a co-decision process regarding the development of additional certification methodologies, also outside the scope of the LULUCF. This includes fertilizers, wherein the emission reduction can be translated into credits that go into the registry and can be either carbon removals from biomass or from soils. The European Parliament also wishes to include livestock activities for which the development of the certification methodology will be initiated, while waiting for an official decision by the EC by 2025. The minimum activity period for carbon farming will be 5 years and it will be incentivized to prolong the activity. Another important new element are mandatory co-benefits. Operators may use Land Parcel Identification System (LPIS) that is already available under the Common Agricultural Policy, operators do not need to feed information into two separate systems. The last meeting on Carbon Farming in June 2023 was used to take stock of the current information. An EU survey in May 2023 provided information on existing methodologies and led to a review that is available on the EC website. Subsequently, the (dis)advantages of each option were investigated with the assistance of focus group experts, who shared their expertise in four meetings, the agenda and minutes of which are available on Basecamp. The knowledge has been compiled into technical assessment papers (TAs) that will be discussed during this session. Online workshops on agri-food ETS, peatlands and quantification in the agriculture and forestry will be organized, in June, July and September 2024, respectively. The agendas and registration links will follow. Experts can sign up for the newsletter to stay updated. In October the next Expert Group meeting is planned, during which an advanced draft of the certification methodology for peatlands will be presented, as well as a TA for the certification methodology for fertilizer.

Scene setter: What's next for carbon farming in the EU?

Chair: Valeria Forlin (DG CLIMA)

Feedback: First Carbon Farming Summit by CREDIBLE, an EU Soil Mission initiative

Tristano Baccheti De Gregoris (SAE Innova) presented the outcomes of the First Carbon Farming Summit by CREDIBLE. The CREDIBLE project started in June 2023 and is mainly focused on knowledge dissemination by coordinating eleven technical focus groups that are structured by themes. The three main aspects, namely practices, standards and monitoring, generate outcomes that can be used to create trust in the carbon farming market. Currently, there is a tension between common rules of the EU and the flexibility that is needed by the region. Taking a reductionist approach may be counterproductive as practices may be different to compare across farms, while a prescriptive approach may be rejected by farmers. The potential of the individual is valuable as it shifts the attention from how to generate an impact to the actual impact via land use transformation. Farmer knowledge should be better integrated to ensure their ability to find the best method for drastic changes in farm system ecology and soil carbon removals, wherein early adapters should have access to loans and other benefits. Carbon price remains an issue, 100 Euro/ton/ha is hardly an incentive. However, carbon sequestration is currently a co-benefit for farmers, whereas social and ecological elements should be measured and rewarded as well. Key messages from the CREDIBLE focus groups include: CRCF should provide guidance to the voluntary carbon market, mechanisms for data sharing should be provided and quality control elements integrated, a clearly defined workflow for MRV solutions with Earth observation data and monitoring coverage improved, and finally,

prioritize resilience over yield optimisation for long-term food security. The next summit will take place in Dublin in March 2025.

Discussion

Wijnand Stoefs (Carbon Market Watch) shared his interest in the focus on land use transformation as an end goal and wondered where the price of the carbon credit is based on. **Tristano Baccheti De Gregoris (SAE Innova)** answered that this is the perception of farmers, who claim that 20-50 euros per ton/C/ha does not cover the associated effort.

Hans Joosten (University of Greifswald) wondered why they focus on practices for transformative change, when forbidding negative practices will lead to the same results. **Tristano Baccheti De Gregoris (SAE Innova)** answered that the focus is different and practice changes will lead to transformative change.

Gottlieb Basch (ECAF) commented that regenerative agriculture is the way forward to push ecosystem services as co-benefits. Carbon sequestration is only one co-benefit in a broader scope of relevant co-benefits, for instance soil erosion.

A comment from **Webex** explained that decisions and payments in ecoschemes are made on a yearly basis due to the annual nature of crop practices and calls for a system redesign. Each year, sustainable decisions (for social and environmental co-benefits) by farmers should bring the system from field level to landscape level and transformation.

Gabriel Moinet (WUR) indicated that a system redesign seems tremendously challenging and the first discussions in the CREDIBLE project show that operations are very dependent on context. **Tristano Baccheti De Gregoris (SAE Innova)** answered that environmental and social co-benefits should be included to increase the price and incentivize farmers.

Max DuBuisson (Indigo) pointed out that soil carbon is not permanent and that operators should be provided with a shorter term commitment. He agrees that co-benefits and carbon farming are an attractive combination. Regarding operational aspects, the MRV should enable the farmer to focus on what they do best.

Agriculture (agroforestry, soil organic carbon)

Chair: Valeria Forlin (DG CLIMA)

Valeria Forlin (DG CLIMA) introduced the next topics on the outcome of the TAs and that feedback on the TAs will be possible via an EU Survey after the EG meeting. Regarding activities and quantification, the co-legislators stressed the importance of on-site monitoring supported by remote sensing and/or modelling. A trade-off between certification costs and burden for reporting sustainability aspects is required.

Presentation: technical assessment paper by CRETA

Jan Peter Lesschen (CRETA) pointed out that the discussions with the focus groups (FG) took place before the provisional agreement and that the TAs will be adapted in the next steps this year. The results of the TA on agriculture are presented by him during three blocks based on combined Q.U.A.L.I.T.Y criteria's.

Results – Activities

Regarding activities, the FG discussions showed the following aspects: it is unclear if biochar (long-term removal) should be certified under carbon farming as was decided during the FG discussions or as permanent carbon removals, which makes sense with the provisional agreement; in either case, it is important to prevent double counting biochar under two methodologies. A criteria-based approach for the eligibility of activities appears favourable, as the effects may be region-specific. Finally, soil depth should be minimum 30 cm and deeper depths are optional.

Q&A – Activities

David Chiaramonti (Type A-expert) commented that biochar has many applications, including carbon farming and includes co-benefits against droughts and soil depletion. However, it is a permanent removal, whereas carbon farming is time limited.

Wijnand Stoefs (Carbon Market Watch) suggested to split biochar up into types depending on application and degree of permanence (low versus high).

Gottlieb Basch (ECAAF) shared his opinion that each exogenic carbon that competes with natural carbon sequestration in the soil should not be covered under carbon farming.

Lucia Perugini (EEA) suggested to include both soil organic carbon and above- and belowground biomass in case of agroforestry, wherein agroforestry could be treated as ‘perennial crops’. When several practices are applied, the co-benefits can add up which would increase the potential and leads to system transformation. **Valeria Forlin (DG CLIMA)** agreed that this would be a modular or criteria-based approach, also to be discussed during the session on industrial removals.

Marta Hernández de la Cruz (Spain) wondered what is meant by a ‘criteria-based approach’ and how this is preferred over a specific list of eligible practices. **Jan Peter Lesschen (CRETA)** explained that this has to be elaborated. **Valeria Forlin (DG CLIMA)** added that practices benefit if they comply with all the quality criteria, and a list may exclude and therefore miss out on new practices.

Sara Sijses (Netherlands) pointed out that agriculture includes different types of practices on different types of land and wondered if this should be specified. **Jan Peter Lesschen (CRETA)** explained that in this case, agriculture includes all practices on mineral soil, whereas agriculture on peatlands (organic soils) is a separate domain.

Ilaria Falconi (Italy) wondered whether injection of biochar and digestate belong in carbon farming. **Valeria Forlin (DG CLIMA)** explained that organic inputs can be part of the methodology if they comply with the criteria.

Results - Quantification

To quantify soil carbon stock changes, a hybrid approach, using measurements, modelling and remote sensing, is most appropriate and in line with the provisional agreement. A distinction between carbon removals and emission reductions is necessary, but needs further discussion. Indirect emissions are challenging and may be calculated using REDD implementing rules, but should not be made too complex. Regarding the quantification of statistical uncertainty, the ‘probability of exceedance approach’ can be used with a default factor unless the uncertainty may be proved to be lower (tiered approach).

Results – Baseline and additionality

The ambition is to have a standardized baseline, but it is uncertain if data are available. Therefore, the focus first could be on activity-specific baseline with a reference period of 3-5 years equivalent to crop rotation periods and specific rules for land use change. Regarding additionality, public co-funding should be allowed in addition to carbon removal certification. A financial additionality test is not deemed very useful for carbon farming but this needs to be elaborated further, including the administrative burden.

Q&A – Quantification, baseline and additionality

Andrew Voysey (Climate Agriculture Alliance) pointed out that the standard baseline comes down to 1) combinations of soil and climate conditions and 2) what are considered standard practices in specific regions. With central processing of data and methods by the EC and JRC, the outcome is a value within eligibility that would have to be accepted. He asked which type can be expected. **Valeria Forlin (DG CLIMA)** answered that it is still unclear, however it would be good to have a discussion on the options. The baseline should be calculated with the same model as used for quantification.

Simon Martel (I4CE) warned for a windfall effect with early movers, who become ‘common practice’ at a certain point leading to a disadvantage at a later stage. **Valeria Forlin (DG CLIMA)** answered that early movers would still be recognised, as practices that are only possible if there is some kind of financing should be rewarded until the activity becomes legally required.

Lucia Perugini (EEA) opted for the standard baseline to combine the use of default values as well as the methodology in case new data becomes available.

Hanna Winkler (IFOAM) asked about the alternative to ensure that early movers are not disadvantaged. **Valeria Forlin (DG CLIMA)** noted that the activity-specific baseline would benefit farmers on degraded land where much carbon buildup can take place.

Irene de Tovar (Copa Cogeca) asked if the emission factors for regions or activities are updated every five years. **Valeria Forlin (DG CLIMA)** answered that it is the standardised baseline that has a minimum update frequency of five years.

Martin Cames (Germany) commented that it is difficult to strike a balance between making quantification easier while preventing an overestimation of removals. A standardised baseline is stringent, which undermines environmental integrity and he proposed to postpone the use of standardised baselines.

Sylvain Delerce (Carbon Gap) remarked that the use of certification can go beyond compensation mechanisms and different use cases require different levels of quantification/MRV.

Matt Hornsby (Ireland) commented via Webex that the 3 to 5 year reference period may be too long for setting the baseline before starting with the carbon removal activities. Jan Peter Lesschen (CRETA) responded to use information from activities from previous years as it may be too difficult to get all the data.

Max DuBuisson (Indigo) enquired if the distinction between carbon removals and reductions would make the development of a standardised baseline more difficult. **Valeria Forlin (DG CLIMA)** explained that it is a clear requirement in the CRCF regulation. **Jan Peter Lesschen (CRETA)** noted that a single practice may induce reductions for one farmer and removals for another, with different prices.

Johann Zillner (RWA) informed that there is clear soil sampling data throughout Austria.

Wijnand Stoefs (Carbon Market Watch) asked for a clear definition of article 5.1b on additionality. As many organic farmers already apply these practices, additionality will be marginal and he urged to certify, quantify and reward projects that actually have impacts. **Valeria Forlin (DG CLIMA)** clarified that there is only a reward when the activity is beyond standard practice. The standard baseline is a proxy for the additionality test to make the administrative burden simpler for the farmer and to provide the financial push for conventional farmers.

Aaron Scheid (Ecologic Institute) wondered how public co-funding via other ecosystem services (subsidies) can be accounted for properly, knowing what comes from carbon farming and national co-funding. **Jan Peter Lesschen (CRETA)** explained that it would be a combination of private and public funding to share risks.

Hanna Winkler (IFOAM) pointed out that the emissions from synthetic fertilizer production are not considered in the equation, which means that the net carbon removal will be lower than currently calculated. **Jan Peter Lesschen (CRETA)** explained that this still needs to be elaborated.

Marta Hernández de la Cruz (Spain) aired her concern that organic fertilizer is considered a leakage and suggested to make a distinction in carbon removal quantification related to compost and manure.

Results – Liability and sustainability

The activity and monitoring period should be at least 5 years and may differ between carbon farming activities, wherein the minimum duration of the monitoring period is linked to the detection of effects of the activity. Liability mechanisms and incentives should ensure that a longer monitoring period is used and farmers continue to sign up for the activity period. The buffer approach is most useful with much experience in existing schemes. A combination with insurance products would be preferable, but not such product is yet available. Regarding sustainability there is a preference for a negative list of what could harm sustainability objectives. The provisional agreement states that practices should have co-benefits for biodiversity and land degradation. The negative list can be build upon the existing [IMAP database](#), wherein JRC already includes studies that quantify negative effects of carbon farming practices.

Q&A – Liability and sustainability

Andrew Voysey (CAA) wondered if a buffer pool could be used as an incentive to prolong monitoring after ending the activity and more importantly to continue the practice by farmers. Purchasers of credits have an interest and may also contribute to payment.

Gottlieb Basch (ECAAF) pointed out that perpetual monitoring is required but is not commercially possible and also wondered if insurance of a buffer would be possible as an incentive. **Valeria Forlin (DG CLIMA)** explained that a buffer is used for unintended reversal and monitoring needs to continue for the unit to remain valid, which creates an incentive for the operator to continue.

Irene de Tovar (Copa Cogeca) enquired how a ‘negative list of practices’ can co-exist with a criteria-based approach. **Jan Peter Lesschen (CRETA)** explained that (elements of) activities that are clearly negative for sustainability can be identified in co-existence with a criteria-based approach to assess additionality, but needs to be elaborated. **Valeria Forlin (DG CLIMA)** added that a positive list could include practices that are known to have positive impacts on biodiversity. **Lucia Perugini (EEA)** mentioned several examples of practices, such as the avoidance of using invasive species, which when incorporated in the methodology itself may have contradictory effects when not applied correctly, which would be avoided with the list and setting minimum criteria for sustainability.

Marina Vitullo (Italy) via Webex pointed out that the presented method to certify carbon removal is not transparent. Reporting and measurements are needed at farm level, wherein remote sensing would not say anything about carbon storage in the soil. There is need to manage these different aspects of the same activity. Finally, she urged to keep the point of view the same, instead of switching between the farmer and certification authority. **Valeria Forlin (DG CLIMA)** pointed out that that every actor in the system will have a different role but all need to operate within the same set of rules.

Gabriel Moinet (WUR) remarked that some farmers want to invest in quick carbon removals and others in co-benefits. Co-benefits should be rewarded to avoid investment in high carbon sequestering activities with trade-offs. He asked if different payment schemes could be developed for these target groups. **Valeria Forlin (DG CLIMA)** agreed that valuing and rewarding the co-benefits is important and that it is being investigated how to incorporate a premium for environmental benefits.

Aaron Scheid (Ecologic Institute) remarked that the focus group agreed that sustainability standards are essential for sustainable business models and suggested to turn co-benefits into core benefits. To spread the risk, the focus should lie on all sustainability aspects rather than only carbon, to ensure income for the farmer when one aspect of an activity fails. He suggested to create a specific focus group on sustainability.

Johann Zillner (RWA) notified that there is an Austrian tool to assess carbon storage and emission produced at farm level with scope 3 evaluation taking into account value chain impacts.

Valeria Forlin (DG CLIMA) concluded the session with the main findings: standardised baseline needs to be elaborated upon and suggestions are welcome; most experts appear in favour for a negative list for no-harm practices; the transition of the system is more important than the activity itself. Further comments can be provided via the EU Survey, which will be available after the meeting.

Finally, the experts were invited to share their opinion on the next steps via Slido:

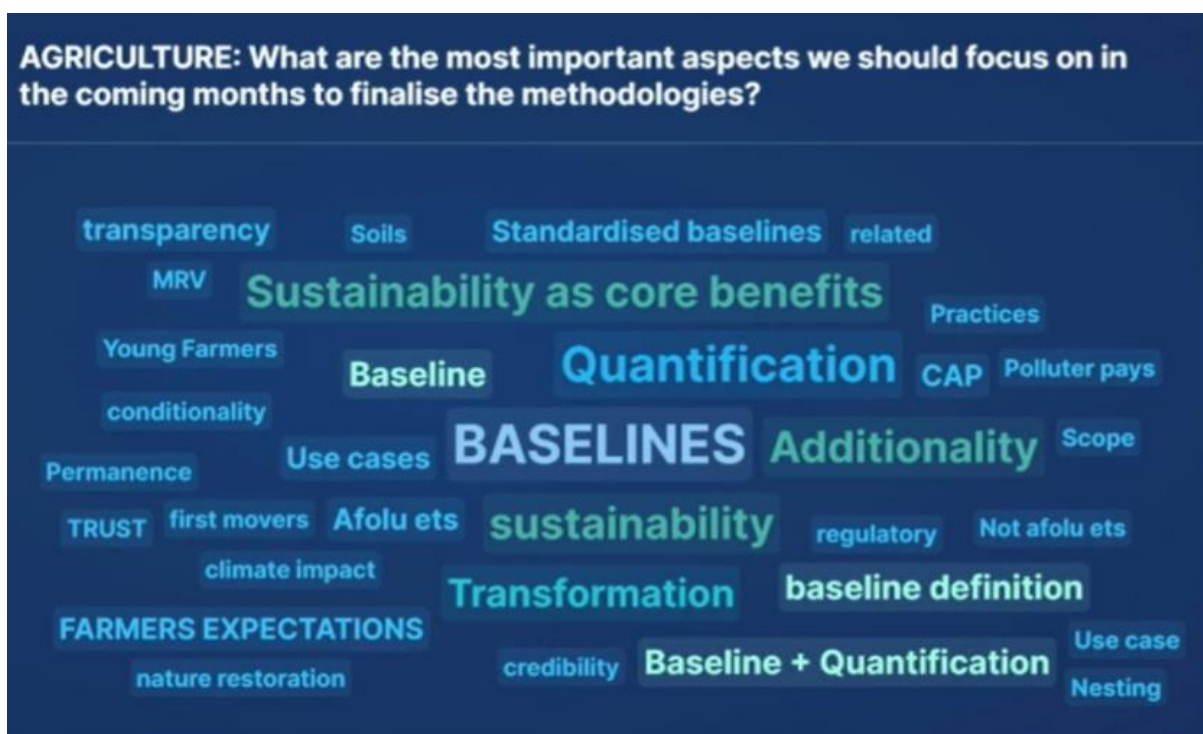


Figure 3 Slido response priorities agriculture

Peatlands

Chair: Lucia Causey-Hugecova (DG CLIMA)

Lucia Causey-Hugecova (DG CLIMA) introduced the topic and explained that degraded peatlands are a worldwide source of GHG. Peatland rewetting and restoration have wider ecosystem and public benefits, such as flood prevention, biodiversity and recreation. There are multiple certification schemes already in place which can help the development of the EU certification methodology, which will be based on soil emission reduction units in the case of peatland rewetting.

Presentation: technical assessment paper by CRETA

Jeroen Veraart (CRETA) explained that the discussions within the focus groups (FG) helped to shape the TAs. The results on peatlands are presented based on the Q.U.A.L.I.T.Y criteria.

Results – Carbon removal/reduction activities

The TAs currently includes a broad spectrum of possible rewetting activities such as rewetting for natural values, rewetting while maintaining existing agriculture use, rewetting for paludiculture and other uses.. The next steps in the development of the methodology is define more clearly the parameters of eligible activities (including full and/or partial rewetting and inclusion of paludiculture) For forestry on peatlands more guidance is needed as the scientific consensus is currently lacking.

Results – Quantification and baseline

The take-aways for quantification were to check for fluxes instead of stocks, combine different tools (e.g. proxies for hydrology or vegetation) and allow for flexibility in measurement techniques. To quantify the (in)direct emissions the existing IPCC guidelines or RED should be used. In terms of baselines, the option to combine standardised with activity based baseline has been discussed. For uncertainty it is good to spread the risk between

operators/farmers hence a preference for a landscape approach to rewetting. Rewetting induces CH₄ emissions, which is an uncertainty but these can be managed in the medium/long term. The next steps will focus on the development of a quantification approach that can be applied at EU level as well as further research into a standardised baseline for peatland rewetting.

Results – Additionality

There is currently no consensus on additionality tests when looking at the existing schemes. Some are of the opinion that rewetting is always additional, but additionality is uncertain if rewetting is obligatory because the peatland is in a nature reserve. The minimum activity period and monitoring period should be 10-20 years (in terms of the climate benefits of rewetting), although from a business perspective it should be shorter to incentivise the uptake. However, in order to deal with uncertainties of carbon dioxide (CO₂) and methane (CH₄) a longer period is preferred. Regarding reversals and liability, a collective buffer pool should be used. The next steps in the process will be focusing on developing the appropriate additionality test including looking at a “common practice” test, rewarding mechanisms, and a definition of a threshold for buffer pools.

Results – Sustainability

Actions that increase sustainability should be rewarded. Existing legislation should be used as a basis (e.g. Existing EU legislation such as Taxonomy or the EU Water Framework Directive), including for monitoring. Co-benefits that go beyond environmental sustainability should also be considered, quantified and rewarded.

Q&A – Carbon removal/reduction activities

Lucia Causey-Hugecova (DG CLIMA) asked the member states (MS) for their perspective on their scheme developments in relation to the results of the TA.

Lotta Heikonen (Finland) explained that they have a national climate plan for the LULUCF sector and urged to consider different measures. Finland has a lot of peatland forest, wherein the objective is to prevent CO₂ emissions by means of an area-specific approach, which requires expertise. Afforestation of former peat winning areas may fall under peatlands or forestry, depending on soil type and location. In Finland there are also competitive tenders for peatland restoration.

Andreas Tauscher (Germany) remarked that paludiculture can only take place on rewetted peatland, of which the products can be used in construction and wondered if this should fall under Carbon Storage in Products. **Valeria Forlin (DG CLIMA)** answered that it could indeed fall under carbon storage in products which is will be covered under a different methodology.

Einars Mednis (Latvia) commented that emission factors differ between soils and MS, as well as organic soil definitions, even in national inventories and urged to solve this. **Hans Joosten (University of Greifswald)** responded that for historical reasons there is no harmonised definition that is accepted by all countries. Definitions were taken from soil science, influenced by agriculture, namely the plow depth. Also, the boundary between organic and mineral soils is defined by the percentage of organic matter and emission rates. Harmonization of the definitions of all countries requires a reclassification of the soils of the country. Therefore IPCC allows own definitions as long as it is correctly applied over the

country and over time. However, the CRCF should define how to handle these difference. **Lucia Causey-Hugecova (DG CLIMA)** summarized that it's a balance between accuracy and workability when developing the EU methodology.

Andreas Tauscher (Germany) warned for the risk of double counting in case of paludiculture products such as insulation. **Valeria Forlin (DG CLIMA)** reminded that the session of carbon storage in products will be held the next day, but stressed that the risk of double counting is limited.

Aaron Scheid (Ecologic Institute) pointed out that rewetting is a system approach on landscape level, likely to be additional and have sustainability aspects, and wondered how current agricultural use could be maintained as well as the evidence of emissions with forestry on peatlands. He added that Ecologic Institute is working on a paper about quantifying ecosystem services. **Jeroen Veraart (CRETA)** explained that maintaining (extensive) agricultural land use also while rewetting can also lead to emission reductions, although more analysis is needed. **Lucia Causey-Hugecova (DG CLIMA)** clarified that the work on the EU methodology starts with rewetting and restoration and further modules can then be built once we gather knowledge and evidence for other activities.

Fabian Levihn (Stockholm Exergi) added that there are many activities with forest on peatlands in Sweden.

Andreas Tauscher (Germany) asked the EC if the CRCF can be additional to nature restoration. **Valeria Forlin (DG CLIMA)** answered that it needs to be additional at operator level.

Nora Mitterböck (Austria) asked the response of the focus group on the question 'Is it always additional if there is a statutory obligation to do so?' as the regulation states that it should go beyond national and EU statutory requirements. **Jeroen Veraart (CRETA)** answered that the focus group discussed that it is not additional when obligatory. **Lucia Causey-Hugecova (DG CLIMA)** added that revisions and changes legislations will need to be taken account of when designing the additionality rules.

Eeva Stina Tuittila (Forestry Focus Group / Finland) explained that afforestation on peatlands is not a good solution in the long-term, as fertilization may increase the carbon sink through faster growth of trees but also it has negative implications on harvesting levels or continuing drainage of soils.

Q&A – Quantification

Einars Mednis (Latvia) commented that flux measurements in projects are too expensive and can be imprecise. Instead, he urged to create models to measure water table levels.

Matt Hornsby (Ireland) pointed out that there are degrees to implement an activity, for instance various water table levels, so additionality may be seen as cumulative. Further rewetting can be incentivized by the CRCF.

Marina Vitullo (Italy) wondered if the data collected under the IPCC wetland supplement could be use as a valuable element to take into account. **Lucia Causey-Hugecova (DG CLIMA)** pointed out that the EC does not want to reinvent the wheel but rather first focus on

available data and how to combine it. Finland already has 40 types of peat to navigate and combine with on-site measurements and models. There are existing schemes that quantify and issue credits. **Jeroen Veraart (CRETA)** added that the methodology should align with the LULUCF regulation, which also includes the objective to increase the tier level. **Marina Vitullo (Italy)** relayed that the IPCC already includes Tier 3.

Ed Salter (IUCN UK Peatland Code) explained that they use emission factors based on pre-restoration emissions for different peatland types with an emission calculator. The emissions are monitored by independent verification bodies every 5 years and every 10 years) for two validation series.

Andreas Tauscher (Germany) strongly supported Marina Vitullo (Italy) to include the IPCC guidelines in addition to the LULUCF guidelines.

Q&A – Sustainability and storage

Lucia Causey-Hugecova (DG CLIMA) asked what is the best way to perform monitoring, storage and sustainability.

Garance Wood (UK Peatland Code) explained that they are developing a method to quantify biodiversity with a unique metric in peatlands using ground data and remote sensing. Although the remote sensing data is currently not robust enough they are actively exploring this as an option. For biodiversity there already are quite high-level ways of using technology to additionally help with ground truthing. They hope to setup MRV that is able to integrate with future versions of the code in 2025 with an open-source data standard crediting model called ‘Operation Wallacea’, which will be adapted to UK woodlands and peatlands. **Lucia Causey-Hugecova (DG CLIMA)** asked how UK Peatland Code currently rewards co-benefits and if the project can gain additional finance when going the extra mile for biodiversity and/or ecosystem benefits. **Garance Wood (UK Peatland Code)** replied that currently there is no reward for co-benefits, but within the code they have ‘bundled’ benefits with the carbon unit that is sold. By doing peatland restoration, it is assumed to enhance the habitat and water biodiversity. However, it is not quantified, hence the development of the biodiversity metric. With buyers they want to find out how to quantify biodiversity in an auditable robust way.

Hans Joosten (University of Greifswald) explained that Northern Germany has its own carbon credit system ‘MoorFutures’, which includes co-benefits that are quantified using a default method. Buyers obtain information that the projects have co-benefits, which are standardly rewarded with the credits.

Q&A – Scalability

Lucia Causey-Hugecova (DG CLIMA) posed the question how to scale up these activities for peatlands and how to ensure a large-scale and accessible uptake while keeping the administrative burden low.

Einars Mednis (Latvia) suggested to raise more money to finance the upscale.

Matt Hornsby (Ireland) explained that one of the main issues on uptake (in Ireland) is the mobilisation of and collaboration between large number of tiny land holdings and farmers that

constitute the organic soils, wherein the grouping of operators will be an important point. Regarding co-benefits, it would be straightforward for operators to include as many as possible.

Jepp Brandtoft (Denmark) remarked that credibility, reliability and scalability are equally important. He urged to first focus on and exhaust the option of nature transformation and full rewetting before proceeding to the combination with agriculture as he does not see how agriculture can align with biodiversity co-benefits.

Aaron Scheid (Ecologic Institute) wondered how to reduce the administrative burden within the CRCF, as it appears already high for rewetting in many MS even before the activity has started. He called for a narrative for farmers for why they should rewet and what happens to their production, with the focus on paludiculture as a viable substitute. This may also work well with the narrative for scalability.

Hans Joosten (University of Greifswald) stated that to scale up with low costs, the solution is to create a demand for paludiculture products. The biggest emitters are intensively used agricultural soils, while a demand for paludiculture must be created. In Germany, it has been calculated that for replacing 1% of the paper production with paludiculture raw materials, 10% of all drained wetlands under agriculture can be rewetted. When including construction panels, by replacing 1-5% of raw materials with paludiculture biomass, 1 million hectares of peatlands can be rewetted. Farmers can get money for emission reductions and also sell their product. Buying products with negative emissions (insets) means a company does not need to buy offsets.

Marta Hernández de la Cruz (Spain) wondered if the methodology could also be used for rice crops or wetlands to make it useful for Southern Europe, as they do not have an issue with peat wetlands. **Lucia Causey-Hugecova (DG CLIMA)** acknowledged that peatland is indeed a subset of a wider wetland category. Currently, the focus lies on peatlands, but the idea is to build further upon it.

Garance Wood (UK Peatland Code) offered several tips that may help upscaling, namely 1) reliable and consistent finance to support projects, 2) grouping projects/operators to save costs (not in terms of validation and verification costs as these are independent businesses that set their own costs), 3) technology advancements to help reduce costs and improve scale, and 4) training of peatland experts for ground truthing.

Eric Fee (Germany) agreed with Garance's tips and added that Germany has public funding 3.5 billion Euros until 2027 to help scale up activities through an action plan on nature-based solution for climate and biodiversity, including protection and rewetting of peatlands (including paludiculture and forestry) to reduce CO₂ emissions by 5 million tons. Federal and state partners also provide training and consultation for landowners. Public funding can support and provide synergy with the CRCF.

Ed Salter (IUCN UK Peatland Code) commented that the code aims to keep the administration costs low and project developers involved to enable scalability. They charge a levy on the carbon units that in essence only comes to the cost of the owner of the project once they are in a position to sell some of their units.

Garance Wood (UK Peatland Code) explained that they aim to include paludiculture in future versions, but there is urgent need for data, such as water table depths, site history, establishment of crops and GHG fluxes before and after harvest. The IUCN peat program, which is separate from the code, made a list of principles for paludiculture, which include strategic planning (prioritize rewetting), engaging with water companies, arrange public benefits, long-term vision regarding biodiversity.

Lucia Causey-Hugecova (DG CLIMA) concluded the session with an outlook for peatlands in the coming months, highlighting that rewetting and restoration are prioritized, including paludiculture and how to create demand and incentives. Existing schemes are used as a basis, wherein the best practices for workability, transparency and low costs for upscaling are used regarding quantification and sustainability. It needs to be attractive for smaller holders and farms. All of these issues will be further discussed an online workshop on peatlands in July.

Hans Joosten (University of Greifswald) wondered what will be done with the input of the session. **Valeria Forlin (DG CLIMA)** explained that the TAs will not be updated, but rather the input is used for the next steps. Substantial comments will be published as an annex. **Hans Joosten (University of Greifswald)** remarked that only reductions were discussed in this session, not removals. Reductions are inherently permanent so there is no liability for reversal, but for removals there is a risk of reversal that needs to be taken into account.

Finally, the participants on Slido were invited to share their opinion on the next steps via Mentimeter (see figure below).

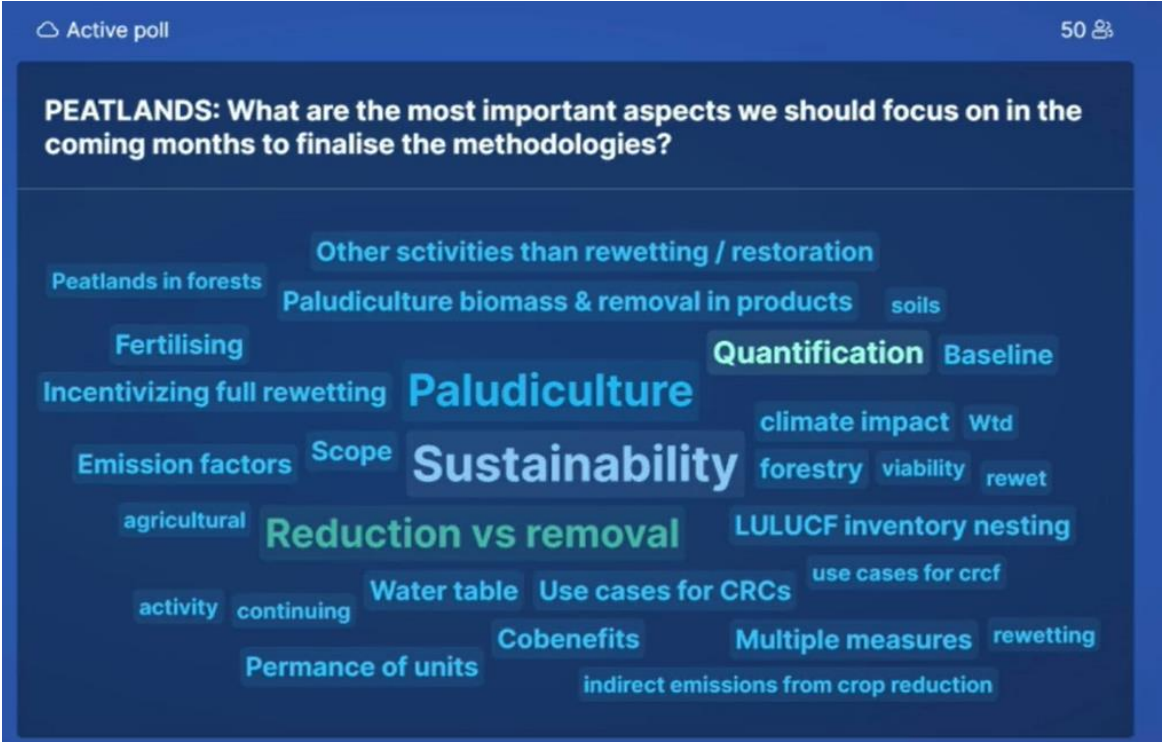


Figure 4 Slido response priorities peatlands

Forestry

Chair: Frida Sund Falkevik (DG CLIMA)

Frida Sund Falkevik (DG CLIMA) introduced the topic and emphasized that the session is limited to forestry. Carbon storage in products is not to be discussed, as this is a separate session for the next day.

Presentation: technical assessment paper by CRETA

Sven van Baren (CRETA) highlighted the main findings of the TA on forestry, which included that LULUCF allows each MS to have its own forest definition, while FAO has a general definition. The objective within CRCF is to align with existing definitions of forestry in other policies. Regarding carbon pools, the recommendation was to include all pools (soil and biomass) (while being mindful of the impact of operational cost of the scheme), and to include different forestry activities such as afforestation, reforestation and forest management.

Q&A – Definition and activities

Lotta Heikonen (Finland) wondered if it is necessary to discuss definitions during this session.

Asger Olesen (Denmark) agreed that nesting is important for forest definition, as one definition at EU level has to be very general to cover all MS definitions. Furthermore, afforestation and forest management are key activities, but for nature restoration there might not be the need for long-term monitoring, as this would be kept in nature.

Hans Joosten (University of Greifswald) commented that a clear hierarchy would be needed to define the boundaries of the different carbon farming activities given the potential for overlaps. **Frida Sund Falkevik (DG CLIMA)** agreed that the boundaries appear fluid, but could be linked to the use of modules.

Simon Martel (I4CE) remarked that depending on the activity, certain carbon pools might be neglected as the MRV cost could be too high. Following the deminis rule, if the activity or carbon pool contributes less than 5%, it could be neglected.

Lotta Heikonen (Finland) commented that the definition should align with the LULUCF (and subsequently the national greenhouse inventories). Regarding activities, re- and afforestation are related to the start of the rotation, whereas improved management refers to all actions during the rotation. Wondered how to deal with forestry on peatland.

Wijnand Stoefs (Carbon Market Watch) asked if conservation of forest is considered in the scope of CRCF and if all soil carbon pools are included. **Sven van Baren (CRETA)** answered that in principle all soil carbon pools could be included and noted challenges with including forest conservation. Instead, a negative list of activities for forestry could be used to prevent negative impacts. **Frida Sund Falkevik (DG CLIMA)** added that in some countries reforestation is required by law in conjunction with harvesting, which would be relevant to consider under additionality.

Marta Hernández de la Cruz (Spain) urged to keep the definition simple and linked to LULUCF and make it easy for operators (e.g. not include smaller carbon pools such as litter).

An online question on **Slido** enquired where harvested wood products (HWP) fit. **Frida Sund Falkevik (DG CLIMA)** answered that this falls under carbon storage in products.

Hardo Becker (ESFA) wondered what is meant by improved forest management and about management to improve the quality of the tree for better use for products. **Sven van Baren (CRETA)** explained that it was not discussed in detail and clear criteria instead of a list of practices is envisaged.

Samy Porteron (ICOS) remarked that dead wood is a small pool, but important for biodiversity and wondered about the duration of the period for reforestation or afforestation, wherein remote sensing data should be sufficiently available to detect this. **Sven van Baren (CRETA)** confirmed that dead wood is taken into account for the purpose of carbon in some schemes, but was also important as an indicator for biodiversity.

Q&A – Quantification

Asger Olesen (Denmark) commented that the standardised baseline should be aligned with the national GHG inventories (and forest reference level (FRL)) as it should count to the EU nationally determined contributions (NDC). The discussion on FRL was difficult as it assumed the type of management to be used. If this would be included strongly in the standardised baseline, probably only afforestation would be used as a cost-effective driver for certification. He further enquired if indirect removals would be included like indirect emissions. **Sven van Baren (CRETA)** answered that it has not been discussed yet, but should have the same relevance as indirect land use change.

Hans Joosten (University of Greifswald) wondered if the different carbon farming activities (forestry, agriculture, peatland) could have a different conceptual baseline. **Frida Sund Falkevik (DG CLIMA)** answered that as rules will be set in the methodologies they can be different, although harmonisation would be preferred. **Hans Joosten (University of Greifswald)** added that the LULUCF calculations have not been accepted as reliable due to the regular changing of baselines in the forest sector and stressed to keep that in mind when drafting the methodology for forestry.

Sarah Sijes (Netherlands) remarked that there is no clear definition of co-funding. **Frida Sund Falkevik (DG CLIMA)** explained that it relates to finding the optimal combination of public and private funding, which was in many cases also linked to regulatory additionality.

Wijnand Stoefs (Carbon Market Watch) commented that indirect removals sound more like avoided emissions and deforestation, and therefore this concept should be carefully handled.

Michal Vanco (Slovakia) pointed out that reforestation is obligatory in many countries, so it should not be eligible and asked if natural extension of forest on abandoned land would be considered as afforestation. **Sven van Baren (CRETA)** answered that it could be considered if it is considered as managed land, as it would be in line with the national inventory. **Frida Sund Falkevik (DG CLIMA)** confirmed that replanting after harvesting was a legal requirement in some Member States.

Matt Hornsby (Ireland) commented that in Ireland reforestation would be considered as forest management, as it is an obligation and already subsidised.

Lucia Perugini (EEA) pointed out that for afforestation the baseline might also be derived from the national inventory, e.g. the rate of current afforestation. Scaling the national forest reference level to local scale might be complicated.

Marta Hernández de la Cruz (Spain) mentioned that reforestation after a wildfire would be seen as reforestation and not forest management. In addition, co-financing is not a problem for CAP, then it should not be for CRCF either.

Q&A – Storage and sustainability

Daniel Komlós (CEPF) considered the activity period of minimum of 5 years rather short, but wondered how long should it be and how to deal with the rule that only ex-post units are allowed considering the long lead-times in the forest sector. **Frida Sund Falkevik (DG CLIMA)** explained that the monitoring and financing could be part of the contractual arrangement between foresters and purchasing parties, while not explicitly included in the regulation.

Asger Olesen (Denmark) asked if a MS having a spatially explicit Tier3 approach would comply with the monitoring requirements and should it not have additional monitoring.

Simon Martel (I4CE) mentioned that a monitoring frequency for forests longer than every 5 years seems better, depending on the forest type. The frequency of sampling within the monitoring period was also a relevant aspect to consider. **Frida Sund Falkevik (DG CLIMA)** replied that this is possible, as current approaches use a longer monitoring period. **Sven van Baren (CRETA)** added that regarding frequency remote sensing could be used instead of measurements. However, this was not discussed in the FG.

Hans Joosten (University of Greifswald) commented that following the principles of the CRCF, all carbon is reversed after the monitoring period.

Frida Sund Falkevik (DG CLIMA) clarified that after the monitoring period all the stored carbon is considered released back to the atmosphere if there is no recertification.

Marta Hernández de la Cruz (Spain) remarked that the regulation only mentions the monitoring period, but not the frequency of monitoring. This should be clarified in the methodology. Monitoring should focus on the short-term, mainly on whether the forest is still there. It should also be taken into consideration that the forest has to be planted and has to include a management plan to ensure the co-benefits.

Wijnand Stoefs (Carbon Market Watch) highlighted that buffer mechanisms do not always work, e.g. in California the buffer was already lost after two years following forest fires. **Frida Sund Falkevik (DG CLIMA)** responded that other mechanisms were discussed as well, such as insurance schemes, and other examples were welcome.

Lotta Heikonen (Finland) urged to rely on existing indicators from the Forest Stewardship Council (FSC) regarding sustainability requirements.

Matt Hornsby (Ireland) warned to be careful on the framing of the expiration of the certified carbon removals after the monitoring as it might lead to negative impacts.

Sydney Vennin (FERN) asked what safeguards there will be to prevent the destruction of existing forest if reforestation would be allowed for carbon certification.

Finally, the participants on Slido were invited to share their opinion on the next steps via Mentimeter (see Figure 5).

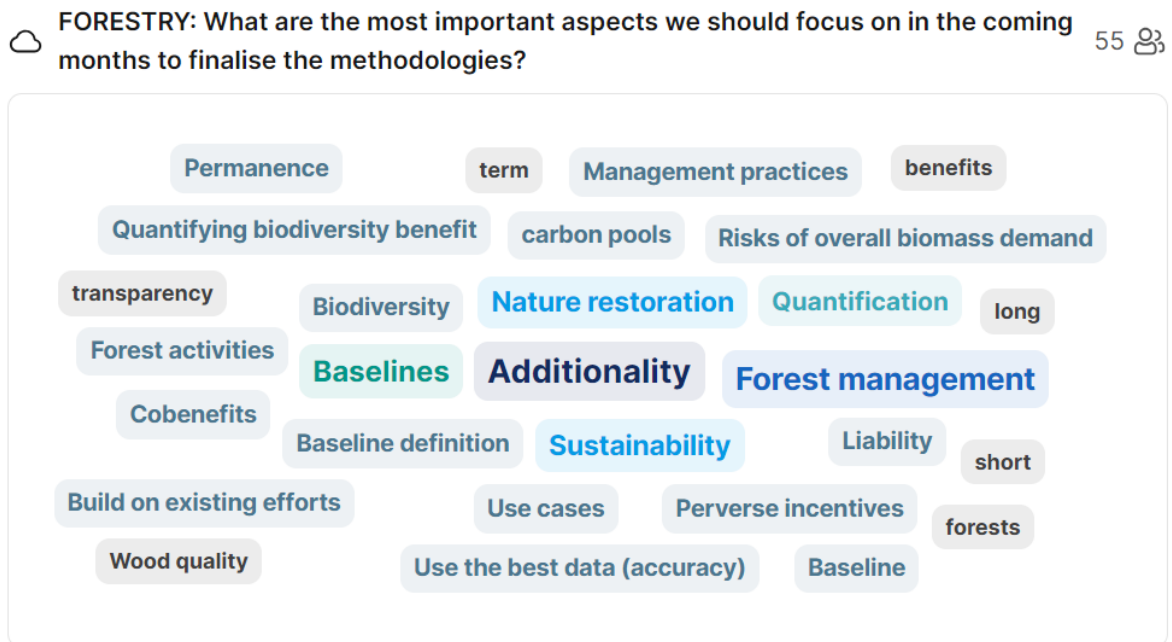


Figure 5 Slido response priorities forests

Round-up and next steps

On the 9th of July, an online peatland workshop will be organised as well as a quantification workshop in September 2024.

DAY 3: PERMANENT CARBON REMOVALS & CARBON STORAGE IN PRODUCTS

Chair: Fabien Ramos (DG CLIMA)

Welcome and structure of the day

Fabien Ramos (DG CLIMA) highlighted the definition and units of permanent carbon removals and the CRCF specifications on the QU.A.L.I.TY criteria of carbon removals, prior to explaining the objectives of day 3.

Wijnand Stoefs (Carbon Market Watch) pointed out the challenges regarding the electricity grid discount. **Fabien Ramos (DG CLIMA)** replied that this will be discussed in the presentation regarding the TA by ICF.

Kirsten Jordal (Zero Emissions Platform) highlighted the need for a roadmap setting the milestones for other technologies, which is critical for market certainty. **Fabien Ramos (DG CLIMA)** pointed to the module structure that will be created and presented later today.

BECCS & DACCS

Presentation: technical assessment paper by ICF

Chris Malins (Cerulogy) explained that the TA identifies a number of issues to be considered in the development of EU certification methodologies for permanent carbon removals, and confirms that the development of certification methodologies for DACCS and Bio-CCS are in line with the CCS Directive. Furthermore, a modular approach will be adopted to developing certification methodologies, with the priority modules being capture (DAC and biogenic), transport, and geological CO₂ storage (as per CCS Directive). In the short-term, methodologies for the ‘mineralisation of CO₂ in construction material’ and ‘biochar production and use’ will also be developed.

Discussion: Deep dive on key questions

Quantification:

Wijnand Stoefs (Carbon Market Watch) asked why capital emissions would be excluded and how materiality would be assessed. Even in case of a retrofit, these emissions would be significant and could be accounted. **Chris Malins (Cerulogy)** explained that several other EU LCA frameworks already exclude these emissions. It is the team’s expectation that when capital emissions are amortised over the lifetime of a plant, they are likely to be small in many cases. It is important to set an appropriate level for materiality thresholds. **Wijnand Stoefs (Carbon Market Watch)** pointed out that the CRCF intends to include all lifecycle emissions and by treating these emissions and other things as immaterial, a slippery slope is created. **Chris Malins (Cerulogy)** responded that some sort of materiality screening is appropriate and every LCA has some implied materiality screening to allow very insignificant terms to be excluded. Experts were invited to share any examples that would show capital emissions that were sufficiently high to need to be considered.

Mark Preston Aragonès (Bellona Europe) wondered how to account for infrastructure emissions. **Chris Malins (Cerulogy)** responded that it is expected that, e.g. for a CO₂ pipeline, once emissions are amortised, capital emissions would be quite low and may fall below a materiality threshold. His team will look to find examples in the literature and in addition noted that the Innovation Fund does not require capital emissions to be included for CO₂ transport.

Eli Mitchell Larson (Carbon Gap) suggested to have a universal materiality test for these technologies across the CRCF. There may be a case to exclude capital emissions that are already accounted under another EU framework such as ETS. **Chris Malins (Cerulogy)** answered that it is likely to set some materiality threshold (similar to the Innovation Fund) for non-capital emissions with a general principle. However, it is uncertain whether this will be treated the same for capital and non-capital emissions and whether a general principle will be framed across methodologies or that the materiality conditions will be restated in each methodology. Caution is required that setting a threshold does not create an incentive to decompose emissions into many small individual contributions below the threshold.

Robert Höglund (type A expert) wondered whether electricity from nuclear could be treated as zero/low carbon, as the need to use the grid may prevent DAC projects to be approved. **Chris Malins (Cerulogy)** explained that there are rules in the RFNBO GHG calculation delegated act that address the treatment of electricity from nuclear sources, in which nuclear is treated as low carbon. However, clarification is needed on how the RFNBO rules would work in this regard.

Fabian Levihn (Stockholm Exergi) supported the notion to exclude capital emissions and agreed on the importance of setting boundaries in LCAs as well as the inclusion or exclusion of infrastructure. He explained the approach for BECCS plants in Sweden, where, at the combined heat and power (CHP) plant, power output will be reduced by adding the capture installation, which on the other hand allows for heat to be recaptured. Displacement effects can be both positive and negative, and CHP with CCS can be made more efficient by building it as a heat pump for district heating. **Chris Malins (Cerulogy)** agreed with the principle that recovery of heat should be recognised in the methodology.

Mark Preston Aragonès (Bellona Europe) said he would discourage allowing for a transitional treatment (monthly rather than hourly) in the context of the RFNBO framework, and would recommend the post-transitional requirements. **Chris Malins (Cerulogy)** answered that regarding this temporal correlation, those provisions as well as grandfathering need to be checked.

Wijnand Stoefs (Carbon Market Watch) warned that if the choice to use the RFNBO treatment or the grid average is optional, this will become a gaming exercise. Knowing there will be displacement effects, one can take the renewable energy that would be used for other purposes. **Chris Malins (Cerulogy)** clarified that the RFNBO framework is the existing EU framework that seeks to address additional renewable electricity and displacement effects from electricity consumption. The team is reluctant to develop a new way to account for this, but are open to suggestions.

A question from the **SLIDO** platform inquired if the methodology would be informed by industry LCA norms such as ISO 14040, if emissions from solvent consumption would be considered, and if biogenic CO₂ from fermentation would be an eligible CO₂ source. **Fabien Ramos (DG CLIMA)** and **Chris Malins (Cerulogy)** confirmed that this is potentially eligible. **Chris Malins (Cerulogy)** added that, in response to an online question on carcinogenicity, he would expect that those types of health issues are regulated outside the CRCF.

Fabian Levihn (Stockholm Exergi) and **Frauke Kracke (Frontier)** noted that it is important to include the pulp and paper sector in the Bio-CCS methodology.

Kathy Fallon (CATF) enquired about the option to have a narrative confirmation for the uncertainty requirement. **Chris Malins (Cerulogy)** explained that this approach and its rules would have to be substantiated. The project would have to convince a verifier that the calculation is conservative. Qualitative assessments rely on the judgment of verifiers, but the methodology should give instructions on the assessment.

Kirsten Jordal (Zero Emissions Platform) pointed out that there must be room for regulation improvements as new research becomes available. When biochar is used in metal production instead of fossil carbon, the output stream is part-biogenic, which could then be captured. Although using ion waste for energy and CCS is still underdeveloped, this could be included as well. If the initial methodology is limited, a timeline is needed to add further biogenic CO₂ sources. **David Chiaramonti (Italy)** informed that he coordinates three projects on biochar and steel and can provide information and data if necessary. **Chris Malins (Cerulogy)** invited the experts in the room to share any information on biogenic carbon sources that should be known.

Martin Pigeon (Fern) commented that increasing competition for biomass resources should be anticipated, as well as for storage sites, with geological storage in short supply. It has been suggested that carbon storage capacity should be kept for the sectors most in need – the power sector has good alternative to bioenergy. On uncertainty, correct accounting of biomass emissions requires the consideration of foregone sequestration (carbon opportunity cost), but this is not reflected in the TA and requires consideration of harvesting emissions (e.g. from clear cutting). Emissions from harvesting could be high and could incentivise deforestation. **Fabien Ramos (DG CLIMA)** responded that there is an ongoing discussion on storage aspects, wherein the net zero industry act will seek to increase storage availability. In case issues are anticipated regarding the 2030 availability due to the new legislation, the EC will adapt.

Fabian Levihn (Stockholm Exergi) remarked that the CRCF states that bioenergy plants should not be allowed to expand the consumption of biomass beyond what is needed for the carbon capture unit and wondered what this means for new plants and how this will be treated in the delegated act.

Kirsten Jordal (Zero Emissions Platform) added that currently 1,5 Mt of storage per year is being built in Norway with the hope to expand to 5 Mt. Storage and exploration licenses keep being awarded in Norway and also in other countries. 50 Mt by 2030 sounds achievable, although most of that capacity will be used for fossil CO₂.

Mark Preston Aragonès (Bellona Europe) warned that the uncertainty in the capture process is low downstream, but for bio-CCS the upstream uncertainty is high. **Chris Malins (Cerulogy)** explained that for emissions from biomass production, harvesting, they expect to follow the lifecycle principle from the Renewable Energy Directive (RED). There are various issues around foregone sequestration and opportunity cost for biomass use, but in this process they expect to follow the lead of the RED, including treating biogenic CO₂ emissions as zero at the source. Carbon removal operators would not be asked for a detailed foregone sequestration assessment, as it is understood that there is a desire on the part of the co-legislators not to preclude capture from bioenergy facilities supported under the RED. In case of disagreement, he urges to give feedback in writing.

Chris Malins (Cerulogy) explained that regarding allocation and how to treat carbon capture as part of a combined system, it is necessary to come to a view on whether the carbon capture unit is treated as an add-on, i.e. where emissions from bio production and harvesting should be allocated. If so, the biomass production emissions would be allocated to the energy generation, with the CCS part of the project assessed by considering displacement of energy output.

Fabien Ramos (DG CLIMA) concluded that the EC will take into account the points raised on materiality and capital emissions. On the electricity emissions and grid, the EC is considering aligning with the RFNBO framework, and also how to account for a direct connection to renewable facilities. It should be noted that the EC expects to keep improving these methodologies moving forward. As regards to biomass accounting, the place for this to be reviewed is the Renewable Energy Directive, as a differentiated framework discouraging carbon capture from bioenergy plants is undesirable.

Fabian Levihn (Stockholm Exergi) agreed that renewals should not be limited and noted the potentially long lifespan of BioCCS projects. **Chris Malins (Cerulogy)** concluded that there appears to be agreement in the room on not setting a limit on the number of renewals.

Kathy Fallon (CATF) noted that many carbon removals in the US are currently generated from ethanol production. Setting boundaries needs to be done carefully to avoid double-counting. CCS needs to be incentivised while being careful of allowing facilities that have net emissions to sell removals credits. **Chris Malins (Cerulogy)** responded that at least in the first version of the methodology, they expect to treat the biogenic CO₂ as zero emissions by hypothesis, therefore capture from ethanol plants will be treated as removals without reference to whether the whole system could still be a net emitter. However, it might be considered a form of double counting to have the ethanol plants claiming benefits in different regulations, e.g. under both CRCF and RED. **Fabien Ramos (DG CLIMA)** promised to look into these implications and highlighted the provisional clause in the agreement, wherein the potential effect of the certification framework in the total use of biomass in Europe needs to be assessed.

Wijnand Stoefs (Carbon Market Watch) wondered why corporate scopes 1, 2 and 3 as a reporting element are considered when the UNFCCC scopes may be more interesting. Boundaries should be set carefully, as it is not CCS but the growth of biomass that removes CO₂. Safeguards are, therefore, needed to ensure that biomass regrowth matches biomass use. **Martin Pigeon (Fern)** agreed that there is a risk of transferring carbon from the biomass sink to the geological sphere, however, carbon removals should come from the atmosphere, not from biomass. Following the RED rules creates the risk of not delivering carbon removals at all. The TA recognises that the timing of CO₂ reductions depends on the harvesting details – it is essential to distinguish between biomass feedstocks and the most damaging biomass feedstock should be avoided. There is the possibility not to import all the credibility damage from the RED into the CRCF. Martin supports the option mentioned in the TA to award removals only after physical carbon removal is demonstrated. **Fabien Ramos (DG CLIMA)** ensured that the EC understands the importance of the biomass sourcing matter and its relevance to bio-CCS. **Austrian Farmers Union** ensured that forests in Austria show regrowth. **Fabien Ramos (DG CLIMA)** explained that while developing the methodology, consistency of the approach is needed, and invited the room to continue the discussion offline.

Eli Mitchell Larson (Carbon Gap) commented that in keeping with the sustainable carbon cycles communication, it might be a good precedent to identify fossil versus biogenic emissions. **Chris Malins (Cerulogy)** explained that they treat biogenic emissions as zero and therefore these might be considered outside the reporting scope, but a biogenic emissions reporting requirement might be possible. **Fabien Ramos (DG CLIMA)** added that the suggestion to report the emissions by scope is to be used in relevant cases, but if the experts do not deem it necessary, it is not essential. Inventory category reporting is deemed more important, e.g. to allow us to identify and avoid double-counting between ETS and CRCF.

Nora Mitterböck (Austria) pointed out that there is a possibility that CCS and permanent bio-CCU will be considered under ETS post-2030, which is relevant as most capture projects will be operational. **Fabien Ramos (DG CLIMA)** explained that there is a need to anticipate the distinctions and links between removals and ETS to avoid double counting, therefore disaggregated reporting on emissions is being considered.

Wijnand Stoefs (Carbon Market Watch) noted that there may be an inconsistency about which future policy developments can be considered. Either all future policy expectations

should be considered or none. **Fabien Ramos (DG CLIMA)** explained that the additional reporting details are not only looking forward to potential policy development but also useful for reporting emissions at the EU level with transparency. These emissions need to be reported correctly in our inventories to understand progress against carbon targets.

Mark Preston Aragonès (Bellona Europe) suggested to breakdown the emission reporting by greenhouse gas, as there is a potential mismatch in territorial accounting for projects that are implemented across different countries and are accounted in different national inventories. **Fabian Levihn (Stockholm Exergi)** added that gross removals should be included and/or declared in the register. **Chris Malins (Cerulogy)** notified that the reporting of both specific greenhouse gases and gross removals is already specified in Annex 2.

David Chiaramonti (Italy) pointed out that currently, there is no distinction being made between CO₂ and carbon. It has been noted that transforming biogenic carbon into CO₂ can substitute fossil CO₂. This may make sense for emission mitigation, but carbon needs to be stored instead of burned.

Denmark commented that they expect to have plants operational before 2030, appreciate the views on first movers and whether they might be devalued if the certificate is acquired before the regulation.

Mark Preston Aragonès (Bellona Europe) suggested that for projects where there are other products than a carbon removal unit, those projects should be incentivised for those other products rather than for the removal. **Chris Malins (Cerulogy)** remarked that there is a need to distinguish between a system that is overall profitable and a carbon removal project that is in itself profitable. If, however, there is a system where there is additional value to the carbon removal activity, these implications will be considered for the certification.

Additionality:

Mark Preston Aragonès (Bellona Europe) commented that financial additionality would need to be tested for the use case of the units, as counterbalancing emissions may not be the only use that should be achieved.

Wijnand Stoefs (Carbon Market Watch) asked to explain the clean development mechanism (CDM) investment analysis test. **Chris Malins (Cerulogy)** explained that they will provide a background on the CDM and the outline of the additionality tool, but has not yet specified if the draft methodology will refer to the CDM tool or introduce similar requirements.

Fabien Ramos (DG CLIMA) agreed that the additionality aspect is particularly relevant in the case of voluntary carbon markets. Currently, there is a legal requirement for additionality, but if the legislation develops and cases emerge that lead to difficulty in using credits, this may be reviewed.

Long-term storage:

Codie Rossi (CATF) wondered if the required permanence and validity of CO₂ removal units should correspond to the lifetime of CO₂ in atmosphere (millenia). **Chris Malins (Cerulogy)** responded that having certificates that expire in a millennium is not regulatorily meaningful. **Wijnand Stoefs (Carbon Market Watch)** argued that it is a strength of the CRCF that it does not put an exact time on permanence and therefore the methodology should aim at millennia

and maintain the language of a minimum of several hundred years. **Chris Malins (Cerulogy)** noted that the TA states that technologies with a sudden release of carbon at the end of the permanence period are not in scope.

Wijnand Stoefs (Carbon Market Watch) pointed out that the CRCF language states that all permanent removals must meet standards consistent with the CCS Directive and asked if it is wise to divide between ‘CCS based removals’ and other cases. Regarding biomass regrowth, he does not agree that regrowth should be assumed and safeguards are needed. **Fabien Ramos (DG CLIMA)** agreed that the methodologies need to be consistent with the CCS Directive and that it must be considered how this is applied. Biomass regrowth is important, but the language must be consistent with other legislation. However, there may be a way to use the sustainability co-benefit system to allow feedstock sustainability to be strengthened.

Fabian Levihn (Stockholm Exergi) remarked that forest management is a series of activities over a rotational period, not just cutting trees and replanting.

Matthew Hornsby (Ireland) commented on the mention of using modelling approaches for biochar and rock weathering where ground truthing is complex. There may be a strong risk of a perverse incentive when having to wait for active proof for technologies and could get earlier issuance in the case of less robust approaches. There is a need for a non-modelling based validation to finalise the issue of credits to be consistent. **Chris Malins (Cerulogy)** explained the discussion is ongoing for approaches that allow monitoring and are quite burdensome versus having a more flexible approach for those that are not possible to monitor. Furthermore, the TA does not specify to wait for biomass regrowth before issuing removals.

Frauke Kracke (Frontier) remarked that a model-based approach does not exclude measurements. There is a lot of evidence and uncertainty discounts can be made.

Fabian Levihn (Stockholm Exergi) pointed out that the timing of removals from biomass generation is more complex than cut and regrow, and the whole forest growing area is relevant.

Martin Pigeon (Fern) pointed out that we cannot hide behind the complexity of biomass accounting. Using a whole or arbitrary forest growing area only favours energy operators. Instead, the counterfactual should be directly addressed or the LULUCF accounting considered.

Codie Rossi (CATF) warned about the long-term removal and the risk of reversal in cases where credits are used as offsets. **Frauke Kracke (Frontier)** wondered how reversal risk be included in case of non-geological storage. **Chris Malins (Cerulogy)** explained that it will need to be approach-specific, wherein the reversal risks are taken into account with instructions how to address these in the project design documents.

Sustainability:

Martin Pigeon (Fern) highlighted the importance of soil carbon, which are an important co-benefit, and its destruction can be prevented by avoiding clear cutting and promoting continuous forest cover, leading to other benefits.

Wijnand Stoefs (Carbon Market Watch) remarked that the sustainability article starts with a requirement that sustainability priorities should not be significantly harmed. Not all

countries in Europe have strong forestry governance and there is imported biomass. A negative list for biomass feedstock across biomass-related CDR methods would be supported.

Codie Rossi (CATF) wondered if air quality benefits associated with the addition of carbon capture units have been considered regarding co-benefits. An electrostatic precipitator can deliver substantial air pollution reductions (although for a new facility it is less obvious that pollution reduction should be treated as a co-benefit).

Eli Mitchell Larson (Carbon Gap) suggested that anything the CRCF can do to collect and codify information that will help the public understand the impacts of local siting could be very valuable, as people tend to be concerned about air quality and sub-surface storage safety, for example.

Henrick Gade (Norway) said that the excess of recovered heat in facilities may be supplied for local use, which could be considered a co-benefit. **Chris Malins (Cerulogy)** invited the room for written feedback with these sorts of examples and ideas for how to identify these formally as co-benefits.

Fabian Levihn (Stockholm Exergi) exemplified other co-benefits of bio-CCS, such as flue gas condensation which can make a CC facility a net water producer, and nutrients that can be returned from ashes. **Chris Malins (Cerulogy)** remarked that only if additional biomass combustion is attributed to the carbon capture unit should the ash return be considered as a possible co-benefit

Nora Mitterböck (Austria) wondered if the requirement that energy output of bioenergy plant cannot be increased, is part of the legally binding text of the regulation or the recital and therefore probably less relevant. **Chris Malins (Cerulogy)** confirmed that it is not directly mentioned in the articles of the regulation.

Fabio Poretti (CEWEP) asked if mixed-waste incineration with recovery falls within the scope of the methodology. **Chris Malins (Cerulogy)** answered that they look broadly at bio-CCS, but the scope of the initial certification methodology has not yet been decided and the scope of later methodologies may be altered.

Mark Preston Aragonès (Bellona Europe) commented that the generation of electricity with biomass is a poor use for biomass, but there could be by-products such as heat or cement that would be low carbon and such projects should be supported for non-CDR benefits to the extent possible rather than relying on removals.

Eli Mitchell Larson (Carbon Gap) appreciated the intention to be consistent with RED II, but would urge to go beyond and perhaps to add information that is preferred by buyers.

Modularity:

Mark Preston Aragonès (Bellona Europe) asked how the prioritisation of methodologies was decided upon. **Fabien Ramos (DG CLIMA)** explained that it is a result of discussions with the co-legislators, a focus on co-benefits and a consideration of the relationship to existing legislation.

Martin Pigeon (Fern) remarked to do a module for biomass collection before setting rules for the use.

Ian MacDonald (IOGP) agreed with some of the prioritisation, but from a project developer viewpoint biogenic CCS is currently seen as the most important given that the majority of development of DACCS is happening in different jurisdictions. **Amalie Tokkesdal (Denmark)** wondered why DAC should come first in the prioritisation. **Fabien Ramos (DG CLIMA)** explained that there are similarities between DACCS and bio-CCS, but is anticipated that agreements on a methodology for DAC will be reached first, whereas more discussion is needed for bio-CCS.

Adrian Nicolae (DG CLIMA) noted that the Industrial Carbon Management strategy is elaborate on CO₂ transport and wondered how the ETS connect to the CRCF and the Industrial Carbon Management.

Robert Höglund (type A expert) asked how third parties will provide certification within this framework and would like to see an enhanced rock weathering standard moving forward in the near term. **Fabien Ramos (DG CLIMA)** explained that the idea is to develop EU methodologies that give the key requirements, but are then implemented by third party certification systems including a recognition process.

Eli Mitchell Larson (Carbon Gap) suggested to break down the transport in various transportation legs that will occur in the process. It might be useful to have a universal architecture for the modules. From a buyer perspective, the question is whether bio-CCS buyers are happy with the RED II standard for sustainability, and if it is possible to provide buyers with additional information. **Fabien Ramos (DG CLIMA)** clarified that the EC wants to be transparent in reporting of information. While taking a neutral position on specific biomass sustainability cases, in case a scheme develops a protocol specifying a limited set of allowable biomass feedstocks, it needs to be decided whether that scheme can be recognised in the framework and whether that sort of differentiation should be encouraged.

Björn Boström (Swedish Environment Protection Agency) supported placing bio-CCS before DACCS, as well as waste to energy and said that BECCS projects have the co-benefit of reducing fossil CO₂ emissions.

Frauke Kracke (Frontier) pointed out that they do not deem current certification schemes to be sufficient on biomass. They put a lot of work into their own sustainable biomass sourcing principles and seek to be more conservative. On prioritisation, they would encourage clearer communication to the public on the priorities and expected timeline.

Biochar

Chair: Andrea Klaric (DG CLIMA)

Andrea Klaric (DG CLIMA) introduced the context of biochar and challenges for this technology. She announced an upcoming review paper on biochar and an online workshop on biochar on June 18th 2024.

Presentation: biochar review paper

Chris Malins (Cerulogy) introduced biochar as a permanent removal and elaborated on its production and use as carbon removal activity. The highlights of academic literature and approaches for permanence in soil were presented, as well as the issues with the H/C ratio (lower ratio is associated with greater permanence). Key issues for monitoring in soil include 1) after application to soils, biochar is subject to transport, 2) it is not practically possible to

monitor biochar in situ in soils as the losses due to transport are likely to mask any information about losses due to degradation, and 3) biochar incorporated in soils is largely protected from reversal due to fire. When biochar is incorporated in materials on the other hand, it is not subject to transport and if the final use of the materials is recorded, those materials could be monitored and sampled in situ, with which reversals may be identified.

Discussion: deep dive on key questions

DD1: How to assess the permanence of carbon storage in biochar?

Harald Bier (EBI) argued that biochar is not the precise term, as biochar carbon removal is introduced as a process including the production of the biochar and the storage side. The focus should be on the inertinite parts for storage.

Codie Rossi (CATF) pointed out to the need to ensure that the assumptions on degradation of biochar are correct, depending on the type of biochar (feedstock, process). **David Chiaramonti (Italy)** clarified that the stable part of biochar is measurable and recent scientific findings allow for the characterization of the type of biochar and identification of the stable part (new findings to last IPCC report). In consequence, labile biochar can then be considered a co-benefit.

Frauke Kracke (Frontier) encouraged to think about incorporating the carbon efficiency of the process, as it can be at odds with maximising permanence. Creating more permanent char can also lead to driving off carbon with the hydrogen and oxygen. At a very high temperature you might get only 20 to 30% of the starting carbon stored and may lose some labile carbon co-benefit. **David Chiaramonti (Italy)** disagreed and explained that the difference in carbon efficiency is relatively minor as the heat is recovered and the carbon efficiency will be around 50%.

A question on **Slido** enquired why biochar is more stable in concrete compared to soil applications. **Chris Malins (Cerulogy)** answered that in general biochar in concrete is less exposed to degradation processes.

Robert Höglund (Marginal Carbon) pointed out that the recent paper on degradation results from Harald Bier in combination with Prof Sanei's results convinced him that inertinite seems to be quite stable. The question of additionality is more interesting given the potential for multiple income streams.

Giulia Marina Stellari (Fall Line) asked what type of in situ monitoring approaches may be used and enquired about the properties measured at the point of biochar production.

Wijnand Stoefs (Carbon Market Watch) remarked that the CRCF is clear on financial additionality, but is worried about the financial additionality of biochar in general. Papers still call for further field testing and a conservative approach for storage is needed within the CRCF framework in particular as the use case for certificates is not yet clear. It might be appropriate to award only temporary certificates. The practicality of monitoring should also be secondary to establishing environmental integrity.

Annette Hafner (Ruhr Universität) commented that CO₂ losses could be captured and considered under bio-CCS. **Harald Bier (EBI)** responded that he rather focuses on effectiveness rather than efficiency, as a starting point for development of biochar products is needed and biochar has quite high TRL levels already. High prices make it likely that not a lot

of certificates will be sold. Also, inert carbon does not degrade, so it does not need to be monitored.

DD2: Is it practical to monitor biochar in situ?

Chris Malins (Cerulogy) posed the question if the methodology should require incorporation of biochar into soils as opposed to surface application.

Fabian Levihn (Stockholm Exergi) explained that concrete with biochar can be used in non-construction applications (e.g. furniture), but it cannot be assumed that concrete is used forever. **Chris Malins (Cerulogy)** added that biochar in products, such as concrete, could be monitored more easily than in other materials that may be subject to transport. However, he wondered how to deal with the end of life (EOL) process, wherein potential applications do not allow for a practical approach to follow biochar through to EOL.

David Chiaramonti (Italy) pointed out that there is a fundamental difference between practices like carbon farming, which applies across the whole field, and biochar application, which is clumpy. Soil sampling is therefore not a viable measurement approach, as it is very time consuming (in a 20-year-old experiment it took a week to collect 12 grams of biochar from the soil) and complicated (a statistical evaluation of remaining biochar based on sampling is impossible). Instead, an audit deployment with control of the product and application process (biochar needs to be put into the soil not on top of it) should be used.

Eli Mitchell Larson (Carbon Gap) pointed out that that civil society is interested in field testing and wondered if the EG could work with the EC to make recommendations for Horizon research, by simultaneously developing a first methodology based on latest science and do field tests. **Andrea Klaric (DG CLIMA)** explained that the EG is indeed very welcome to inform the EC on funding needs e.g. on biochar.

Giulia Marina Stellari (Fall Line) asked why EOL monitoring would be required if the decay curve is known. **Chris Malins (Cerulogy)** explained that the decay curve is no longer relevant if EOL is associated with high temperatures that may destroy the biochar.

Sacha Brons (CCF) expressed his scepticism on the use of biochar in concrete and enquired about the scope of the certification.

Amalie Tokkesdal (Denmark) commented that Denmark has already established a fund for the construction of a demonstration plant on Pyrogenic Carbon Capture and Storage (PyCCS) to be available by 2025. **David Chiaramonti (Italy)** agreed that it's good to invest money in research, but so far biochar has increased yields from the vineyard by 25%, so it's interesting for farmers.

Carbon storage in products: Methodology concept overview and objectives of the discussions
Chair: Sevim Aktas (DG CLIMA)

Recommendations of the technical assessment paper: Carbon Storage in Products

Presentation: technical assessment paper by CRETA

Jannes Nelissen (CRETA) highlighted the key elements of the technical assessment paper and methodology to calculate carbon storage in construction products.

Discussion: Deep dive on key questions

Annette Hafner (Ruhr Universität) raised the point that the energy performance of a building is not the same as for elements of a building. The proposed quantification method needs to be building specific and there will be different carbon storage potentials for the different materials (insulation vs structure). Therefore, the question is what the methodology should achieve and at what level. Also, she emphasized that it is not a good idea to mix recycled based materials with virgin based materials in one step and opted to make it a two-step fashion.

Sebastian Rüter (Germany) pointed out that regarding the off-setting exercise, there are different components of the GHG total in environmental product declarations (EPD) which always leads to a negative value. He suggested to keep the GHG associated separate and to not mix up GHGs with greenhouse gas potential (GWP).

Wijnand Stoefs aired his concern that EOL considerations will be entirely excluded, which is not desired. He further pointed out that harvested wood products (HWP) are already being used and wondered how financial additionality can be shown for (biobased) products that are already in use.

Lucia Perugini clarified that from an IPCC perspective, conducting inventory has a very defined metric and is therefore not desirable to mix terminology such as GHG and GWP.

Sacha Brons (CCF) wondered how to take the six minimum criteria for the do no significant harm (DNSH) into account?

Hans Joosten asked if negative associated emissions are imaginable.

Jannes Nelissen (CRETA) answered that products that include recycled carbon is interesting, however, currently the methods make an average approach that makes it difficult to account for these products clearly. It would be good to discuss this further.

Robert Höglund (Marginal Carbon) pointed out that as all building are unique it might be better to set the baseline to a project baseline.

Samy Porteron (ECOS) indicated that emissions from forestry activities are already accounted for by the forestry sector. For transport emissions it depends on whether certification is occurring at product level and it needs to be clear that the EN standards for building level is EN5978. Under the CRCF certification of products, he opted to take an existing product without a clear EOL or longevity. Finally, he encouraged to broaden the certification in sectors to incentivize circularity and relate practical criteria to building elements already in use in other certification methodologies.

Johann Zillner (RWA Austria) recommended from experience in Austria to keep the idea of certification simple, as simple ideas have the biggest impact, and make this the priority. He suggested to focus on the bigger things with a balance between the effort and outcome and mentioned an example of the default buffer idea, which is practical and easy.

Ian MacDonald (IOGP) proposed the use of a positive list for estimating financial additionality and wanted to know what the general consensus was for positive lists.

Sacha Brons (CCF) explained that in the Netherlands, obvious assumptions had to be made in quantifying carbon removals in circa 100 projects, of which 10 are now certified for small to medium enterprises (SME). It is challenging to show financial additionality for builders making choices and moving from 100 Euros or 300 Euros return. Wood is expensive so it is adequate to provide an incentive.

Annette Heffner emphasized the need of effectively showing the benefits of building with wood, which needs to be done on a country basis when using LCA accounting for this purpose due to differing regulation and increase the uptake of building with wood. Financial additionality will be taken into account if there is a standardised baseline, if not the default is an activity-based baseline, which needs to be demonstrated to work.

Samy Porteron (ECOS) enquired if the focus should be on structure materials such as insulation, wherein the industry can provide a list of good practises.

Martin Pigeon (FERN) suggested how to ensure including the cascading use of wood. In a system that is currently being implemented in Flanders every wood shipment needs to be checked for potential use in the paper and plywood industry, only if it cannot be used there the incentives for bio-energy may apply. Hence more long-term products are prioritised and this is contributing to the carbon storage pool, this could be done with the right incentives.

Marta Hernández de la Cruz (Spain) asked how to ensure in negative GHG emissions that the carbon stored is not paid for twice when it is uncertain who is the owner of the building. In Spain, timber is not financially attractive to increase the uptake of timber in buildings due to many barriers.

Eli Mitchell Larson (Carbon Gap) pointed out that a certification scheme is required to lower the carbon convention, wherein it's important to know what is in scope regarding financial additionality and adheres to the policy and end user. Compensation for the financial use regarding climate benefits compared to the use of other products is required. The utility of HWP as a climate solution is strange as research shows that it is unlikely to reduce GHG.

Cecile Dap (BBCA Network) pointed out that they received feedback from implementing certification methods for buildings in France, that it is possible to have a lower carbon process. The key is to keep things simple to increase stakeholder support.

A summary of the discussion was provided by **Sinead O'Keeffe (CRETA)**:

There were four major points of concerns and confusions mentioned throughout the discussion. These were summarised as follows:

- 1) Confusion between storage and removal. Removal is the activity of taking CO₂ from the atmosphere either for example, from soil process of sequestration or growing (living) biomass. Both of which are covered under the carbon farming and forestry certification schemes. Storage is the CO₂ that is kept within biobased materials which have been harvested. This storage is also temporary – a delayed emission.
- 2) Longevity is another point of concern and divergence, whether it relates to EOL and circularity of products or whole buildings, or if it relates to liability for storage or if relates to sufficiency of building stock that is already there (ensure their longevity to reduce demand for resources). The predominantly underlying question is how incentives can be created to nudge us in the right direction of longevity and reduction?

- 3) Incentivising uptake of biobased building materials – how can we do this in a way to avoid green washing , or creating unfavourable behaviour with undesirable outcomes, such as impacts in the LULUC sectors?
- 4) There were concerns about the limitations of the current sources of inventory, such as EPDs and standards, How to harmonise the quantification framework with the IPCCs and updates from origin of materials? – as above all else we need to keep it simple, to bring everyone with us.

5. Next steps

Christian Holzleitner (DG CLIMA) concluded that the Commission is open to the advice of the Expert Group on the prioritisation for the development of methodologies. The main focus in the coming months will be to conclude the framework with parliament and Council, for it to be stable to continue. In the meantime, the EG is invited to share their feedback on the TAs via Basecamp until the deadline of 3rd of May 2024. The input will be used to further develop the TAs into strawman proposals and start the development of draft methodologies.

Christian Holzleitner (DG CLIMA) warmly thanked all the participants for their active participation and contributions and welcomed any further input and suggestions for the next meeting.

6. Next meeting

The next meeting of the EG will cover carbon farming, in particular the draft methodology for peatlands and the strawman proposals for forestry and agriculture on mineral soils. It will take place in a hybrid format in October 2024. The precise date of the meeting 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 Expert Group (independent experts)	
Last name	First name
CAMES	Martin
CHIARAMONTI	David
MILCINSKI	Grega
OLESEN	Asger
PERUGINI	Lucia
RÜTER	Sebastian
STELLARI	Giulia Marina
VAN ACKER	Joris
HOGLUND	Robert (Observer)
JOOSTEN	Hans (Observer)
TAMME	Eve (Observer)

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

Representatives of C-Type Members of Expert Group
Bellona Europa
Carbon Market Watch
CEFIC (European Chemical Industry Council)
CEMBUREAU - The European Cement Association
CEWEP, Confederation of European Waste-to-Energy Plants
Clean Air Task Force
Climate Leadership Coalition
Confederation of European Forest Owners (CEPF)
Confederation of European Paper Industries (CEPI)
Copa Cogeca
Ecologic Institute
Environmental Coalition on Standards (ECOS)
European Biochar Industry (EBI)
European Confederation of Woodworking Industries (CEI-Bois)
European Council of Young Farmers (CEJA)
European Environmental Bureau
European Landowners' Organization
European State Forest Association (EUSTAFOR)
FoodDrinkEurope
I4CE Institute for Climate Economics (Observer)
IETA (International Emissions Trading Association)

IFOAM Organics Europe
Indigo Agriculture Europe GmbH (Observer)
IOGP International Association of Oil&Gas Producers
ISCC System GmbH (Observer)
Negative Emissions Platform
Negative Emissions Platform
REC Standard Foundation (Observer)
Stichting BirdLife Europe
Stockholm Exergi AB
TIC Council
Umweltbundesamt GmbH (Observer)
Zero Emissions Platform (ZEP)

Representative of D/E-Type Members of EG	
Delegation	Organisation
Austria	Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology
Belgium	Environment Public Service/Climate Change Unit
Bulgaria	Ministry of Environment and Water
Croatia	Ministry of economy and sustainable development
Cyprus	Department of Environment
Cyprus	Department of Environment, Climate Change division
Czechia	Ministry of the Environment
Denmark	Danish Ministry of Climate, Energy and Utilities
Estonia	Ministry of the Environment of the Republic of Estonia
Finland	Ministry of Agriculture and Forestry of Finland
Finland	Ministry of Economic Affairs and Employment of Finland
Finland	Ministry of the Environment
France	Ministry of Agriculture
France	Ministry of Energy transition
Germany	BMEL
Germany	BMUV
Greece	Ministry for Environment and Energy
Hungary	Institute of Agricultural Economics
Hungary	Ministry of Agriculture of Hungary
Hungary	Ministry of Agriculture of Hungary
Ireland	Department for Agriculture, Food and Marine
Ireland	Department of the Environment, Climate and Communications
Italy	Institute for Environmental Protection and Research, ISPRA
Italy	Ministry of the Environment and Energy Security
Italy	Ministry of Agriculture, of Sovereignty
Italy	Food and Forestry
Latvia	Ministry of agriculture
Lithuania	Ministry of Environment
Lithuania	State Forest Service
Lithuania	The Ministry of Agriculture
Netherlands	Ministry of Agriculture, Nature and Food Quality

Norway	Norwegian Environment Agency
Poland	Ministry of Climate
Portugal	Portuguese Environment Agency
Romania	Ministry of Environment, Waters and Forests
Slovakia	Ministry of Agriculture and Rural Development
Slovakia	Ministry of Environment
Slovenia	Slovenian Forestry Institute
Spain	Ministry for the Ecological Transition
Sweden	Swedish Environmental Protection Agency


<i>Invited experts: representative from</i>
Microsoft
Aarhus University
Carbfix
Carbon Gap
Carbon Market Watch
Carbon Plan
Carbonfuture
CCS+ Initiative
Cerulogy (Scientific coordinator)
CEWEP
Clean Air Task Force
Climate Cleanup Foundation
Climeworks
Danish Energy Agency
Delft University
FastCarb
FERN
French ministry of Ecology, Energy and Territory
ICF (Project manager)
Isometric
NEGEM
Neustark
Partners for Innovation (CRETA-project manager)
Puro.Earth
Stockholm Exergi
Timber Finance
Umweltbundesamt GmbH
UNDO

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

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.

Question text	User Name
Loud and clear	Anonymous
Will the whole event be recorded and available publicly afterwards?	Anonymous
Where can the public view the three papers shared with the group?	Anonymous
Good to hear the term "nature-based solutions" being used despite the scientifically invalid divide between misnamed "permanent" CDR and "carbon farming"	Anonymous
What do you define as "Methodology" ? Is it the same as under UNFCCC?	Anonymous
To get good knowledge into the expert group you could start by inviting scientists to speak on the topic rather than "experts" with PR and Comms backgrounds	Anonymous
We could reduce construction a lot and restrict flights a little to achieve emission reductions in the next years, before we decarbonize.	Dorota Retelska
Why does the EU not align with its time-periods with the UNFCCC? Which decided on 15-years long Crediting Periods?	Moriz Vohrer
On the comment that removals by nature are temporary, this is a misunderstanding. NbS CDR has a demonstrated durability and reliability. We are happy to brief.	Moore Centre for Science
So what is the role of national certification schemes in the future?	Anonymous
How soil carbon baseline will be selected? Must we used a specific carbon map?	Francisco José Blanco
Global warming causes more damage than expected and might accelerate. We need to act in the next years to save our cities, global economics, whole countries.	Dorota Retelska
Why do you use other terms than UNFCCC? // "Indirect GHG" = "Leakage", "Activity Period" = "Crediting Period", ... 🤔	Moriz Vohrer
Will certification units be accounted for by countries and/or by organizations financing the projects (as part of inset or offset project)?	de Brogniez Delphine
Will the baseline be established (ie. calculated) by the Commission, or will technical guidelines to calculate them be given (as does Verra, for instance)?	de Brogniez Delphine
What exactly are the use cases for the EU carbon removal credits ("Green Claims")?	Benjamin Munzel
Let's capture lots of carbon now to save our cities, let's plant trees now, later solar panels will take over.	Dorota Retelska
„Permanently chemically bound in products” may lead to misunderstandings, bc this is no permanent storage.	Michael Dutschke
How will the periods of evaluation be determined? Considering that different agricultural activities have different periods of results and use of carbon	Diana Escobar
How do you image a market for "Temporary Credits" ? // This has failed already 20 years ago (under AR CDM) ¶	Moriz Vohrer
How will positive contributions to soil health be assessed (qualitative/quantitative)?	de Brogniez Delphine
"Compete on co-benefits" how will CBs valued in the certificates themselves and make sure that a unit with more CBs - all else equal - will be prioritised?	Sebastian Manhart
+1 Michael's comment: The use of "permanent" is misleading and invalid. All CDR has risks. Important is to have clear steps in place for when failure occurs.	Moore Centre for Science

Will companies have the choice of having carbon credits certified according to CRCF or a private standard, or will CRCF certification be mandatory on the VCM?	Annette Dirksen
Carbon farming does not only offer an additional income for farmers, but most importantly a way to make agriculture resilient to climate change.	de Brogniez Delphine
How is it planned to issue credits for stored carbon? On a periodic basis or all the credits at one time? How do you plan to monitor e.g. 35 years?	Polina Liepelt
From the IPCC CDR definition used, storing carbon by preserving old forests - that would otherwise be cut - may not be included in scope of CRCF. Is this so?	Erik Pihl
Will CRCF accept actuarial methods, such as buffers and insurances, to also cover for reversal risk beyond the monitoring period, at a program operator level?	Mats Rosenberg
Existing	David Gazdag
Fossil carbon that is emitted can stay up to 100 000 years in the atmosphere. Will offsetting of fossil carbon with temporary storage units be allowed?	Erik Pihl
While carbon farming should provide "positive co-benefits", won't following the RED requirements for biomass only prevent harm, but not add benefits?	Samy Porteron
Will there be some methodologies for blockchain-related carbon removal/farming/ reduction activities?	T
How will certificates contribute to the national inventory?	Andreas Täuber
How the CRCF will fit in with existing certification frameworks ?	Justine Campredon
there is a notorious lack of understanding of the dynamic nature of carbon storage in forests, soils or products. These systems as such can be permanent.	Michael Dutschke
Thanks for the presentation: Please clarify for the monitoring part. Is it on-site + (remote sensing or modeling)	Anonymous
Where can one find more guidance on financial additionality when CDR project combines state support with VCM revenues?	Håkan Låbom
Why were urban areas omitted by the voluntary certification scheme and are there plans to include for example natural carbon removals in urban areas?	Philipp LaHaela Walter
How will the EU Deforestation Regulation be used as a means of ensuring sustainable sourcing of wood products, as opposed to only relying on RED?	Gregory Richards
Given the voluntary nature of the framework, what incentives are there for the stakeholders to embrace it?	Enrique Medina Martos (CENER)
Will the methodology include onshore geological storage?	Aian Kadyrova
Will the carbon removals proposal only cover carbon removed within the EU or also outside the EU?	Sanne Dekker (FrieslandCampina/EDA)
The provider can use net carbon removal benefit for credits? Or total carbon removals?	Polina Liepelt
How do you take into account double counting with national inventories and its associated claims?	Simon Pflugler
For how long will the Commission recognise certification schemes, and what is the revision process?	Martin Pigeon
Will the certification registry be voluntary or mandatory? If voluntary it will be of limited value, unknown if farmers in our scope 3 have traded in credits	Sanne Dekker (FrieslandCampina/EDA)
How does the regulation ensure that future high demand for biomass (BECCS, materials, ...) does not lead to massive iLUC and thus biodiv loss elsewhere?	Leon Merfort
When  do expect that "Private Certification Schemes" can apply under the EU Commission?	Moriz Vohrer
I'm struggling to understand the difference between the Certification schemes and Certification bodies. Please clarify.	Max DuBuisson

Forward contracts (purchase agreements) in the absence of ex-ante certification were mentioned. What other financing instruments are available for operators?	Benjamin Munzel
Can an aggregated carbon farming project obtain a certification audit prior to signing up farmers? Can farmers continue to be added on a rolling basis?	Max DuBuisson
Will be carbon removal units valid for EU-ETS?	Polina Liepelt
How do you envision to display temporary carbon removals in the GHG inventory, in case they are reversed before the end of the monitoring period.	Aaron Scheid
How is the link between the registry and the CSRD?	Sanne Dekker (FrieslandCampina/EDA)
How do you plan to promote 'temporary' removals and aren't you afraid people will turn their back on it? Is the global point to push people into permanence?	Julia
Which country can claim temporary carbon removals in products in case of cross-border value chains?	Paul Baustert
Concerns reg. BASELINE if scenario calc. with other method a) uncertainty b) consistency between management practices c) compliance with accounting standards	de Brogniez Delphine
Could you provide more details on the interlinks between CRCF and the CPR Acquis work on Milestone A.6 (Carbon Removals)?	Sara Versano
You mention that Memberstates will have to report on carbon removals in construction products in buildings. Which regulation/directive mandates this?	Paul Baustert
Can the presentation be sent out to participants now?	David Gazdag
Can people start carbon removal exploitation already and get retroactive payment when the scheme starts?	Dorota Retelska
There IS an issue with double counting if eg a country uses a ton in LULUCF storage to meet ESR goal, while the same ton is used to offset a company's emissions	Erik Pihl
Recital 16 states soil emissions reductions "be rewarded, either via the CAP or other public or private initiative." This wording Recital 20a and what	Zsolt Lengyel
..Mr Christian Holzleitner mentioned for carbon farming that both private AND public (state aid / CAP) funding will be required. Will Rec 16 be modified?	Zsolt Lengyel
When will it be possible to send the private methodologies (like validated by Bureau Veritas) to be recognised ?	Louisiane Guezal
How European projects may contribute in the next steps? For instance on list of financing options according to the country and land uses or activities	Francisco José Blanco
Is there a location where I can find some additional information about the kick-off event on the June 19th about the ETS in agriculture mentioned in the slides?	Aalt Robert van Middendorp
It is considered useful to include bioenergy in carbon farming.	Ilaria Falconi
There is a risk that a farm will require two certifications: one for carbon farming and one for the production of renewable energy	Ilaria Falconi
Will "validated Credits" still be shown on the EU Registry?	Anonymous
Should development banks set up funds to finance activities and allow companies to invest and secure access to and prices of future (ex-post) units?	Benjamin Munzel
Are there any verification step before the operator start the project implementation?	Håkan Låbom
In the context of carbon farming, would the "operator" be the farmer, or the aggregator who is running the project?	Max DuBuisson
When will at least preliminary list of the accredited certifications schemes be available to public?	Aian Kadyrova
Please, answer the question about the costs of auditing? Who is suppose to bear them?	Joanna Horyza

James Hansen estimates we'll reach 2°C in 2040. Disasters would increase several-fold, flood cities, kill people. Fast carbon withdrawal might help.	Dorota Retelska
Where do you respond to the questions from slido?! Live or you provide the answers later in written form?	Aian Kadyrova
A 19 June EC Kick-off event for "Study on emissions and removals trading in the agri-food value chains" was mentioned. Could you please share its details.	Zsolt Lengyel
Another option for registry "interoperability": real-time monitoring of participating registries by the EU. Low tech least cost option to avoid double counting.	Max DuBuisson
What is the rationale to expect that existing VCM Registries will make themselves CRCF compliant (e.g. interoperability) for the 1-2 years of operations?	Zsolt Lengyel
What about carbon credit units ID? How will they be distributed?	Polina Liepelt
How will ETS inclusion of removals (i.e existing ETS and/or Agri ETS) will be reflected in the R.desing given that clarity on this will only emerge in 2026/7?	Zsolt Lengyel
Will operators be allowed to use actuarial tools (buffers etc) to address post monitoring reversal liabilities? Perpetual monitoring not viable commercially.	Mats Rosenberg
Has anyone assessed demand for temporary removals? History suggests they will be worthless, in which case we would be wasting our time developing a methodology.	Max DuBuisson
Can you please share the link to signup for newsletter? Thanks	Gitanjali Thakur
Will woody perennial crops (polars) besides agroforestry, be included under agricultural methodology and will take into consideration carbon removal by biomass?	Mindaugas Šilinkas
LINK for newsletter sign up: https://ec.europa.eu/eusurvey/runner/CarbonRemovalMailingList	Lucia Causey
Technical question: why is Gabriel Moinet being displayed constantly?	Michael Dutschke
My opinion is that temporary removals are useful too. Now we emit too much CO2 so we need to remove it, but later, in 20-30 years energy renewable.	Dorota Retelska
Re. temporary units: only 0.88% of issued Clean Development Mechanism (CDM) credits were tCERs (-> UNFCCC CDM Executive Board : https://bit.ly/43eOcPF)	Zsolt Lengyel
The technical assessment paper states that Ireland includes agroforestry in the agriculture methodology. This is incorrect - It is still considered forestry	Shane Flanagan
does "criteria" means something like a planetary boundary approach ?	Gitanjali Thakur
REGARDING ELEGIBILITY CRITERIA: organic amendments use in carbon farming is presented as irrelevant. Is this coherent with RENURE and circular economy strategy?	JUAN SAGARNA SPANISH COOPS
We have concerns about the rigour of uncertainty quantification, if baseline and project scenario are quantified with different methods.	de Brogniez Delphine
How feasible is it for Commission/JRC to manage standardised baselines? Why not define guidelines and let stakeholders quant. the baseline (as done by Verra)	de Brogniez Delphine
Agree with latest comment: that there should be other ways to incentivise early adopters than using standardised baselines.	de Brogniez Delphine
When can we reach the presentations and the recordings?	firdevs dogrusever
Agree with Finland in need to expand scope to look at peatland forestry and options for management	Shane Flanagan
Is the demand side of the future EU Carbon Removal Units market represented in the Expert Group? (= corporates looking to buy + claim the units in the future)	Benjamin Munzel
please can you share the presentations?	Moritz Adam

Could there be a conflict when introducing livestock-schemes? Farmers on peatland soils may take up those instead of paludiculture/rewetting.	Moritz Adam
Where do you share the webinar recordings?	Thomas M
What for do you need a "Forest" definition?	Anonymous
Why is it difficult to define forestry activities ? Are they so different in the EU ?	Justine Campredon
The selection of Carbon Pools (SOC, AGB, BGB, HWP) also depend on the time of Crediting Period. Is this taken into account? What will the CP be for forestry?	Anonymous
Is HWP part of the Forest methodology OR is there an additional methodology in planning?	Anonymous
In view of cost-effectiveness, would it be possible to estimate some pools with Tier 1 and request higher Tiers for the more significant pools only (AGB+BGB)?	Marieke Sandker
If a specifik carbon pool in a project area is expected to differ from baseline it is fair to exclude it. Like fore example dead wood in managed forest,	Anonymous
Would the definition of reforestation include regrowth after felling? As this is required in some MS legislation, there are risks of unfair competition.	Jörgen Pettersson
If a specifik carbon pool in a project area is expected NOT to differ from baseline it is fair to exclude it. Like fore example dead wood in managed forest,	Erik Nillius
forest felling/refor is not always GHG negative – over a number of cycles there is a positive GHG impact on the atmosphere plus additional carbon stored in HWP	Shane Flanagan
Agree with reforestation being included under forest management, rather than an activity on its own	Shane Flanagan
👁👁👁 What shall be the minimum Activity and Monitoring Period for Forestry?	Anonymous
👁👁👁 What shall be the minimum Activity and Monitoring Period for Forestry?	Moriz Vohrer
How would additionality be considered in member states where landowners are already finanically compensated to plant forestry?	Shane Flanagan
How would additionality be considered for the forest management activity of extending rotations to ensure maximum carbon sequestration before intervention?	Shane Flanagan
Related to quantification/additionally is the question of leakage. Measures reducing forest production should extend analysis of leakage to a larger region?	Jörgen Pettersson
Would you agree that measures that increase forest growth have a smaller risk of displacement of emissions than measures reducing forest production?	Jörgen Pettersson
To retain consistency between EU regulations, how can the climate benefit analysis for FM in the Taxonomy guide the development of the CRCF methodology?	Jörgen Pettersson
For monitoring and reporting of co-benefits, can Forest Europe's criteria and indicators for SFM be considered as a basis for CRCF?	Jörgen Pettersson
Very helpful to see the timeline for 2024 - is there also a timeline beyond 2024 available, especially for other "novel" approaches (EW, OAE)?	Anonymous
Fermentation Carbon Removal, the form of carbon removal that is poised to champion CCS, is not mentioned. Why?	Zoltán Szabó
Fermentation CCS is not BECCS strictly speaking, biorefinery outputs include energy, food, feed and other biomaterials products. Rarely includes electricity	Zoltán Szabó
Will there be separation for combustion based and organic co2 capture? Will oxy-fuel combustion be included? And also where would pulp&paper co2 capture fit?	Altug Ekici
Where are emissions of carbon capture solvents? Aqueous hydroxide solutions or chlorine gas and amine-modified solutions, which release chemical carcinogens?	Anonymous

Related to "universal materiality tests", will CRCF base the CDR quantification on existing industry norms for carbon emission accounting, e.g. ISO14040/44?	Anna Lehner
Fermentation carbon removal is perhaps more akin to DACCS than to BECCS. Moreover, much of the credit generated is unrelated to energy	Zoltán Szabó
Will there be "customized" methodology and assessment rule for Waste-to-Energy CCS, differentiated from DAC and BECCS, for instance on the CR baseline aspect?	XK
The UNFCCC Methodological Expert Panel is meeting this week too: are you aligned on the scope of CDR pathways to be included? Can you work complementarily?	Anna Lehner
Important to include carcinogenic carbon capture solvents (that capture the CO2 from the air/ flue gas) in the LCA as they are not regulated in CCS Directive	Anonymous
Modeling approaches are used for both CCS based and non CCS based approaches for stabilisation of CO2/carbon today and are not "perverse incentives"	Hanna Ojanen
The risk of stable carbon stored in biochar underground does not increase with time vs. stabilisation of mineralised CO2 in geo storage that takes centuries.	Hanna Ojanen
Can the Commission explain how the 3 criteria from CRCF Article 6 (maturity, co-benefits, existing legislation) were used in the prioritisation of methodologies?	Sebastian Manhart
Mineralization potential should not be narrowed only to construction material.	RN
Who would receive biochar carbon removal units? The biochar producer (pyrolysis plant) or the biochar user (farmer)?	Benjamin Munzel
In the live stream, we seem to be stuck on the first biochar slide ...	Anonymous
Why should biochar be more stable in concrete? What happens at the end of life for the concrete? In the Amazon, terra preta lasted a 1,000 years.	Michael Dutschke
when can we reach the presentations and the recordings?	firdevs dogrusever
How does the ask for monitoring distinguish stabilisation of CO2 in geo storage (takes centuries) vs. stability of inert carbon in biochar (stable immediately)?	Hanna Ojanen
the biochar stored in concrete used in a concrete desk, as was mentioned, can still be perm storage. the desk will be crushed and use as road fill, etc.	Gregory Richards
Are you sure that Biochar doesn't make plants cancerigenous? What about soil ecosystem, bacteria and fungi? Doesn't it harm soil ecosystem?	Dorota Retelska
Scenario: Biochar in potting soils. Soil is partially thrown into household waste at some point. Household waste (biochar) goes into incineration.	Benjamin Munzel
The decay curve of biochar is limited to a small part of the biochar (1-10% which can be measured in a laboratory) and can be monitored before soil application.	Anonymous
Do you have information about effects of biochar on food plants and on soil ecosystems (bacteria and fungi)?	Dorota Retelska
what if wood is used in construction and qualifies as long-term storage but already was temporary carbon removal units under a forestry project pre-harvesting?	Violet Jetton
Is the Baseline planned to be for archetypes (business as usual - beton, steel, partly wood) or for existing wooden constructions in the country?	Polina Liepelt
Can substitute factor be used for comparison?	Polina Liepelt
Can you please speak to harmonisation of storage time guidelines for "permanent removals" and "long-lived products"? e.g. re "constructive ambiguity" centuries.	Anna Lehner
when can we get the presentations and the recordings?	firdevs dogrusever
How can EU Deforestation Regulation be leveraged to help ensure sustainable sourcing of wood under CRCF, instead of just RED? Can EUDR supplant RED for wood?	Gregory Richards

Will the total certificates volume be divided into according slices (every 5 years)?	Polina Liepelt
By when send comment to the technical assessment?	Anonymous