Outcome of Public Consultation for Biochar Edition 2025

2025-07-02

Context

The purpose of this document is to summarize the outcome of the public consultation of the methodology Biochar, Edition 2025, as well as disclose all the feedback received and how it was addressed. Feedback received was made anonymous where relevant.

Puro.earth held a publication consultation on the proposed Biochar, Edition 2025, methodology, from **April 3rd 2025 to April 28th 2025** (extended by 4 days, relative to initial plan). The consultation was announced on Puro's website on April 3rd 2025, and in newsletter the same day, followed by other social media announcements and reminders. Further, a public webinar was held on **April 16th 2025** and its recording was made available. The consultation documents included, beside the biochar methodology: an update to the biomass sourcing criteria and a transition plan. After revisions to the text, the methodology was presented to Puro's Scientific Advisory Board, and was ultimately approved on **June 12th**, **2025**. The Edition 2025 is meant to replace progressively Edition 2022, according to the transition plan.

We want to thank all participants, to the working group and consultation alike, for their time and contributions to helping shape a Puro Biochar Methodology that better serves the growing industry and ecosystem.

General observations

1. The consultation showed a major engagement from a wide diversity of stakeholders and locations, totalling 46 organizations, and more than 500 individual comments.
2. Many positive comments supported Puro's thinking on what is a high-quality carbon removal, the level of transparency necessary for achieving it, and the conservative approach taken to biochar persistence in a context of evolving science.
3. Many valuable improvements and clarifications were incorporated into the methodology because of the public consultation process, alongside a dozen of important changes made to maintain a pragmatic balance between usability and stringency.
4. As the methodology is brought into operation, some suggestions received during public consultations, e.g. biochar use in retail (see details below, in section 3.6), may still be considered in the future via minor rule changes.

Overview of main changes introduced following consultation

This section presents the main changes introduced following consultation. The changes are presented by section and/or sub-section.

Most comments were addressed by a clarification or a simple response to the commenter without changes to the text (No change, 43%), the provision of a clarification in the text without affecting the intent of the rule (Clarification, 18%), or minor adjustments to the rules (Minor adjustments, 19%). About 21% of the comments were associated with major changes, i.e. significantly changing the implementation of the rules or their meaning. Half of these comments were related to Section 8 (leakage) which was re-written entirely (hence, classified as major). During Advisory Board, certain changes were not approved and reverted and other changes were clarified or discussed.

Section 1. Introduction

No major change.

Section 2. Point of creation

- Crediting period set to **10 years** instead of 5 years

Section 3.1. General eligibility

- Removed rule to monitor separately each reactor, when a Facility is composed of several reactors, co-located or not (perceived as problematic for both large- and small-scale operations), replaced by adequate representative sampling strategies in section 3.5.

Section 3.2. Baseline

No major change

Section 3.3. Additionality

- Removed rule to disclose financial situation during 5 years prior to retrofit or charcoal repurpose decision (deemed unnecessary, and already covered by other rules on additionality demonstration).

Section 3.4. Biomass sourcing

- **Rule 3.4.11**: Updated biomass methane emission rules now allowing counterfactual assessment to determine the inclusion/exclusion of CH4 emissions, also revising options to assume negligible CH4 emissions from on-site stockpiling, and deletion of contextual paragraph regarding biomass CH4 upstream in supply-chain
- **Rule 3.4.16**: Revised rule regarding plastic impurities, including intentional addition of plastic with a limit of 5%w/w, and distinction between plastic types (whether or not prone to char formation during pyrolysis)
- **Rule 3.4.33**: Removed ban on non-mixing hazardous biomass with other biomass (e.g. sewage sludge) due to potential synergies of co-pyrolysis; but kept the mixing ban for biomass containing high-risk micropollutants. Clarified allowed sequential carbonization of feedstock in same equipment with adequate procedures.
- **Rule 3.4.24**: Revised rule for fossil carbon determination in sewage sludge feedstock, and similar feedstocks, now allowing for reduced analysis over time, or use of local data, if available.
- **Biomass Feedstock Category P** – Following discussion with Puro's Advisory Board, the biomass category P has now been changed to allowed for processing but does not result in CORCs for a more conservative outcome. See further details in the section on Biomass Sourcing Criteria (at the end of this table).

Section 3.5. Biochar production

- **Revision of rules regarding biochar sampling and analyses frequencies**: introduction of two sampling and analysis regimes for biochar properties, focusing on composite sampling, and where monitoring of production conditions can enable reduce testing frequency.
- **New rules on management of carbon monoxide exposure**, as it is an important safety aspect that is not always sufficiently managed by local regulation.

Section 3.6. Biochar uses

- **Rule 3.6.5**: Reduce the burden of proof, for biochar used in pure form, to evidence of delivery, in the absence of diversion risks, rather than systematic requirement of signed attestation from users.
- **Table 3.2, Biochar used in reversible deposits, category GEO2**: changed from not allowed to allowed but not eligible for CORCs.
- **Rule 3.6.11**: Reduced frequency of testing for environmental quality, for heavy metals (once per 12-month period). Testing frequency for PAHs (where analysis is required) remains unchanged. Other organic contaminants remain unchanged.
- **Table 3.2, Biochar use in retail, category R3**: despite feedback received, requesting this category to be made eligible for CORCs under specific conditions, and despite an attempt made to define those

conditions, category R3 remains for now not usable for CORCs after board decision. Puro and the Board, however, remain open to suggestions on how to define the conditions that ensure low-risk of reversal for this use category. More precisely, various commenters have suggested that retail to individuals of gardening products (R3) to be eligible for CORCs despite perceived traceability challenges and potential, albeit context-dependent, reversal risks.

The main arguments put forward were:

- the high price of biochar sold in retail markets makes it economically irrational to use for non-soil applications (lowering misuse and diversion risk)
- the willingness to pay for biochar soil in retails also indicates an awareness from the consumer (lowering misuse and diversion risk)
- the disposal of gardening products eventually ending in solid waste incinerators is regionally specific, and that green waste can be predominantly managed through composting and recycling (low cascading risk)
- the competence of retailers who specialize in biochar sales for gardening products, offering services and support to consumers
- unfair treatment of "retail to individuals" relative to other categories, arguing that absolute zero-risk does not exist, and highlighting the various benefits of retail products (from awareness to agronomic effects)

Some commenters have suggested conditioning the CORC eligibility of biochar retail to individuals, in different manners:

- application of a CORC discount factor for this category, representative of the disposal risks in incineration, reckoning the difference e.g. between the USA and Europe
- limit the type of retailers to those who also work with other categories of use in the built environment

As a result, Puro.earth attempted to change the category R3, to "eligible for CORCs under conditions", and the following conditions were suggested:

1. Retail biochar products are sold, rather than distributed for free
2. Retail biochar products are clearly presented and marketed for eligible applications, i.e. use in gardening applications and similar, and ideally biochar is processed into a ready-to-use product
3. The retailer, which is considered the last tracked user, must attest reception of the products and their planned local (i.e. regional) sale in eligible applications, and disclose its plans for management of unsold products (e.g. adequate disposal or return).
4. For pure biochar products, the emission boundary stops at the retailer's gate and is further complemented by a standardized region-specific assumption for transport by the clients (e.g. 100 km radius transportation). Incorporation into soil is neglected as assumed to be carried out manually.

The conditions above were deemed not sufficient by Puro's Advisory Board. Other options were discussed, but deemed insufficient, and it was preferred to revert to the original suggestion for now to enable approval of the methodology. **Both Puro.earth and Puro's Advisory Board reckon that these products have high environmental value and are open to further suggestions to make this category eligible for CORCs in the future.**

Section 3.7. SDGs

No major change

Section 3.8. Double counting

- Rule 3.8.1: Added explicit mentions of EPDs, RED and similar mechanisms.

Section 4. Environmental, Social and Reversal Risks

No major change

Section 5. Quantification

No major change

Section 6. Carbon stored

- Section 6.2. No major change. Revisions of explanatory text on random reflectance and other clarifications for non-soil applications were made.
- Section 6.3. Removed contextual paragraph on biomass baseline carbon storage in rare cases that caused confusion.

Section 7. Project emissions

- New rule on the use of renewable energy certificates (as per current rule clarification and GSC (BECCS, DACS) methodology)
- For transport emissions, added explicit mention of empty backhaul whenever relevant
- Added details regarding embodied emissions in the case of an asset changing ownership, and further details on amortization
- Revised cut-off criteria (materiality assessment), to be based on expert judgement, following construction industry standards (EN15804+A2).

Section 8. Leakage

- Section 8 was rewritten entirely. The draft for consultation proposed an approach to leakage aligned with Article 6.4 of the Paris Agreement (diversion of existing production and use of competing resources), which was found very complex by the commentors. We changed to following a leakage approach akin to the one used in Puro's Geologically Stored Carbon (BECCS, DACS), and made biochar specific considerations here.

Sections 9-10-11. Monitoring, Measuring and Reporting.

- Multiple comments raised concerns that uncertainty calculations are overly complex and may require external expertise. *Puro notes that this will be addressed by providing adequate tools and templates to facilitate the process*.

Detailed feedback received and responses

In the following tables, we share the comments received and the responses provided by Puro.earth. Comments are shared anonymously. The comments are grouped per section and per consulted documents. Document abbreviations: BCH = biochar methodology; BSC = Biomass Sourcing Criteria; TP = Transition Plan

Document	Section	Rule	ID	Comment	Reply	Action
Additionality Assessment Requirements	2.3	2.3.3	377	Removal suppliers are directed to use "CDM Methodological Tool 02 Combined tool to identify the baseline scenario and demonstrate additionality. Version 7.0 to conduct the baseline determination." This tool includes a barriers analysis including Investment barriers (other than financial return), technological barriers, and common practice test. The additionality section in the BCH section 3.3.1 does not align with the CDM tool. Consider clarifying when the use of a barriers test is appropriate to prove additionality and to differentiate between what is described as financial additionality and investment barriers (other than financial return)	To clarify, in any case, the three components of additionality must be demonstrated. For financial additionality, there are three options given as per our Additionality Assessment Requirements, with different applicability rules. The most common however remains the investment analysis, as biochar projects often generate other revenues than CORCs.	No change
BCH	All	All	435	Consider including more explicit language about biomass sourcing from green waste streams -similar to how forest harvest and agricultural residue are commonly used examples throughout the document -1.2 Biomass Sourcing- "Producers should prioritize feedstocks that do not compete with food production or contribute to deforestation. This involves selecting residues and by-products that would otherwise go unused or be discarded." - using green waste streams as feedstock accomplishes this the best. Including more explicit examples, language, and documentation in the methodology for green waste would incentivize further use and consdieration of green waste as appropriate biochar feedstock	Thank you for the comment We do not believe that emphasizing this aspect further is necessary at this stage, because the wide majority of biochar producers do focus already on residual biomass streams, as opposed to dedicated production of biomass. Further, the rules for sourcing of dedicated biomass are particularly strict, and to a large extent limited to residual land (e.g. marginal, contaminated, etc).	No change
BCH	All	All	436	Consider adding in a more flexible audit path for small biochar producers (under a certain tonnage) to lower the barriers to entry -some small producers may not have the funds and resources to comply with the strict monitoring and data collection outlined above -consider adding a probationary period (<1 year) for small producers that may include more lax standards and less requirements to help onboard them to the puro.earth methodology and be able to gain some CORCs (at a discounted %) as they begin to comply with all regulations	We may consider other future solutions for smallholder, indigenous, or community-based biochar projects.	No change
BCH	Overall	Increasing strength of documentation	415	The more proprietary details we are required , the more damage we risk if NDAs aren't adhered to.	Thank you for your comment and the concerns expressed regarding IP. The Audit Package is shared only with Puro and approved auditors under strict confidentiality rules. It requires	No change

Document	Section	Rule	ID	Comment	Reply	Action
					only the minimum necessary proprietary details to verify compliance—full IP disclosure is not required.	
BCH	Overall	Increasing strength of documentation	416	Have you cross-referenced the methodology with buyer due diligence questionaires? The lack of standardization is very burdonsome.	Puro.earth strives to makes its processes smooth and efficient throughout the entire value-chain. Several buyers or buyer groups have contributed to the working group for this methodology update. The consultation was also open to all stakeholders. Beside the methodology, Puro.earth is also working on several options to align with various buyers or buyers groups to facilitate due diligence processes in general.	No change
BCH	NA	NA	50	The draft 2025 methodology introduces significantly expanded technical, monitoring, sampling, and documentation requirements compared to previous versions. While these changes may enhance environmental integrity, they are also likely to increase the complexity and cost of project development and verification. In light of these added requirements, does Puro.earth anticipate any changes to the current CORC issuance or transfer fees? If so, could you clarify the expected timeline and structure for communicating such updates to project developers and suppliers?	Puro.earth does not foresee an increase in our service fees for the biochar methodology. On the contrary, Puro.earth is committed to working on improving systems and processes to further reduce certification costs and service fees, and increase audit frequencies.	No change
BCH	Overall	Overall	16	"Sinking" is nothing else but SINKING. Charcoal, or if you want to call it Biochar (well produced charcoal shall have NO bio in it whatsoever) cannot be put "as it is" on top of any soil. It MUST be SUNK! Under the soil surface, on a secure depth. If you do not agree, make it very clear for the public what you agree to and not. If you do agree, - make that equally clear. I cannot be so that some producer really SINK the charcoal, however, the huge majority "do other things".	We agree with the importance of incorporating biochar into products and soils. This is part of the rules detailed in section 3.6 and the explanations in section 4.	No change
BCH	Overall	Overall	17	Charcoal (or if you wish to call it, biochar) should not be mixed with any type of compost, that is not 100 % clean. It cannot be that municipal compost is used. That is highly contaminated stuff, that should NOT be allowed as an allowed product to be mixed.	We believe that mixing of biochar with other constituents can have beneficial effects in many situations. Naturally, we require products to be legal and environmentally safe.	No change
BCH	Overall	Overall	18	It should NOT be allowed to pack charcoal with any other soil improver, and sell it to the public. This because we have no control over where it ends up.	In the original draft for consultation Retail to individual (R1, R2, R3) was not an eligible for CORCs. However, after considerable feedback from others (see section 3.6), we have decided to revise the category R3 to make it eligible for CORCs under conditions.	No change
BCH	0	Overall	507	Several comments on KonTiki kilns for biochar making in Africa not being easy or possible to certify under revised Puro Standard biochar methodology.	We understand the concern, but maintain the view that all types of production methods and kilns have to comply with the same rules and it is potentially possible for kilns of various designs to be	No change

Document	Section	Rule	ID	Comment	Reply	Action
					equipped with the measurement equipment to comply with the rules.	
BCH	0	Overall	508	We appreciates the opportunity to contribute to the public consultation on the 2025 Draft Biochar Methodology. We recognize the significant effort Puro.earth has invested in strengthening the framework for biochar-based carbon removals and support the intent to enhance transparency, scientific rigor, and environmental integrity. Upon internal review, we have identified several areas of the proposed methodology that present operational challenges or merit further clarification. Below we outline key observations and suggestions focused on four critical areas: Capacity Expansion Audits, Monitoring Requirements, Lab Testing Frequencies, and Biomass Sustainability.	Thank you for the expressed support. We have answered to all individual comments in the rest of the documents.	No change
BCH	0	Overall	514	General Feedback Commendation: The Puro.earth team is commended for leading the effort to update the Biochar Methodology, particularly for revising permanence calculations. The Methodology avoids overly conservative approaches (e.g., Woolf et al., 2021 equations) and resists premature adoption of an inertinite standard, which is deemed scientifically dubious and commercially misguided. The proposed path forward on permanence is considered reasonable despite industry pressure to adopt inertinite comparisons, especially in Europe. Primary Concern: The updated Methodology introduces significant implementation and usability issues, disproportionately increasing costs and limiting adoption, particularly in North America. Key issues include overly burdensome requirements, overprotective end-use restrictions, and Eurocentric material/analysis standards that are misaligned with North American practices.	Thank you for your thoughtful comments and support regarding our approach to permanence. We appreciate your recognition of Puro's balanced stance amid evolving science. Puro remains committed to aligning with the latest science as it develops. Regarding your concerns, we have addressed each of them in detail in the relevant sections of this document (see below)	No change
BCH	General	N/A	323	While we appreciate the added detail and clarity, expanding the methodology from 15 to 136 pages is a dramatic shift. This level of prescriptiveness risks making the approach overly esoteric and restrictive, potentially deterring even high-quality projects that could benefit from carbon credit revenue. For example, stating that an Environmental Impact Assessment is best practice, but not required, but then describing that this information needs to be used for quantification in Sections 8.1.4, 8.3.2, may not be realistic for a lower technology project using flame curtain technology. Similarly, requiring a project to	Thank you for the comment. We agree that there must be a balance between high-level principles and transparent, detailed rules. Many of the new provisions are not new requirements per se, but rather formalizations of existing procedures and clarifications of recurring questions raised during past years of implementation. We understand that the level of detail may feel overly prescriptive. Based on the feedback received, several rules have been adjusted to introduce more flexibility where feasible—for example, in the	Clarification

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				provide a mass energy balance assessment and not providing an option to use one developed by the technology provider may prove to be additional burdens to specific technology types that are technically included as eligible technologies within the methodology. Carbon credit methodologies have tradtionally included certain levels of assumptions and conservativeness. While increased detail allows for more accuracy, the methodology appears to provide no room for conservativeness, even in what may be extremely de minimis emissions (ex. specific leakage scenarios related to baseline feedstock conditions, etc.)	requirements for liquid co-product storage, biochar sampling and analysis, and accounting for baseline methane emissions from biomass. Regarding the Environmental Impact Assessment (EIA), the methodology does not require an EIA if it is not mandated by the local jurisdiction. As stated in Section 8, either a regulatory EIA or a standalone environmental and social assessment is acceptable. This distinction has been further clarified in the revised text.	
BCH	Glossary of Terms	pg. 4	327	We are aware that this is also established and referenced within the Puro.Earth General Rules 4.1. However, we are wondering if Puro.Earth could clarify why "leakage" and "indirect emissions" are being used interchangeably? Leakage refers to unintended increases in emissions caused by a specific carbon project, while indirect emissions are broader, expected emissions that occur within a company's value chain. The GHG Protocol defines indirect emissions as "emissions that are a consequence of the activities of the reporting company, but occur at sources owned or controlled by another company". (https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporing-Standard_041613_2.pdf) This is a phrase commonly used in carbon footprinting, and includes Scope 2 emissions, which of course are not seen as indirect from a carbon credit quantification perspective. Leakage is unintended consequences, "when a project changes the availability or quantity of a product or service that results in changes in GHG emissions elsewhere". (https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf). The ICVCM defines four types of leakage, including activity shifting, ecological, market, and upstream/downstream emissions, but does not use the term "indirect emissions" to replace the term "leakage". (https://icvcm.org/wp-content/uploads/2024/02/CCP-Section-5-V2-FINAL-6Feb24.pdf) When Puro refers to "indirect emissions", they are referring to leakage, not true indirect emissions. Using these words interchangeably when other carbon credit registries do not will cause greater confusion within the industry and the general public, and we recommend ceasing the use of these words interchangeably.	Thank you for the comment. We acknowledge that our choice of words can be confusing. We mean with leakage the same as GHG protocol (secondary effects) and ICVCM (market shifting etc). We will remove the confusing references to indirect emissions (scope 2), and revert to the use of the term leakage.	Minor adjustment
BCH	Whole document	Whole document	22	Due to the length and complexity of the document, exact submission requirements are unclear to the reader. Add an appendix that provides a linear overview of all the required documentation and evidence for all Facility, Output, and Capacity Expansion Audits. This resource could	Puro.earth will be providing clear instructions in its operative documents (Audit Document Index, Audit Package Templates, Guidance and Templates). The operative documents will have	No change

Document	Section	Rule	ID	Comment	Reply	Action
				mirror the current Audit Document Index and ideally be even more specific. Entries/line items could feature dependencies, e.g., if they need to be submitted only if certain conditions are met.	explicit links to all the corresponding rules, alongside training and guidance material.	
BCH	Whole document/1/4.2/6.2	Whole document	21	The proposed methodology is too long and contains some extraneous information and explanatory and/or academic content that distracts from core MRV requirements. Seek to reduce the length of the protocol by moving background content—such as some of the material at the beginning of section 1, the reversal risk discussion in section 4.2, and the background on carbon storage losses in section 6.2—into separate factsheets or appendices that can complement but not complicate the main methodology.	Thank you for the thoughtful feedback. The methodology aims to serve a diverse audience by combining requirements with contextual explanations to support transparency and understanding of various stakeholders. That said, we will also provide streamlined operative documents (Audit Document Index, Audit Package Templates, Guidance and Templates) to meet the needs of users seeking concise, action-oriented content.	No change
BCH	general	0	148	There is significant mention of the requirements for third-party verification throughout the methodology; however, it would be helpful to have a dedicate section related to the verification requirements. This would provide additional clarity on which elements of the detailed methodology are classified as criteria and must be verified to ensure project conformance with the methodology.	See answer to comments # 21 and #22. As part of this supportive documents, we also plan to develop guidance and training for auditors.	No change
BCH	General	0	317	There is undeniably an extra cost of the compliance burden introduced by the updated methodology. We fear that some projects will become less financially viable (should they choose to continue in the program). We encourage Puro.earth to consider other incentives such as: more regular credit issuance, or lower cost of verifiying SDG impacts thus ensuring that broader environmental and social value of biochar is appropriately rewarded.	See reply to comment #50, regarding puro fees and audit frequencies. The revised rules are now addressing some of those concerns. Regarding laboratory analyses, extensive changes have been made to the corresponding rules (in 3.5 and 3.6).	Major revision
BCH	General	0	405	The additional requirements from different sections (additional laboratory analyses, an EIA requested for each facility audit, etc.) will increase the costs for projects, especially their first issuance. This can create a strong barrier to entry for new projects. How will Puro communicate on these costs? Will it increase audits pricing?	See reply to comment #50, regarding puro fees and audit frequencies. Regarding EIA, these are not required by the methodology if not required by regulation. Regarding laboratory analyses, extensive changes have been made to the corresponding rules (in 3.5 and 3.6).	Major revision
BCH	Overall	0	334	Overall very supportive of the proposed changes. Nova Pangaea Technologies (NPT) plans to deploy our patented process to convert biomass residues to biochar, 2G ethanol, and the associated carbon sequestration is a key value driver. Thus the new propsals & consultation are very important to us, and also to provide an effective famework to support the growth of the entire biochar based Carbon Dioxide Removal market. NPT has a Joint Developmnt Agreement with IAG/British Airways and Lanzajet, and UK government AFF funding support, for our first project in the UK which will generate over 400 k tonnes of biochar (and	Thank you for the expressed support.	No change

Document	Section	Rule	ID	Comment	Reply	Action
				hence over 800k tonnes of CO2 Removal). We plan to replicate project Speedbird with partners in other countries, and so in 10 years NPT's process technology will be generating millions of tonnes of biochar based CDR. We support these clarifications and updates to the methodolgies. We particularly support the increased monitoring required to ensure quality and the update to the persistence calculation.		
BCH	1.2	1.2. Biomass sourcing	440	Quote: "energy crops like switchgrass and fast-growing trees can be cultivated specifically for biochar production, provided they are cultivated with adequate land use considerations" Comment: Refer to specific land use procedures Rationale: Too vague; can easily be circumvented or judged very differently depending on the auditor	The introduction text does not include rules, but simply presents important topics. The rules re: eligibility of dedicated biomass crops are in separate sections and documents.	No change
BCH	1.1	Biochar risks of reversal	498	The methodologies must be iron-clad, not reliant on fancy-schmancy aerial-magic mathematics – which is what CQC and such snakes relied upon.	Thank you for your comment. The risk of reversal for the permanent fraction of the carbon in the biochar is considered low beyond the point, when biochar is demonstrated to have been applied to the land or incorporated into a product for the permitted uses.	No change
BCH	1.1	p. 7	120	It says "In natural ecosystems, the biomass eventually decomposes." You should add that combustion is also possible here, since this creates the baseline scenario and combustion can occur through wildfires.	Thank you for your comment regarding biomass decomposition pathways. We consider wildfire combustion to be encompassed within the broader term "decomposition" as used in this context, which includes all natural processes that return biomass carbon to the atmosphere (biological decay, oxidative processes, and combustion events).	No change
BCH	1.1	p. 7, paragraph under section entitled "Biochar as a versatile material"	168	We suggest reconsider the inclusion of biocoal or biocoke as biochar. At this moment, the text says the following: "Another possible application of biochar is its use as biocoal or biocoke in steel production and other oxidative industrial processes (Ibitoye et al., 2024), where it serves as a renewable substitute for fossil-based reductants, contributing to the decarbonization of heavy industries but does not contribute to carbon removal (Safarian, 2023)". The original biochar definition was focused on CDR.	Thank you for highlighting this terminological distinction. We agree that biochar's original definition was focused on CDR, but that the term has been evolving. We agree that biochar's core value for carbon dioxide removal (CDR) lies in its use in durable carbon storage applications. We clearly exclude non-carbon preserving uses—such as biocoal or biocoke used in oxidative industrial processes—from CORC eligibility. However, the rules refer to the term "biochar" as an umbrella term for pyrolyzed biomass for the sake of simplicity, e.g. when the use is not yet determined. We believe this is easier to read and follow than to refer to a neutral term like "char" or "carbonized biomass".	No change
BCH	1.1	p. 7, paragraph under section entitled "Biochar for	169	line 6. where it says "aromatic structures", I suggest "condensed aromatic structures".	The sentence was modified accordingly.	Clarification

Document	Section	Rule	ID	Comment	Reply	Action
		carbon dioxide removal"				
BCH	1.1	p. 7, paragraph under section entitled "Biochar for carbon dioxide removal"	170	line 7. where it says "biochar used in carbon-preserving applications". This was inherent in the original definition of biochar. Now it has changed to include biocoal, which is confusing.	See answer to comment #168	No change
BCH	1.1	p. 7, paragraph under section entitled "Biochar for carbon dioxide removal"	171	Almost end of paragraph, where it says "its least aromatic structures". Wouldn't it be "its least condensed aromatic structures"? Lignin has also aromatic structures, but not condensed.	The sentence was modified accordingly.	Clarification
BCH	1.1	p. 7, paragraph under section entitled "quantfying biochar persistence"	172	Line 3, where it says "These models have been perceived as conservative, were proposed for use in national greenhouse inventory under the UNFCCC". Two comments here. One is that the sentence might need some rewriting. Secondly, it was proposed in an appendix.	The sentence was modified to mention the appendix (i.e. non required reporting).	Clarification
BCH	1.1	p. 8	138	The explanation of biochar's persistence and CORC200+ could benefit from clearer links to quantification methodologies (referenced later in Sections 5 and 6). Consider explicit direction to these sections (e.g., "For quantification approaches supporting CORC200+, see Section 5.3 and 6.1").	We have avoided making cross-references to other sections of the methodology in the introduction, purposefully, as nearly any paragraph of the introduction can be related to one or multiple subsections of the document.	No change
BCH	1.1	0	404	Concerning CORCs 200+, will it be retrospective for existing stocks? Does Puro intend to communicate on this constituting a premium for its CORCs?	For already issued CORC100+, no retroactive changes. We communicate Biochar edition 2025 and CORC200+ as evolution of the standard and science.	No change
BCH	1.2	General	300	Include a new biochar use case, as backfill (or filler material) for depeleted mines (shafts and volumes, underground and shallow surface), primarily coal mines but applicable to all underground inactive volumes that can be prepared as long-term biochar storage systems.	Thank you for your suggestion. Please note that the introduction provides examples of common use cases rather than an exhaustive list, while Section 3.6 specifies the criteria for eligible biochar storage applications, including requirements for durability, monitoring, and verification. Mine backfilling is indeed addressed in Section 3.6 of the methodology: check uses GEO2 and GEO3 in Table 3.2.	No change
BCH	1.2	p. 8, paragraph under "Origins"	173	Line 2, where it says "which presumably involved adding charcoal to nutrient-poor tropical soils to enhance its fertility". To my understanding, it is unclear whether this was the case, or they were middens. This is the text from the conclusions of the paper referred in the text (Glaser and	Thank you for your careful reading and this important clarification. We agree the historical context should reflect the current scientific understanding more precisely. We have modified the	Minor adjustment

Document	Section	Rule	ID	Comment	Reply	Action
				Birk, 2012): "From scientific data discussed in this review it is very likely that terra preta was not intentionally created to improve soil fertility at large scales, at least not at the beginning. All available scientific data fit a genesis from midden eventually combined with home garden agriculture. It is most likely that (unintentional) creation of a fertile soil (terra preta) attracted more and more people and/or favoured population growth managing more and more resources (biochar, wastes, excrement) which set in motion selfenhancing and self-organizing processes."	text accordingly to remove the presumption of intentional creation.	
BCH	1.3	CORC 200+	110	There will be significantly less CORCs produced with the 200 year metric. Current high level calcualtions for a project case study show a 25% reduction in annual CORC production - before all the other deductions required by the new methodology requirements. This is penalising for the business case. Is the 200+ year CORC going to be seen as more valuable by buyers / have an increased market value? 100 years is already considered permanent in the carbon markets.	According to our calculations, differences between Edition 2022 (equations derived from Woolf et al. 2021) and Edition 2025 (equations derived from Puro data analyses) do not lead to such large differences (25%) as suggested by the commenter. The error might be in using the Woolf equation for a time horizon of 200 years; which is not what Edition 2025 does. The Puro revised model is based on a different dataset and extrapolation approach (power decay). Differences are expected to be in the range +/- 5% in most situations.	No change
BCH	1.3	p. 10	272	General Comment: 1. Substantial increase in complexity The 2025 draft methodology introduces 270 individual rules, compared to 42 in the 2022 version—a nearly seven-fold increase. While we appreciate the intent to bring greater scientific rigor and specificity, this substantial rise in requirements greatly increases the complexity for project developers. Under the 2022 methodology, project teams already faced significant demands for documentation, reporting, and audit preparation. The additional layers introduced in 2025 may create unintended barriers to entry, particularly for projects operating with limited technical or financial resources. Example: The draft introduces highly interdependent rules, such as Rule 3.5.8, which establishes design measures to ensure complete combustion of co-products. This rule is then referenced again in Rule 3.5.17 a.ii, which requires project developers to prove negligible CH_4 emissions by demonstrating compliance with at least six points from those design measures. The level of prescription in the rules is deep, and these cross-references demand careful cross-checking and create a complex web of compliance steps that amplify the risk of inadvertent errors or inconsistencies.	Thank you for the thoughtful feedback. The methodology aims to serve a diverse audience by combining requirements with contextual explanations to support transparency and understanding of various stakeholders. That said, we will also provide streamlined operative documents (Audit Document Index, Audit Package Templates, Guidance and Templates) to meet the needs of users seeking concise, action-oriented content.	No change

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				Suggestion: We recommend considering a tiered or modular compliance structure, where rules could be categorized by their criticality (e.g., essential vs. supporting requirements). This would enable project developers to better prioritize efforts and reduce administrative burden without compromising the scientific integrity of the standard.		
BCH	1.3	p. 10	273	General Comment: 2. Feasibility of implementation and audit timelines Another major concern is the practical feasibility of implementation, particularly regarding the audit and verification process. Even under the 2022 methodology—where the documentation burden was significantly lighter—our experience showed that initial facility and output audits often took over three months, requiring multiple rounds of RFIs (Requests for Information) between the VVB and project teams. The 2025 draft introduces far more detailed compliance obligations without providing clear indications of how the verification process will be streamlined or supported. With 270 rules in place, it is unclear how projects will be evaluated in a timely and efficient manner. This raises the risk of bottlenecks at the verification stage, delays in credit issuance, and increased costs both for project developers and for Puro's auditing ecosystem. Example: Detailed requirements for life cycle analysis (e.g., Sections 6, 7 and 8) rely on cross-referencing of multiple emissions sources, allocation methods, and activity-specific baselines. This level of granularity will require much more extensive data preparation, auditor training, and validation cycles. Suggestion: We recommend that Puro provide their strategy and guidance documents alongside the new rules, including details on auditor training programs, and possibly the creation of simplified templates or checklists to help ensure that audits remain feasible within a reasonable timeframe. Setting clear expectations for maximum RFI rounds or approximate audit durations could also help manage both developer and auditor workloads more effectively.	See answer to comment #272	No change
BCH	1.3	p. 10	274	General Comment 3. Lack of real-world alignment and equity risks The 2025 draft methodology displays a strong academic and technical	Section 8 has been revised and simplified. Section 10 will be supported by Puro teams, tools, and further	No change

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				orientation, but it appears to have been developed without sufficient consultation with project developers actively operating in diverse global conditions. Many of the new requirements assume the availability of comprehensive datasets, advanced metering infrastructure, and detailed operational records—conditions that are often not available in underserved regions, where carbon removal projects could have the greatest positive impact. By imposing highly technical, uniform standards without flexibility for local realities, the methodology risks excluding projects from regions with less infrastructure, fewer resources, or language barriers. This trend could unintentionally concentrate participation among developers in high-income regions or large organizations with dedicated technical teams, rather than promoting a globally inclusive carbon removal market. Example: Section 8. Complex Quantification & Environmental Accounting. The methodology requires sophisticated thorough assessment of indirect emissions (leakage), including potentially complex factors like land-use change. This demands specialised technical expertise, advanced software tools, and potentially expensive third-party studies which may not be readily accessible or affordable for developers in resource-constrained regions. Section 10. Rigorous Monitoring, Data Management & Uncertainty Analysis: systematic data collection with a complex statistical assessment of uncertainty for the final carbon removal calculation is required. This necessitates significant planning capacity, technical skills in data management and statistics, robust data archiving systems, and access to calibrated measurement equipment, which can be challenging for smaller operations or those with less formal infrastructure. Suggestion: We encourage Puro to consider introducing flexible compliance pathways that account for regional and operational realities, such as: -Alternative evidence options where full datasets are unavailable; -Simplified reporting tiers for small- and medium-scale projects; or -Country- or region-specific adjustments reflecting infrastructure constraints. This would ensure that the methodology remains scientifically rigorous	documentation. Adjustment to project scale and location have to some extent been considered in the revisions. Please see also answer to comment #272.	

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				yet globally accessible, in line with the spirit of scaling equitable climate solutions.		
BCH	1.3	p. 10	275	General Comment: 4. Format is opaque and AI-inaccessible The format of the 2025 draft methodology poses a significant challenge for accessibility and comprehension. The structure is not machine-readable and lacks clear segmentation or indexing of the rules. Even after testing several AI models and advanced text-parsing tools, it was not possible to generate a comprehensive rule list, a proper summary, or a mapping of rule interdependencies without extensive manual effort. In an era where project developers increasingly rely on digital tools for document analysis, project management, and compliance tracking, document structure is critical. Poor formatting forces developers to invest disproportionate time and resources into simply understanding the rules—before even beginning compliance efforts. This disproportionately impacts smaller developers and organizations with limited administrative or legal support. Example: Rules and sub-rules (e.g., Sections 2.1 and 3.5) are embedded within long paragraphs without consistent numbering styles, hyperlinks, or section summaries. Unlike modular standards (such as Verra's or Gold Standard's methodologies) that include annexes, tables, and indexed lists for easy navigation, the Puro draft is presented as continuous text, making it hard to reference specific requirements quickly. Suggestion: We recommend that Puro release the final methodology with a structured, machine-readable format, including: -A standalone rule index (e.g., listing all rules X.Y.Z. with a short descriptor); -Linked sections or references for cross-referenced rules; -A glossary of defined terms; and -An optional simplified developer handbook or "how-to" guide. Making the methodology accessible to digital analysis would significantly empower project developers to digest, cross-check, and comply with the rules efficiently—enhancing both uptake and quality.	See answer to comment #272	No change

Document	Section	Rule	ID	Comment	Reply	Action
BCH	1.3	p. 10	276	General Comment: 5. Heavy reliance on specialists increases barriers to entry The 2025 draft methodology appears to require significant specialist expertise, particularly in life cycle assessment (LCA), emissions modeling, and systems engineering. While scientific robustness is crucial, the level of technical detail embedded in the methodology raises the barrier to entry considerably, potentially limiting participation to developers with access to advanced consulting support or in-house technical teams. Many carbon removal developers, especially those operating innovative pilot projects or working in emerging markets, do not have immediate access to PhD-level specialists in LCA modeling, emissions allocation methods, or energy balance calculations. Forcing developers to engage third-party consultants or invest heavily in technical upskilling to interpret and comply with the methodology will drive up project costs, reduce diversity among project types and regions, and slow overall market growth. Example: Sections 6, 7, and 8 require detailed allocation of greenhouse gas emissions across energy co-products and by-products of biochar production. The standards for attribution (e.g., energy-based allocation, avoided emissions claims) are sufficiently technical that even experienced sustainability professionals would likely require specialist LCA consulting to execute accurately and defensibly for audits. Suggestion: We recommend that Puro consider offering for review with this methodology their planned official calculation templates, worked examples, and standardized emission factor databases wherever possible, especially for common project scenarios. Additionally, offering different levels of methodological rigor based on project size or risk profile could allow smaller or early-stage projects to participate without sacrificing methodological integrity.	See answer to comment #272. Regarding LCA for project emissions, as well as uncertainty calculations, Puro.earth is committed to improve the tooling available and facilitate the work, without compromising on the integrity of the removal units. Adjustment to project scale and location have to some extent been considered in the revisions.	No change
BCH	1.3	p. 10	277	General Comment: 6. Lack of transparency on contributors and potential biases Another concern is the lack of transparency regarding the primary contributors and authors of the 2025 draft methodology. Unlike other	Thank you for your comment. Puro Standard methodologies are written by multiple internal authors, each contributing with their expertise and discussing the open questions with other experts. Working Group members have contributed with ideas and	No change

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				major carbon standard organizations, which routinely disclose lead authors, technical working group members, and external reviewers, the Puro draft does not identify the individuals or teams responsible for the methodology's design and drafting. Clear attribution is important for several reasons: -It provides transparency regarding potential research preferences, methodological biases, or academic leanings that could influence the structure of the standard. -It enables open dialogue between project developers and methodology designers, allowing clarifications, feedback, and improvements to be more collaborative. -It builds trust by showing that a diverse, experienced, and multidisciplinary group has contributed to the final document. Example: In the case of this draft, it is observable that Elias Azzi is the most frequently cited researcher and has also been the principal presenter of the methodology to stakeholders. However, without official attribution or an editorial acknowledgment section, it is difficult to assess the extent to which the methodology reflects a broader consensus versus the views or research orientations of a limited group. Suggestion: We encourage Puro to formally recognize the key contributors, reviewers, and advisors involved in drafting the methodology, ideally including: -A brief editorial note or appendix listing contributors and affiliations; -Disclosure of any relevant academic or industry ties; and -A summary of stakeholder engagement processes (e.g., consultations held, developer feedback incorporated). Doing so would enhance transparency, accountability, and stakeholder confidence in the robustness and fairness of the standard.	suggestions, but not to writing of rules. Working group members valuable contribution has been acknowledged publicly in various communications; but they have not formally given to consent for publishing their names. The scientific articles are referenced with normal practices where they are used in the methodology document for motivating the requirements or in the equations. We aim to review and adopt to the latest scientific advancements that are available at the time of update, but at the same time maintain our conservative and cautious approach in methodology evolution. In the end, Puro Standard as institution is accountable for the final text together with the Advisory Board that has the governance role of the methodologies and General Rules. With our current collaborative way of working it is hard to list all contributors and even harder to keep track of which contributions make it to the final version.	
BCH	1.3	p. 10, paragraph under "Biochar applications and co-benefits"	174	Line 7, After the sentence that ends "from water", I would say, in a new sentence, that not all benefits can be simultaneously maximised and that a compromise between them will inevitably occur.	The suggestion was incorporated.	Clarification

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BCH	1.3	p. 10, paragraph under "Biochar applications and co-benefits"	175	Third line starting from the end of the paragraph, up, sentence that ends with "types and agricultural practices", I would add "and biochar properties, e.g., available nutrients therein or biochar liming equivalence".	The suggestion was incorporated.	Clarification
BCH	2.1 & 3.6	2.1.2, 3.6.4, 3.6.8, 3.6.1	48	Some of the requirements outlined in the draft methodology — such as disclosure of the location and amount of biochar use, delivery dates, detailed financial data, and co-product revenue — may involve commercially sensitive or proprietary information. This is particularly relevant for CO_2 Removal Suppliers operating as intermediaries, who depend on commercial agreements with multiple upstream and downstream partners (e.g., biomass providers, technology vendors, and off-takers). In such cases, the Supplier may not have full control over the right to disclose this information and may be bound by NDAs or commercial confidentiality clauses. Requiring full-chain monitoring based on third-party data that falls outside the project boundary could lead to unrealistic verification expectations. Could Puro.earth clarify whether mechanisms will be introduced to protect such commercially sensitive data, and to what extent confidential business information can remain private during verification and public disclosure processes?	Thank you for your comment. Much of the information mentioned is required solely for validation and verification purposes and is shared only with Puro and its appointed auditors, all operating under strict confidentiality agreements. This information is not made public, and only data explicitly marked for public disclosure will be available in the Puro Registry. There is no significant change from Edition 2022 to Edition 2025 in terms of public disclosure requirements.	No change
BCH	2.1	2.1.3	247	Prefer “any relevant supply-chain partners, external operators, or any other relevant involved party”	Rule 2.1.3 was edited accordingly, to focus on ***relevant*** partners, operators, or parties. Likewise, a similar sentence was edited in rule 2.1.2, to follow the same logic: "To enable collection of the necessary data for verification, the CO_2 Removal Supplier must establish clear responsibilities and liabilities with relevant supply-chain partners, external operators, or other involved parties." This now puts the focus on the goal (collecting necessary data for verification) from the ***relevant*** actors.	Minor adjustment
BCH	2.1	2.1.3.	441	Quote: "The CO2 Removal Supplier is the party that retains the sole rights to claim CORCs from the biochar carbon removal activity, and thereby must contractually agree with any supply-chain partners, external operators, or any other involved party that they have no such right"	The sentence was reformulated as follow: "and must therefore establish, through contracts or similar documents, that any relevant supply-chain partners, external operators, or other involved parties have no such right."	Minor adjustment

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				Comment: Adjust all relevant contracts or similar documents accordingly, notably those for spot sales. Also make wording on invoices more explicit Rationale: Avoid doubt with partners and remove all risk of subjectivity in auditor's jugement of this point	We note that the details on double-counting are in section 3.8, as indicated in this rule.	
BCH	2.1	General	301	Provide use case where CO2 removal supplier is both biochar and biomass producer. One activity (entity) that performs complete CO2 removal, from atmospheric capture through coversion into biochar to permanent storage.	The comments asks for an example of biochar project where the CO2 Removal Supplier is both biochar producer and biomass provider. An example can be a farmer which has installed a pyrolysis unit to supply heat to its premises and co-produce biochar. The farmer uses agricultural residues and woodchips from own land management.	No change
BCH	2.2	2.2.1	55	A clarification of the definition of a Mobile production facility needs to be given. Does this only refer to high-technology pyrolysis systems which are mobile or does it include artisanal biochar production as well?	The definition is agnostic of the technological choices. The critical factor is whether the operator is planning to transport its equipment to different locations for production of biochar, as part of its normal way of operation. Hence, the clarification is deemed not necessary. The eligibility of a specific technology is subject to rules in section 3.5.	No change
BCH	2.2	2.2.1	56	Production Site: How is the output quality and biomass input checked? How is fraud prevented? This should be defined.	The concerns expressed by the commentor are addressed in section 3 (section 3.4 for biomass, and section 3.6 for biochar quality). Monitoring procedures will need to be detailed in the Facility's monitoring plan, in line with the eligibility rules in Section 3. For presentation of fraud: the measures in place primarily emerge from Puro's General Rules, taken the form of monitoring and reporting, regular 3rd party audits, oversight of auditors, and management of complaints/grievances.	No change
BCH	2.2	2.2.1	280	Some of our projects involves a modular production setup designed to operate in a specific location for an extended period (e.g., 1+ years), much like a stationary facility. However, this equipment is intended to be later moved to a new, distinct location (within the facility spacial extent) for subsequent extended periods of operation, rather than functioning as typically described for mobile facilities that are transported to several locations based on biomass availability within a defined spatial extent. This specific operational model, which involves significant multi-year periods of stationary operation followed by full relocation, does not appear to fit precisely into either the current 'Stationary' definition, which implies a single fixed location, or the 'Mobile' definition, which describes equipment transported to multiple locations, often grouped in fleets	Thank you for the insightful comment. The situation described is considered a stationary facility; however, when relocation occurs, an update to the facility audit—or in some cases, a new facility audit—may be required, as the relocation can constitute a new project. We added an example to clarify this in the methodology text.	Clarification

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				operating within a geographical area. For clarity in future versions of the methodology and to accurately categorize projects with this type of operating structure, we suggest considering wording that accommodates "modular, relocatable stationary facilities" designed for multi-year operations at distinct, sequential sites. This could involve a clarification within the existing rules or the introduction of a specific category to ensure appropriate application of the methodology's requirements.		
BCH	2.2	2.2.1	499	We will be operating in 5-8 sites in Kenya – 600km apart so think of us "diverse range operators".	Thank you for the comment. Puro.earth is aware of such diverse operating models, and the methodology is designed to accommodate a range of project setups. Suppliers can register multiple facilities, which is a common and supported practice.	No change
BCH	2,2	2.2.1 a+b	372	The protocol allows for mobile and stationary production units. Ensure that the transportation emissions for mobile units are included in the project condition emission assertion for complete GHG accounting and land use for the stationary facility.	Thank you for the comment. The two aspects related to project emissions, covered in section 7. We confirm that direct land use change (for both facility types, see rule 7.4.4) and transportation emissions for mobile units are in the scope of project emissions (see rule 7.3.12), and required by the methodology.	No change
BCH	2.2	2.2.1 b.ii.	121	I do not think mobile pyrolysis boundaries should only be allowed to operate within a single country. This could be difficult and costly for companies operating mobile pyrolysis within smaller countries or those that operate on country borders. I'd recommend that the Host Country is the default of the Facility Location.	Thank you for the comment. After careful consideration, we continue to consider the limitation to national boundaries necessary at this stage. Cross-border operations may be addressed in the future, once specific cases arise and sufficient practical details are available to support informed rule development. Besides, we noted that the Example given following rule 2.2.1 was inaccurate (referring to another version of the rule). The example was reworded to match with rule 2.2.1.	Clarification
BCH	2.2	2.2.2	229	Crediting period shall be at least 25 years, only that guarantees investments in biochar production technology and makes the CORC production sustainable (i.e. construction of biochar facility necessarily causes emissions, which should be allocated to longer operating period in order for the production to be sustainable). Suggestion: crediting period can be renewed at least 4 times	Based on stakeholder input, the crediting period has been revised to 10 years, renewable twice. To activate each renewal, a new Production Facility Audit is required, which must be conducted against the latest version of the methodology and the Puro Standard General Rules. This ensures continued alignment with evolving standards and best practices. As per current General Rules, only two renewals are allowed, meaning crediting is limited to a maximum of 30 years per facility. Beyond this, CORC issuance is not permitted unless the General Rules are amended. Discussions on lifting this	Major revision

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					renewal cap are ongoing and require coordination with external frameworks (e.g., EU CRCF, ICVCM, CORSIA) to ensure cross-scheme compatibility. We recognize the importance of long-term investment certainty and will continue to review this topic in broader policy forums.	
BCH	2,2	2.2.2	373	5 year crediting period is insufficient to incentive the high technology solutions with higher capital investment to FID. Extension periods are guaranteed and will not be viewed favorably by investors at FID and could curtail wide scale deployment of high technology solutions. Consider a longer crediting period for all projects or a tiered system in alignment with capital investment required, higher investment get longer crediting period. Duration of the crediting period should align with the barriers test, i.e.. technology barriers, market saturation, institutional barriers etc.	Based on stakeholder input, the crediting period has been revised to 10 years, renewable twice. To activate each renewal, a new Production Facility Audit is required, which must be conducted against the latest version of the methodology and the Puro Standard General Rules. This ensures continued alignment with evolving standards and best practices. As per current General Rules, only two renewals are allowed, meaning crediting is limited to a maximum of 30 years per facility. Beyond this, CORC issuance is not permitted unless the General Rules are amended. Discussions on lifting this renewal cap are ongoing and require coordination with external frameworks (e.g., EU CRCF, ICVCM, CORSIA) to ensure cross-scheme compatibility. We recognize the importance of long-term investment certainty and will continue to review this topic in broader policy forums.	Major revision
BCH	2,2	2,2,2	523	The 5-year crediting period (with two possible renewals) outlined in the PuroEarth Biochar Methodology for CO_2 Removal (the "Biochar Methodology") is insufficient to incentivize biochar technologies requiring higher capital investment and enable progression of these projects to a final investment decision ("FID"). The uncertainty around renewal eligibility may deter investment and limit large-scale deployment of advanced solutions. We recommend that PuroEarth consider either extending the crediting period for all projects or implementing a tiered system based on required capital investment—ensuring projects with higher upfront costs qualify for a longer crediting period.	Based on stakeholder input, the crediting period has been revised to 10 years, renewable twice. To activate each renewal, a new Production Facility Audit is required, which must be conducted against the latest version of the methodology and the Puro Standard General Rules. This ensures continued alignment with evolving standards and best practices. As per current General Rules, only two renewals are allowed, meaning crediting is limited to a maximum of 30 years per facility. Beyond this, CORC issuance is not permitted unless the General Rules are amended. Discussions on lifting this renewal cap are ongoing and require coordination with external frameworks (e.g., EU CRCF, ICVCM, CORSIA) to ensure cross-scheme compatibility.	Major revision

Document	Section	Rule	ID	Comment	Reply	Action
					We recognize the importance of long-term investment certainty and will continue to review this topic in broader policy forums.	
BCH	2.2	2.2.2	408	"The Crediting Period can be renewed twice by successfully undergoing a new Production Facility Audit, against the latest version of the methodology and Puro Standard General Rules. ". What comes after these two renewals?	Based on stakeholder input, the crediting period has been revised to 10 years, renewable twice. To activate each renewal, a new Production Facility Audit is required, which must be conducted against the latest version of the methodology and the Puro Standard General Rules. This ensures continued alignment with evolving standards and best practices. As per current General Rules, only two renewals are allowed, meaning crediting is limited to a maximum of 30 years per facility. Beyond this, CORC issuance is not permitted unless the General Rules are amended. Discussions on lifting this renewal cap are ongoing and require coordination with external frameworks (e.g., EU CRCF, ICVCM, CORSIA) to ensure cross-scheme compatibility. We recognize the importance of long-term investment certainty and will continue to review this topic in broader policy forums.	Major revision
BCH	2.2	2.2.2	500	"The Crediting Period shall not overlap with another Crediting Period". An example here would be useful.	To clarify, when renewing the crediting period for an existing project, the subsequent period must begin after the conclusion of the prior period. This ensures that no overlap exists between crediting periods (the new period cannot start before the previous one ends. This sentence was removed because it is covered in article 2.4.1 of the Puro Standard General Rules.	Minor adjustment
BCH	2.2	2.2.2	248	Could you elaborate more precisely on this mention "The Crediting Period can be renewed twice by successfully undergoing a new Production Facility Audit" ... does it mean that a new audit is necessary to reactivate another 10y crediting period ? On top, 5 years not the best for bankability 7 years twice would be better	Based on stakeholder input, the crediting period has been revised to 10 years, renewable twice. To activate each renewal, a new Production Facility Audit is required, which must be conducted against the latest version of the methodology and the Puro Standard General Rules. This ensures continued alignment with evolving standards and best practices. As per current General Rules, only two renewals are allowed, meaning crediting is limited to a maximum of 30 years per facility. Beyond this, CORC issuance is not permitted unless the General Rules are amended. Discussions on lifting this renewal cap are ongoing and require coordination with external frameworks (e.g., EU CRCF, ICVCM, CORSIA) to ensure cross-scheme compatibility.	Major revision

Document	Section	Rule	ID	Comment	Reply	Action
					We recognize the importance of long-term investment certainty and will continue to review this topic in broader policy forums.	
BCH	2.2	2.2.2.	442	Quote: "The Crediting Period of the Production Facility is set to 5 years in this methodology, starting from the first date of the first monitoring period. The Crediting Period can be renewed twice by successfully undergoing a new Production Facility Audit" Comment: Extend to at least 20 years in total Rationale: It makes no sense to set a limit of 15 years on assets that are amortized over 20+ years	Based on stakeholder input, the crediting period has been revised to 10 years, renewable twice. To activate each renewal, a new Production Facility Audit is required, which must be conducted against the latest version of the methodology and the Puro Standard General Rules. This ensures continued alignment with evolving standards and best practices. As per current General Rules, only two renewals are allowed, meaning crediting is limited to a maximum of 30 years per facility. Beyond this, CORC issuance is not permitted unless the General Rules are amended. Discussions on lifting this renewal cap are ongoing and require coordination with external frameworks (e.g., EU CRCF, ICVCM, CORSIA) to ensure cross-scheme compatibility. We recognize the importance of long-term investment certainty and will continue to review this topic in broader policy forums.	Major revision
BCH	2.3	2.3.1	57	How is the timepoint of creation of CORCs tracked? This implies some sort of dMRV or will it require receipts are every transaction?	Thank you for your question regarding the tracking of CORC creation timelines. The methodology offers flexibility in how suppliers demonstrate proof of biochar production and use, with several acceptable approaches for documentation and reporting. Suppliers may use alternative documentation methods (e.g., production logs, transaction records) to verify the timing of CORC creation, provided they meet the requirements outlined in Section 3.6 of the methodology. This section details the rules for reporting and verification, including the types of evidence accepted for audit purposes.	No change
BCH	3	3	37	There are numerous eligibility criteria that could be difficult to sift through. Include decision trees, checklists, or other visualizations to help project developers and auditors more quickly assess eligibility.	See answer to comment #272	No change
BCH	3	3	281	The gross amount of CO_2 equivalent stored in biochar (C_{stored}) is calculated using the formula: C_{stored} = biochar \times C_{org} \times \frac{44}{12}. Therefore, any changes that lead to a lower value for the total dry mass of eligible biochar (biochar) or the organic carbon content of the biochar (C_{org}) will negatively affect this number for project developers. Here are some changes in the 2025 draft methodology	Thank you for your careful reading of the methodology. The updated rules ensure the integrity of biochar CORCs by making explicit what was implicit in the 2022 edition—particularly around biomass eligibility, impurity management, and carbon characterization. While this may lead to more conservative	No change

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				compared to previous versions that could lead to a lower C_{stored} value: - Stricter eligibility criteria for biomass: The 2025 methodology places a strong emphasis on the sustainability and eligibility of biomass. If a share of the biomass feedstock cannot be demonstrated to be eligible, the resulting biochar from that share will also be ineligible, and its contribution to C_{stored} must be excluded. This could lead to a lower total dry mass of eligible biochar. The methodology also provides an example where a blend of eligible and non-eligible biomass requires a procedure in the monitoring plan to determine the persistence properties and organic carbon content of the biochar produced from the eligible fraction, potentially leading to a lower calculated C_{stored} if the eligible fraction is smaller or has lower carbon content than assumed previously. - More rigorous management of impurities in feedstock: The 2025 draft has detailed rules for managing impurities such as plastics, metals, and glass in the feedstock. Developers must assess and report the level of these impurities. If impurities are present, they affect the determination of the dry mass of biochar that is free of impurities, which is the biochar term used in the C_{stored} calculation. If the recorded mass includes impurities, but the organic carbon content is determined by laboratory analyses that exclude these impurities, a discrepancy arises that must be corrected, potentially lowering the reported biochar value used in the C_{stored} calculation. Any biochar derived from ineligible biomass due to impurities would also not contribute to C_{stored}. - Detailed requirements for biochar characterisation: The methodology requires the organic carbon content (C_{org}) to be determined on a dry basis and free of impurities. The 2025 draft specifies two options for determining C_{org}, one involving measuring both total and inorganic carbon, and another 'low-inorganic carbon option' where inorganic carbon is set to a default low value. Depending on the feedstock type and the actual inorganic carbon content, using the 'low-inorganic carbon option' might not always be conservative and could lead to a more scrutinised or potentially lower C_{org} value compared to direct measurement of inorganic carbon. - Impact of post-processing on dry mass calculation: If biochar undergoes post-processing for impurity removal or resizing, the monitoring plan must describe how the calculation of the biochar dry mass is affected. This suggests that the initial dry mass might be reduced after removing impurities, directly lowering the biochar term in the	estimates, it strengthens transparency and accuracy in carbon accounting.	

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				C_{stored} calculation. In summary, the increased focus on biomass eligibility, the detailed management of impurities, and the specific requirements for biochar characterisation in the 2025 draft methodology could all contribute to a lower reported total dry mass of eligible biochar and a possibly lower organic carbon content, thereby negatively affecting the gross amount of CO_2 equivalent stored (C_{stored}) for project developers.		
BCH	3.1	3.1.2	443	Quote: "For issuance of CORCs to be possible, the Production Facility must first have undergone a third-party Production Facility Audit, verifying the compliance with this methodology, the Puro General Rules, and related standard documents." Comment: Insert two paragraph after 3.1.2. as follows: - "The first facility audit must be done on-site (as opposed to remotely) unless proven to be extremely complex logistically, in which case the reason must be substantiated in writing, with details, and made public in the audit report. Neither Puro nor the CO2 Removal Supplier shall be able to claim logistical complexity for facilities with an expected annual output capacity above 10,000 tonnes of biochar. However, facilities using Puro-approved technologies may be subject, by default, to a remote audit" - "The Issuing Body shall define and made public the standardized rules under which a technology can become approved and thus skip on-site audit. This rules shall include strong proof of installation and output replicability, notably regarding safety and environmental compliance" Rationale: - It is too easy to hide things on a remote audit, especially when the technology is not very well known - It is unclear today how technologies are approved	We have clarified in rule 3.1.2 that initial Facility Audit shall be conducted on-site, as per other Puro Standard Documents, regardless of the size. We do not deem necessary to add exceptions mechanisms for already certified technologies, neither invalidate certain exception mechanisms based on volume. Generally, we agree that exception to on-site audit should be limited to the absolute necessary.	Clarification
BCH	3.1	3.1.5.	444	Quote: "the CO2 Removal Supplier must promptly report to the Issuing Body any change affecting the eligibility of the Production Facility, such as any modifications to the biochar production equipment or any expansion of the production capacity" Comment: Do the following edits: "any material modifications to the biochar production equipment's topology" Rationale: It is not needed to report minor changes that are part of the continuous improvement of the process	We have included the words "material" and "configuration" (instead of topology) in the revised rule. The primary principle remains that "any change affecting the eligibility of the Production Facility" must be reported. The rules continues with a non-exhaustive list of examples; for which Puro may provide separate guidance in its operative documents (e.g. in the form of a questionnaire or checklist).	Minor adjustment
BCH	3,1	3.1.6	374	Additional reactors can be added without affecting the crediting period. This suggests that the crediting period for the additional reactor would be truncated if added to the existing project. Consider adding allowing or	Thank you for your comment. A note was added at the end of rule 3.1.6 to clarify that "new reactors can also be registered as a separate Production Facility. The decision would depend on the	Clarification

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				reactors to be added as new projects within the same facility to preserve the crediting period for the new equipment.	supplier's operational design and preferences, provided that all applicable requirements can be met."	
BCH	3.1	3.1.6	409	Considering projects usually want to get carbon credits on a pilot project they then intend to build on, the information provided on 3.1.6 do not cover the situation in which a project's additions require additional land, will that require a new EIA?	Rule 3.1.6(a) already requires compliance with all applicable environmental and social regulations, including Environmental Impact Assessment (EIA) for capacity additions when mandated by the host jurisdiction. Similarly, if a pilot project's expansion triggers new regulatory thresholds that require permitting or EIAs where none were previously needed, these must be obtained. This aligns with subrule (a)'s intent to ensure full regulatory adherence throughout a project's lifecycle, including scaled-up operations. An example was added in the text to clarify those aspects.	Clarification
BCH	3.1	3.1.6	58	a. similar design to existing reactors is too broad, this should be limited to identical pyrolysis units.	Thank you for your suggestion. The methodology intentionally uses "similar design" rather than "identical" to accommodate industry realities: manufacturers often implement iterative improvements (even year-to-year) to reactor systems while maintaining core pyrolysis functionality. Requiring absolute identity could inadvertently exclude technically equivalent upgrades or prevent necessary maintenance replacements.	No change
BCH	3.1	3.1.6	59	d. This point highlights the necessity for digital MRV, otherwise it may result in very messy data or manual mistakes?	Subrule 3.1.6(d) refers to updates of Facility Audit documentation, e.g. permits, plans, layouts. Updating such documents does not required advanced digital MRV systems.	No change
BCH	3.1	3.1.6	249	Limited interest to go for a capacity expansion because the crediting period is not extended for the new reactor. The way we read it if the new reactor is implemented two years after the first one you are certified only for 3 year for this second reactor. So it would be best to try and obtain a separate certification	Note that the maximum crediting period has been extended to 10 years, and can be extended twice. That helps mitigate this concern. Additionally, the rules also allow for alternative approaches, such as registering new reactors as separate facilities with independent crediting periods. See also reply to comment ID #229.	No change
BCH	3.1	3.1.6	501	"The first verification and issuance of CORCs for the added capacity can only take place following i) the next Output Audit scheduled for the Facility (i.e. within a year) with a modified scope of verifications, or ii) an additional verification through a Capacity Expansion Audit under the conditions specified in rule 3.1.8 and subject to additional fees." Remember – we want to increase the fleet of kilns from 6 to 10,000 plus…	Thank you for sharing insights from your project's scaling plans. Puro's goal is to balance two priorities: (1) enabling efficient scaling while (2) ensuring the rigorous verification required for high-integrity carbon removal.	No change
BCH	3.1	3.1.6.	445	Quote: "The addition of new reactors to an existing Production Facility is possible […] under the following conditions" Comment: Do the following edit: "under the following cumulative conditions" Rationale: Avoidance of doubt	Thank you for your comment. The rule has been modified according to your suggestion to avoid any doubt.	Clarification

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BCH	3.1	3.1.6-3.1.8	509	1.- Capacity Expansion Audit Requirement (Section 2.2.5 – Draft 2025 Methodology) We understand the intention behind introducing a Capacity Expansion Audit requirement — namely, to preserve the methodological integrity and ensure transparency as facilities scale. However, we have serious concerns regarding the potential unintended consequences of this change on project development, investment, and the overall growth of the biochar carbon removal sector. The only practical way to achieve meaningful carbon removal at scale is through rapid facility expansion. The ability to swiftly install new lines, increase throughput, and deliver higher volumes is fundamental not only to business success but also to meeting global climate targets. Conditioning the issuance of CORCs on the completion of an additional, unscheduled audit imposes an operational bottleneck that fundamentally undermines the principle of scalable removals. The requirement would discourage new investment into scaling projects, as financial models depend heavily on predictable timelines for credit issuance and revenue realization. If every significant capacity increase triggers a mandatory audit before recognizing the expanded volumes, developers will face delays, unexpected costs, and lost sales opportunities. To illustrate the practical impact: we are currently executing a major expansion of our biochar production facilities to meet strong demand from international buyers. Our commercial commitments — some of which are at the contract signature stage — are based on expansion plans already underway. Had the proposed Capacity Expansion Audit rule been in force, we would have been exposed to significant economic harm, potentially leading to breaches of contract with major clients and substantial reputational damage. This example underscores a broader issue: The proposed rule threatens the bankability and reliability of biochar projects at a time when the sector needs to send strong signals of credibility, speed, and scalability to the global carbon markets. Suggested Revision: We respectfully propose maintaining the current operational flexibility: - Allow expanded capacity to be included under existing MRV procedures, - Require transparent notification of expansions to Puro.earth (e.g., within 30 days of commissioning),	Thank you for your detailed feedback and for sharing practical examples to illustrate your concerns. We would like to clarify that the Capacity Expansion Audit allows capacity to be *certified earlier, without needing to wait for the next scheduled Output Audit*. This is intended to support faster scaling, not hinder it. Note also that under Edition 2022, the addition of production lines was already considered a major change requiring verification at the next Output Audit. The rules have now been made explicit, to avoid any ambiguity in the certification process. In order to avoid the confusion with the term "Capacity Expansion Audit", we have reformulated rules 3.1.6 to 3.1.8 to refer to "next scheduled Output Audit" and "additional Output Audit". Further, the suggestion to require "transparent notifications of expansion to Puro.earth (e.g. within 30 days of commissioning)" is governed by rule 3.1.5. We have added to rule 3.1.5 a definition of prompt reporting in the case of capacity expansion, and other changes, to avoid any ambiguity: "3.1.5a) For expansion of the production capacity, prompt reporting to the Issuing Body means notifying Puro.earth in writing within 30 days of the financial decision being taken to expand the capacity. 3.1.5b) For any other changes, prompt reporting to the Issuing Body means notifying Puro.earth in writing within 30 days of the change, and always before the next scheduled audit—whichever occurs first. " Rules regarding separate monitoring of each line have also been removed, but representative is nevertheless required.	Minor adjustment

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				- Validate the new capacity during the next scheduled annual Audit. This solution preserves methodological integrity while protecting projects' ability to scale, fulfill market demand, and maintain financial and contractual stability.		
BCH	3.1	3.1.6-3.1.8	513	Conclusion: We appreciate Puro.earth's continued leadership in setting high-integrity standards for biochar-based carbon removal. The updates proposed in the 2025 draft methodology reflect a thoughtful and ambitious attempt to enhance scientific rigor, environmental safeguards, and market credibility. However, we are deeply concerned that certain changes — particularly the introduction of a mandatory Capacity Expansion Audit prior to recognizing increased production — could unintentionally undermine the very scalability that the carbon removal industry urgently needs. Rapid facility expansions are essential to achieving meaningful climate impact. Requiring a full audit before new volumes can be credited introduces delays that threaten operational viability, discourage investment, and create financial and contractual risks for active projects.	Thank you for the expressed support. See reply to #509.	Minor adjustment
BCH	3.1	3.1.7. a.	446	Quote: "The added capacity must have generated at least a volume equivalent to 1000 CORCs ready to be verified at the time of the Capacity Expansion Audit." Comment: Do the following edit: "The added capacity must have generated at least a volume equivalent to 1000 CORCs ready to be verified at the time of the Capacity Expansion Audit, unless the CO2 Removal Suppliers decides to pay the audit fee applicable to volumes below 1000 CORCs." Rationale: It might be strategic for CO2 Removal Suppliers to speed up the first certification, for example if this is part of some condition precedents in a financing deal. This addition is aligned with the possibilities already offered in Puro's fee rules	Thank you for the comment. The suggestion was incorporated, alongside other suggestions. See reply to #283.	Minor adjustment
BCH	3.1	3.1.7.a	283	Rule 3.1.7 states that: "A Capacity Expansion Audit can be organized to verify the information of the added capacity, under the following conditions: a. The added capacity must have generated at least a volume equivalent to 1000 CORCs ready to be verified at the time of the Capacity Expansion Audit. All documentation required for verification must be ready and submitted to the Issuing Body prior to the audit organization." Concern:	Thank you for the comment. Rule 3.1.7 has been edited accordingly: - the minimum threshold for requesting an additional audit is now set via the General Rules and Terms and Conditions (via which it can be easily lowered without affecting the methodology). - for volumes lower than the threshold, it is clarified that additional fees may apply. - the time limit between an "additional Output Audit" and the "next scheduled Output Audit" has been removed.	Minor adjustment

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				While we appreciate the importance of ensuring meaningful volumes are verified before audit mobilization, setting a fixed threshold of 1000 CORCs may have unintended consequences for small or modular projects. Projects below that scale may be forced to operate for extended periods at greater risk—producing and storing biochar without formal verification—potentially impacting financing, cash flow, and operational safety. Moreover, it appears that this 1000 CORC threshold is primarily motivated by audit efficiency and cost-recovery considerations (e.g., ensuring audits are "worth the trip" relative to auditor fees). If that is the case, we respectfully suggest that fee-related thresholds should not be embedded in the technical methodology itself. Instead, they could be addressed separately in a Fee Annex or an Audit Policy Guidance Document, where they can be reviewed and updated administratively without requiring a methodology revision. Suggestion: We recommend either: Removing the hard 1000 CORC threshold from the methodology text, and moving it to a fee or administrative annex; or Allowing flexibility for smaller projects to request earlier Capacity Expansion Audits based on operational needs, with transparent acknowledgment of minimum fee expectations. This approach would maintain audit cost transparency while allowing small and growing projects to participate more fairly in the standard's ecosystem.	Together, these adjustments offer more flexibility to a range of projects, and are better aligned with Puro's continued efforts to lower volume thresholds and increase audit frequency.	
BCH	3.1	p. 13, section 3.1.3.	176	In this point, shouldn't the "point of creation" be mentioned?	This is not deemed necessary a necessary clarification. It is clear that CORCs are only issued once all data is reported and possible to verify	No change
BCH	3.1	p. 15, section 3.1.7.b	178	The text in the "b" section might need rewriting - writing style does not seem right.	Rules have been re-written as per other comments; rending this comment void (subrule b. with its limit was removed). Thanks for paying attention to readability of the rules, which is also an important aspect.	Clarification
BCH	3.1	p. 15. section 3.1.7.	177	There is a typo in that first sentence - there is a double "the"	Thank you for your feedback. The typo has been corrected.	Clarification
BCH	3.2	3.2.1	139	The three baseline scenarios (New Facility, Retrofit, Charcoal Repurpose) are defined well, but may be useful to add a summary table comparing	See answer to comment #272 on operative documents beside the methodology to ease work of suppliers.	No change

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				them on key parameters (e.g., prior use, eligible outputs). This would help CO2 Removal Suppliers quickly identify their appropriate category.		
BCH	3.2	3.2.1	337	[3.2.1.b] While we recognize that retrofitting can indeed make previously underperforming or phased-out bioenergy facilities financially viable again, and that, from an environmental perspective, adding biochar production can greatly multiply climate benefits, especially when processing waste wood without requiring imported equipment or new construction, we would like to raise a caution. The definition of "Retrofit Facility" appears to imply that retrofits primarily occur at economically idled or non-performing facilities. This framing risks unintentionally excluding economically active, viable facilities that are proactively retrofitting to enhance carbon permanence and environmental outcomes. We recommend clarifying that retrofit eligibility should not depend on the prior financial status of the facility, but rather on the demonstrable shift toward stable biochar production and durable carbon removal.	Rule 3.2.1b has a definition that is independent of the financial status of the bioenergy facility, and this is the intention. Rule 3.2.1b lists three examples ("such as: ..."), where one out three examples refers to facilities not operating at full capacity for various reasons. To clarify, we revised the 3rd example to reduce the focus on non-economic profitability. The 3rd example now reads: ", bioenergy facilities that do not operate at full capacity or could be phased out."	Clarification
BCH	3.2	3.2.1	338	[3.2.1.example] The statement that current ash is “carbon-rich” grossly misrepresents the typical properties of biomass combustion ash. In reality, fly ash and bottom ash from biomass plants typically contain less than 14% total organic carbon, often far less, based on industry and scientific data. This is well below any credible threshold to be described as “carbon-rich” for purposes such as carbon sequestration or agronomic value. Using this term risks creating a false baseline, which could undermine additionality claims and confuse the distinction between ash disposal and deliberate biochar production. We recommend revising the language to state that untreated ash generally contains low to moderate levels of carbon and does not constitute a stable carbon storage form without further processing.	Example was reworded as follow: - "carbon-rich" became "carbon-containing" (we note the difference between %dry basis, and #dry-ash-free basis that can lead do different appreciation of the char content of the ash)	Minor adjustment
BCH	3.2	3.2.1	339	[3.2.1.example] Ash from biomass power plants is not a valued by-product, it is a regulated waste stream that requires active intervention, including compliance with disposal regulations, to avoid environmental and financial liabilities. Referring to it as a “by-product” misleadingly suggests inherent utility, when in reality, significant effort is needed to transform ash into a usable product through testing, certification, and meeting state-specific standards. In the United States, ash is not valuable unless additional work is done to qualify it for beneficial uses. We recommend avoiding the term "by-product" in the example and instead framing it as “waste material” to better reflect the operational and regulatory reality for retrofit facilities.	Example was reworded as follow: - "as a by-product" was deleted, as the mention is not necessary in the context of the example; the next sentence clearly stipulated its "waste" nature, as it was disposed in a landfill.	Minor adjustment

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BCH	3.2	3.2.1	340	[3.2.1.example] The claim that increasing biochar production leads to a reduction in electricity generation is oversimplified and technically inaccurate. In many retrofit cases, particularly at mid to high power loads, any energy penalty is marginal and can be offset through modest feedstock adjustments or operational optimization. Suggesting an inevitable trade-off between carbon removal and power generation falsely portrays the retrofit as a loss-driven compromise, rather than the strategic upgrade with co-benefits that it typically represents. In practice, the additional wood consumption required to produce biochar can be compensated without materially impacting energy output.	We agree with the comment and that it is possible to deploy different strategies to address the trade-off (per tonne of biomass used) between bioenergy generation and carbon sequestration. This is simply an example that illustrates the definition, and motivates for the leakage mitigation rules (now revised in section 8) which include the mentioned "feedstock adjustments or operational optimization" to address the trade-off.	No change
BCH	3.2	3.2.2	341	[3.2.2.b] The proposed language risks unintentionally penalizing integrated biomass facilities that are making substantial changes to incorporate durable carbon removal through biochar production. Automatically classifying any facility as a Retrofit Facility (B) simply because it previously produced bioenergy or biomaterials may discourage innovation and investment in carbon removal solutions. While we recognize the need to safeguard additionality, it is important to acknowledge that many biomass facilities are not continuing business-as-usual, they are undertaking material operational changes, often sacrificing output per unit of input biomass, specifically to achieve biochar permanence and verifiable carbon storage. This shift should be recognized as a strategic upgrade rather than a continuation of prior activities.	We do not see how rule 3.2.3.b is penalizing these facilities, as it is simply about categorization, to then define further rules that apply specifically to these types of projects, to avoid pitfalls and ensure high-quality carbon removals recognized in the VCM. We do agree and acknowledge that many biomass facilities continuously deploy improvement to their operations, and that biochar production is one strategic option available.	No change
BCH	3.2	3.2.3	140	When specifying the baseline land use, guidance could be provided on acceptable data sources (e.g., satellite imagery, land registries) or expected documentation level.	We do not foresee any complexity in demonstrating the state of the land prior to construction of the facility, as satellite imagery, pictures, land registries, other official documents could all be accepted. A clarification was added in rule 3.2.3: "Acceptable data sources include for instance satellite imagery, land registries, primary evidence collected prior to construction, or other similar documents."	Minor adjustment
BCH	3.2	3.2.1	60	a. Why is the inclusion of non-eligible purposes included in this methodology? This leads to many uncertainties and possibilities for fraud which are discussed in later comments added below. Additionally, a clear definition of charcoal must be given and explained how it differs from biochar.	We recognize the varied uses of terms like "biochar," "charcoal," and "biocoal" across industries. Here, as explained in other comments, we primarily used the word "biochar" regardless of the application, to facilitate rule writing in multiple contexts. Regarding facilities producing biochar (alt. "char") for both eligible and non-eligible purposes: this reflects common real-world practice, and the methodology is designed to account for this. What matters for crediting is not whether a facility produces only	No change

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					for CDR, but whether robust monitoring and reporting systems can trace and verify which fractions of production are actually used in durable carbon storage pathways. We believe the safeguards in place sufficiently address fraud risks by focusing on traceability and outcome-based eligibility, rather than restricting production configurations.	
BCH	3.2 & 8.1	3.2.1 & 8.1.1	47	The baseline framing is confusing—it's described in terms of project-like scenarios (e.g. "new facility construction") rather than true counterfactuals. This blurs the line between project and baseline and needs clearer separation. The methodology treats emissions from alternative biomass fates as "indirect emissions," while assuming a zero baseline—this creates a conceptual ambiguity. These emissions reflect the counterfactual scenario and would be more appropriately addressed within the baseline itself.	Puro.earth's approach to defining the baseline scenario is primarily based on the nature of the Facility rather than the specific feedstock used. This reflects the practical reality that, over a crediting period of up to 30 years, Facilities are likely to change feedstock types, sources, or suppliers. Linking the baseline strictly to the initial feedstock used would therefore be less agile. Instead, the methodology relies on rigorous biomass sourcing requirements and quantification rules to ensure environmental integrity while allowing operational flexibility. This treatment of alternative biomass fates (as indirect emissions coupled with sustainable sourcing) is conceptually aligned with other emerging frameworks—such as the EU CRCF for biochar—as we understand them. Please see also comments relating to section 3.4, as edits were introduced in the management of counterfactual CH4 emissions from biomass.	No change
BCH	3.2	3.2.1.b &c. p.16	250	Regarding Retrofit facility & Charcoal repurpose : Usually such plants are using biomass sourcing which is not eligible at such in term of additionnality (e.g. see list of criteria in BSC; avoid potential competition issues with long-lives wood products). So, we suggest you emphasize more clearly that eligibility of such retrofit/repurpose projects should not be seen as a simple change of design or business model, but more generally the eligibility of the input feedstock (see paragraph 3.4.5.) has also to be considered with the same level of requirement that is applicable to any "new" biochar production facility. It's important for avoiding mistrust from the carbon market and unfair competitiveness between the different projects.	We agree in principle with the commenter and have revised the sentence, so it reads: "possibly with modifications of the production equipment and biomass sourcing to comply with the methodology". However, we stress here that all projects, regardless of their nature must comply with rules from section 3.4 on biomass sourcing. In general, unless otherwise mentioned in specific rules, the rules apply to all types of projects.	Clarification
BCH	3.2	3.2.1-3.2.5	313	The baseline definition rules under Sections 3.2.1-3.2.5 and 6.3 require early and rigid selection. There are be projects that combine both retrofitting and re-purposing of biochar and where both changes independently contribute to increased carbon removal compared to the baselline and couterfactual. E.g a biomass boiler from which char has historically been distributed to activated carbon, which also, as part of a	The rules as currently phrased allow for management of unforeseen cases. Hence, no change needed.	No change

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				biochar project implemtation undergoes reftrofitting with improved feedstock pre-treatment and e.g. changes to re-circulation. We propose that such cases can be considered on an ad-hoc basis under 6.3.5.		
BCH	3.2	3.2.1c	308	This scenario can also apply to processes other than charcoal production facilities. A more inclusive approach for repurposing might be appropirate here. For example, activated carbon facilities. Why restrict to charcoal rather than having a more inclusive approach?	Thank you for your suggestion. The methodology currently places emphasis on charcoal as it is the most commonly observed diversion practice to date. We agree that repurposing could apply to other carbonized biomass products such as activated carbon. We have added to the definition examples mentioning activated carbon " (e.g. energy use, activated carbon materials)". Likewise, in 3.2.2b we included "producing charcoal for energy usage or other usage (e.g. activated carbon)".	Clarification
BCH	3.2	3.2.2. c.	448	Quote: "A biochar production facility is otherwise classified as Charcoal Repurpose (C), if the facility was already producing charcoal for energy usage, and possibly selling or disposing charcoal fines, without the prospect of carbon finance revenues from biochar." Comment: Insert a new paragraph at the end: "In the specific case where the CO2 Removal Supplier is directly or indirectly (i.e., through parent or subsidiary entities) involved in the production of charcoal, any New Facility or Repurposed Facility must be entirely dedicated to producing biochar for an eligible end use, and all emissions shall be allocated to biochar, even in the case the facility generates other by-products" Rationale: Two main reasons: - Charcoal makers typicall only use fines (as small fraction of their production) as biochar, and CORCs should no be used as a financing mechanism for facilities that are mainly aimed at non-removal activities. - It is impossible to guarantee actual biochar volumes and quality if charcoal and biochar are produced on the same line, as 1) charcoal can be easily be wrongly accounted for as biochar and 2) charcoal and charcoal fines have very different elemental composition	No change. There are other rules that limit the eligibility or penalise those for baseline carbon storage or economic leakage.	No change
BCH	3.2	3.2.2.a.	447	Quote: "For a biochar production facility to be classified as New Facility (A), the CO2 Removal Supplier must demonstrate that the biochar production has started concomitantly to or earlier than the production of other bioproducts (e.g. bioenergy, biomaterials, charcoal), if any. The production asset is typically newly built, procured, or manufactured specifically for the CO2 Removal Supplier." Comment: Do the following edit: "For a biochar production facility to be classified as New Facility (A), the CO2 Removal Supplier must demonstrate that the biochar production has started concomitantly to or earlier than the production of other bioproducts (e.g. bioenergy,	Thank you for your comment. Please not that amortization of assets is now for first 10 years because the crediting period was extended to 10 years. We understand your concern and made adjustments made to embodied emissions quantification in different cases in section 7.4.3	Minor adjustment

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				biomaterials, charcoal), if any. The production asset is typically newly built, procured, or manufactured specifically for the CO2 Removal Supplier. New Facilities must allocate 100% of their emissions to biochar used for eligible uses" Rationale: - Same risk as for charcoal (see below): misuse of carbon finance for marginal removal uses cases - Risk of unfair competition with producers than do 100% eleigible use, as amortization of assets in the first 5 years will be much more impactful		
BCH	3,2	3.2.2a	375	"However, in certain cases, it can also be an existing older but non-operational asset, that is purchased by the CO2 Removal Supplier (change of ownership)." Does this apply of a facility had been operational and shut down for a period? Is it considered new again? The confusion for the reader is the r use of the word "New". Consider defining a biochar production facility (e.g. as a facility that produces biochar as the primary product?) and then having cases that handle retrofits or repurposed facilities.	The reason a project (i.e. Production Facility) may still be considered a New Facility despite using recycled or repurposed equipment is that "newness" is tied to a new investment decision and the start of operations at a specific site. For example, if a mobile reactor is sold and relocated to launch a new operation under different ownership and context, the project is treated as a New Facility—regardless of prior equipment use. We have re-worded the sentence to reduce confusion: "However, in certain cases, it can also be an existing asset that is purchased and re-purposed by the CO2 Removal Supplier (change of ownership, see rule 3.2.4) as part of a new project."	Clarification
BCH	3.2	3.2.3.	449	Quote: "the CO2 Removal Supplier shall further specify the baseline land use of the facility location(s)" Comment: Rationale:	Duplicate/Truncated comment. See reply to #450	No change
BCH	3.2	3.2.3.	450	Quote: "the CO2 Removal Supplier shall further specify the baseline land use of the facility location(s) [...] for the determination of any direct emissions associated with permanent land cover change due to new construction works, facility expansion works, or other land clearing." Comment: Do the following edit: "associated with permanent land coverage change tree removal" Rationale: Herbs and other types of small, non-dense, low-lignin plant coverage is not relevant for an LCA	To clarify, a reference to section 7.4 was added in rule 3.2.3, where quantification rules for direct land use change are located. We agree that tree removal is generally the land conversion that leads to highest losses of carbon; this is also highlighted in section 7.4 where the details are. Hence, it is not needed to adjust rule 3.2.3 which is focused on definition of the baseline land use of the facility.	Clarification
BCH	3.2	p. 15	430	Develop guidance or default factors for feedstock-specific CH_4 emissions in landfill baselines (yard waste, food waste, etc) to be optionally included in Eindirect or as a modifer "-Cusworth et a. (2024) show significant persistent methane emissions from landfills. -Would improve overall accuracy and help projects diverting high-CH_4-risk biomass claim fair credit"	Other comments in section 3.4 have led to changes to the rules regarding biomass CH4 emissions. The modified rules considers biomass counterfactual, to determine whether CH4 shall be included or not. However, precise quantification is not required. The focus is rather on counterfactual fate determination.	Major revision

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BCH	3.2.1	p. 16	431	Include a baseline scenario for a biochar facility integrated into an existing green waste management facility -elements of the "new facility" and "retrofit facility" would apply to almost every biochar facility that is integrated into an existing municipal green waste management facility	We agree that it is common that new biochar production assets are built in existing industrial areas, sometime already managing or processing biomass for other purposes. Here, the example given would likely be a new biochar facility, albeit integrated to existing municipal green waste management facility (municipal green waste management facility is understood as a composting facility, chipping and mulching; but not necessarily a bioenergy facility producing heat/power or biogas).	No change
BCH	3.2	p.15	336	We support the principle that a comprehensive baseline is necessary to maintain the environmental integrity of carbon removal activities. However, we suggest that a balance is needed between achieving a comprehensive baseline and maintaining the practicality and scalability of real-world projects, especially when using conservative assumptions. Perfection in baseline establishment can unintentionally prevent good, high-integrity projects from moving forward. While it is critical to prevent crediting projects that would have happened anyway, it is equally important not to create MRV burdens so heavy that they choke viable carbon removal opportunities. We encourage ensuring that bad projects are heavily penalized, but that good projects are not inadvertently excluded due to data expectations that go beyond what is realistic for operational facilities.	We agree on the principles mentioned by the commenter. Hence, we decided to have a limited number (3) of standardized baseline for the main categories of biochar projects, which should be straightforward and select from without much data burdens.	No change
BCH	3.2.3	0	157	On the part of Further baseline aspects to be specified, section 3.2.3. Regardless of the selected baseline scenario, the CO2 Removal Supplier shall further specify the baseline land use of the facility location(s), i.e. the state of the land where the facility is either located (Stationary Facility) or operates (Mobile Facility) prior to project start, for the determination of any direct emissions associated with permanent land cover change due to new construction works, facility expansion works, or other land clearing. - does it mean that we should calculate the land use change of the the plot of land for biochar plant construction? - Is it also for biochar new facility with feedstock from plantation waste? - is it correlate with C-indirect in section 8.3.1?	To clarify, a reference to section 7.4 was added in rule 3.2.3, where quantification rules for direct land use change are located. Answering the questions raised: - does it mean that we should calculate the land use change of the plot of land for biochar plant construction? Yes, as per 7.4 - Is it also for biochar new facility with feedstock from plantation waste? The feedstock type does not affect whether land is deforested for building a factory. - is it correlate with C-indirect in section 8.3.1? This is indirectly related to 8.3.1 , but primarily related to 7.4. The distinction is between "direct" and "leakage" effects: in the scope of 7.4 (project emissions), supplier must quantify how much land was converted (if any) for establishment of its factory and calculate related emissions (if any). In the context of leakage, one must reckon that construction of facility on a given land parcel may require to drain the land, which can disturb surrounding land areas (if not done properly, and not mitigated), which can lead to indirect/leakage emissions in the surroundings. Such	Clarification

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					indirect/leakage effects should be mitigated/avoided rather than quantified.	
BCH	3.2	0	314	It's not clear (to us at least) when a new facility stops being "new". E.g . a four year old biochar facility that would certainly have been defined as "new" (had these definitions existng 4 years ago) but has been operating 4 years and coming up for facility audit #2. Is that still new and 0 baseline can be used? What happens after the end of the 3rd monitoring period?	Thank you for the clarification question. A note was added in rule 3.2.1: "Note that the selection of a baseline scenario is for at the initial Facility Audit, and remains then unchanged throughout all crediting periods." Under the current General Rules, after 3 crediting periods (now set to 10 years each, totalling 30 years), the project cannot receive CORCs anymore. For details, see reply to comment #229.	Clarification
BCH	3.3	3.3.1	23	The current conception of financial additionality may hinder projects that are theoretically just profitable enough to operate but could not actually secure investment under true conditions with limited revenue streams. It may also be the case that allowing traditionally financially non-additional to mint credits would allow them to attract more investment and scale up operations even further than they would have otherwise, allowing for even more net carbon removal as opposed to simply detracting from and undercutting financially additional projects. Consider eliminating the strict financial additionality requirement. Other key pillars of additionality, such as regulatory, should be preserved.	We understand the concern that a strict interpretation of financial additionality may appear to exclude projects that are marginally profitable or face real-world investment barriers despite theoretical viability. This said, in the Puro Standard, financial additionality can be demonstrated in three manner (see Puro's Additionality Assessment Requirements), and when an investment analysis is conducted uncertainties and benchmark profitability levels can be part of the assessment.	No change
BCH	3.3	3.3.1	24	Biochar created and used from a non-financially additional project could still represent carbon dioxide removal but would not have a way to be monetized or accounted for under the proposed rules. If the strict financial additionality requirement is maintained, it could still be useful to allow such projects to create CORCs but restrict their application via insetting to either their co-products or the broader operation providing the biomass feedstock. This would circumvent the issue of having financially non-additional credits detract from the broader market while also allowing true, marginal removals to be accounted for in a reasonable way.	See answer to comment #23. We welcome the suggestion regarding use of certified removal for insetting. However, it is beyond the scope of this public consultation, as it would require a change in Puro's General Rules and other standard documents.	No change
BCH	3.3	3.3.1	25	Based on our experience, customer file submissions for financial additionality have been somewhat messy and hard to decipher. If IRR-based financial additionality is preserved, offering a relatively simple template for it could expedite and increase the quality of the auditing process. Providing some rough expected pricing data based on Puro's experience and partners could also be helpful for filling out the templates properly.	Thank you for the suggestion. We may consider the development of additional guidance for conducting investment analyses and improved templates. This does not affect the suggested rules.	No change
BCH	3,3	3.3.1	376	"Carbon additionality" This is an awkward phrase as seems to go without saying. If there is not an net reduction then a project is a net emitter and no credits are serialized. Typically this is described as a net emission	We agree that the concept of "carbon additionality" is different from the usual carbon credit mechanisms, as it put emphasis on carbon removals that would have occurred anyway in the	No change

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				reduction, i.e. baseline condition emissions -project condition emission = net emission reduction.	baseline. As baseline emissions are not systematically considered and quantified (to the exception of certain biogenic flows), which is conservative with respect to removals, carbon removal additionality is an important aspect, specific to CDR.	
BCH	3.3	3.3.1.	451	Quote: "The CO2 Removal Supplier must demonstrate that the biochar activity complies with the three components of additionality" Comment: Do the following edit: "complies with the three cumulative components of additionality" Rationale: Avoidance of doubt	Thank you for your suggestion. The text has been revised accordingly.	Clarification
BCH	3.3.1	3.3.1b	294	Regulatory additionality - if there are existing laws and regulations mandating a certain activity but they are not being implemented properly, would it be possible to still be additional? Could a provision be included that states that even if there are laws and regulations, if they are not being followed in certain areas the activity can still be considered additional?	It would need consideration case by case if a local law exists but is not enforced. Project-specific considerations are not made part of common requirements in a methodology.	No change
BCH	3.3	3.3.3	342	We want to highlight that in the context of biomass power plants, power generation is not a "co-product" of biochar production. Power is the primary regulated output of these facilities, subject to its own environmental, emissions, and operational oversight frameworks. It provides significant standalone environmental benefits, particularly when sourced from waste wood, and is already fully accounted for under energy regulations. In retrofits that add biochar production, power generation remains a separate, regulated activity. Therefore, when assessing co-product revenues for financial additionality purposes, we recommend clearly distinguishing between new co-products arising from the biochar production process and pre-existing primary outputs like power. This distinction avoids double-counting or incorrectly framing essential infrastructure outputs as ancillary by-products.	At Puro, we use the term “co-product” broadly to refer to all outputs of a facility—without assigning a value hierarchy between primary and secondary products. Whether energy, heat, or biochar, each output is treated as a co-product for the purposes of financial additionality assessment. Rule 3.3.3 already provides clear guidance on how to account for revenues from all outputs, including those from pre-existing infrastructure like power generation. The key consideration is whether carbon credit revenues are necessary to make the biochar production component viable, regardless of whether other outputs are regulated or long-established, in relation to the baseline scenario. Considering the revenues of co-products, in the case of retrofits, usually highlights the opportunity costs of reducing power output or increasing biomass use, further making the additionality case.	No change
BCH	3.3	3.3.3	411	Please detail how Puro will account for changes in the biochar products markets over time, which could change the financial model significantly over the course of the facility's 30 year operating lifetime, while long-term CORCs offtake agreements are made now on the basis of current biochar markets. Are we at risk of becoming ineligible and unable to fulfill our committment to deliver CORCS?	Additionality is determined at the initial Facility Audit. It is re-assessed at the renewal of the Crediting Period (10 years) in the next Facility Audit. The re-assessment considers updated market situation for baseline, regulatory and financial additionality.	No change
BCH	3.3	3.3.3 and 3.3.4	516	Additionally Requirements: Sections 3.3.3 and 3.3.4 are overly burdensome.	Thank you for your feedback. We recognize the importance of maintaining practicality in methodological requirements.	No change

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					However, additionality is a core pillar of high-quality carbon removal credits (CORCs), and the provisions in rules 3.3.3 and 3.3.4 are essential to ensure environmental integrity. The requirements in rule 3.3.3 reflect standard practice in the voluntary carbon market for demonstrating that carbon finance is necessary to enable the project. Similarly, rule 3.3.4 addresses the treatment of waste biomass and is consistent with normal investment analysis and baseline comparisons.	
BCH	3.3	3.3.4	251	"... the financial analysis must adequately include the current treatment and disposal cost of the feedstock ..." : Current costs are not always relevant for instance in the case of PPP renewal	Thank you for your comment. We have revised Rule 3.3.4 to clarify that the financial analysis must consider both current and reasonably projected future treatment and disposal costs, as part of the comparison with the baseline.	Minor adjustment
BCH	3.3	3.3.4	278	The additionality analysis in the 2025 draft of the Puro.earth biochar methodology has several differences compared to the 2022 version that could negatively affect project developers. The 2025 draft presents a more burdensome approach, focusing on three components of additionality: carbon additionality, regulatory additionality, and financial additionality. - More Detailed Financial Additionality Requirements: The 2025 draft includes specific biochar-specific and baseline-specific financial additionality aspects that were not as explicitly detailed in the 2022 version. - Developers must now provide a detailed assessment of current biochar prices and projected trends for the next five years, justifying these estimates with supporting data. This requires more in-depth market analysis and forecasting. This is usually unavaible at it a nascent market. - They need to report on the current and expected pricing of any co-products over the crediting period, specifying how these values were determined. This adds complexity to the financial analysis, especially for projects with multiple outputs. - An outline of key cost components involved in biochar production, including input materials, labour expenses, and capital investments, is required for a comprehensive financial analysis. This necessitates a detailed breakdown of project costs. This adds to the administrative burden and could infringe on IP if the actual equipment component list is made public. - Specifically, for activities replacing a waste treatment technology, the financial analysis must include the current treatment and disposal costs of the feedstock. If the biochar activity results in significant cost savings	The additionality rules in Edition 2025 and Edition 2022 are the same, as they both implement the same additionality requirements (separate Standard Document). However, certain aspects have been made more explicit, highlighting biochar specifics, to facilitate the work of suppliers. Rule 3.3.5 on disclosure of financial situation for Retrofits & Charcoal diversion projects was deleted; however, some baseline data may still be necessary as part of the financial additionality demonstration.	Minor adjustment

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				without projected CORC revenues, the activity may be deemed non-financially additional. This could negatively impact projects where avoided waste disposal costs are a significant economic driver, even with carbon finance. - For Retrofit and Charcoal diversion baselines, the financial situation of the facility in the 5 years prior to the decision must be disclosed as part of the additionality assessment. Gathering and presenting this historical financial data can be burdensome. - Formalized Additionality Demonstration Procedures: The 2025 draft mandates that the CO2 Removal Supplier must answer the latest version of the Puro Baseline and Additionality Questionnaire and provide any required evidence. Upon successful Facility Audit, this questionnaire (though not the supporting evidence) must be made public in the Puro Registry. This formalized process, while increasing transparency, could require developers to provide more specific information in a structured way, potentially increasing the administrative burden. The 2022 version simply stated that the supplier must "provide full project financials and counterfactual analysis". Increased Emphasis on Baseline Justification: While the 2022 version required project-specific and conservative baselines, the 2025 draft dedicates a specific section (3.2) to baseline demonstration. It outlines different baseline scenarios (New Facility, Retrofit Facility, Charcoal Repurpose) and requires the CO2 Removal Supplier to select one. Furthermore, regardless of the selected scenario, the baseline land use of the facility location(s) prior to project start must be specified. This increased granularity in defining and justifying the baseline can make the additionality argument more complex and potentially subject to greater scrutiny. In summary, the 2025 draft of the methodology introduces a stringent framework for additionality analysis. The increased specificity in financial data requirements, the formalised questionnaire, and the more structured approach to baseline definition could make it more challenging and potentially more costly for project developers to successfully demonstrate additionality compared to the 2022 version. They may need to invest more resources in detailed financial analysis, data collection, and justification of their baseline scenarios.		

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BCH	3.3	3.3.4	279	The inclusion of biomass waste cost savings as a negative cost (effectively treating it as revenue) in the additionality assessment fundamentally undermines the purpose of evaluating whether a biochar activity is truly additional—i.e., whether it would not have occurred without the incentive of carbon dioxide removal credits (CORCs). Here's why this approach is flawed: - Cost Savings Are Not Equivalent to Revenue Generation: Cost savings from avoiding an existing waste treatment process (e.g., sewage sludge disposal or incineration) represent a reduction in operational expenses, not an active revenue stream. In financial analysis, revenue is typically defined as income derived from selling goods or services, whereas cost savings reflect an efficiency gain or avoided expenditure. Treating these savings as a negative cost in the additionality assessment artificially inflates the perceived financial viability of the biochar project, skewing the evaluation. This conflation risks misrepresenting the project's dependence on CORC revenues, which is the core question of additionality. - Baseline Costs Are an Inherent Part of the Status Quo: The proposed rule specifies that the biomass feedstock "must be and is already treated or disposed of as per local regulation," implying that the current treatment cost is a pre-existing obligation for the managing entity. These costs are part of the baseline scenario—what would happen without the biochar activity. Additionality assessments are designed to compare the financial attractiveness of the proposed activity (biochar production) against this baseline. Including cost savings as revenue effectively penalizes the biochar activity for improving efficiency over a costly baseline, rather than rewarding it for requiring external incentives (like CORCs) to be viable. This distorts the assessment by making the project appear less dependent on carbon credits than it might actually be. - Risk of Overestimating Financial Additionality: If significant cost savings from avoiding waste treatment are factored in as a negative cost, the biochar activity could appear financially attractive "without projected CORC revenues," as the rule suggests. This could lead to a determination that the activity is "non-financially additional" and thus ineligible for credits, even if the upfront capital costs, operational risks, or market uncertainties of biochar production would deter implementation without	Thank you for your comment. We have revised Rule 3.3.4 to clarify that the financial analysis must consider both current and reasonably projected future treatment and disposal costs, as part of the comparison with the baseline.	Minor adjustment

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				CORC incentives. For example, building and operating a biochar facility might involve substantial investment and technical challenges that outweigh the waste treatment savings. Excluding these savings from the revenue side ensures the assessment focuses on whether CORCs are the decisive factor tipping the project into viability, not on incidental cost reductions. - Inconsistency with Additionality Principles: The principle of additionality, as applied in carbon markets, seeks to ensure that credited activities go beyond business-as-usual practices and require carbon finance to proceed. By counting waste treatment cost savings as revenue, the assessment shifts focus away from the incremental financial incentive provided by CORCs and toward an unrelated economic benefit tied to the baseline activity. This contradicts the intent of additionality, which is to isolate the role of carbon credits in enabling the project, not to evaluate all possible financial outcomes of switching from one waste management approach to another. - Practical Implications and Perverse Incentives: Including cost savings as revenue could discourage entities from pursuing biochar projects in contexts where waste treatment costs are high—precisely the scenarios where biochar could offer the greatest environmental and operational benefits. If a project is deemed non-additional due to significant savings, even though it wouldn't proceed without CORC support, the rule inadvertently penalizes innovation in waste management. Conversely, it might favor projects with minimal savings (and thus less efficiency gain), creating a perverse incentive that undermines both environmental and economic goals.		
BCH	3.3	3.3.5	309	This section does not provide an understanding on what are the requirements for baseline specific financial aspects. Would financial additionality only concern the investment related to retrofit or diversion activities? Why is the financial situation 5 years prior to the retrofit/diversion decision. This makes it unclear for projects trying to evaluate if they would qualify for CDR generation or not. Please provide some guidance explanations or examples for the additionality subject	The rule was deleted; however, some baseline data may still be necessary as part of the financial additionality demonstration.	Minor adjustment
BCH	3.3	3.3.5	343	We find that the language requiring disclosure of the "financial situation of the facility" over the prior five years is unclear. It is not specified whether this refers to profitability, cash flow, debt levels, or other	The rule was deleted; however, some baseline data may still be necessary as part of the financial additionality demonstration.	Minor adjustment

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				indicators. Based on our direct experience operating biomass facilities, we can confirm that the financial situation of such plants is complex and cannot be reduced to a simple metric. Factors like seasonal feedstock variability, regulatory compliance costs, and multi-revenue business models make a straightforward financial evaluation difficult. We recommend clarifying what specific financial data points are expected.		
BCH	3.3	3.3.5	344	More fundamentally, we are concerned about how this information will be used to assess additionality. If the underlying assumption is that only financially distressed facilities can qualify as additional, we believe this is flawed. Many retrofit projects are motivated by environmental leadership, diversification of operations, or strategic investments, not by financial difficulties. In the case of biomass power plants in the United States, facilities are already at risk of closure, jeopardizing vital forest management infrastructure recognized by the USDA Forest Service as critical to reducing wildfire risk and promoting healthy forests. Penalizing economically stable facilities that are proactively upgrading to biochar would undermine these broader environmental goals.	The rule was deleted; however, some baseline data may still be necessary as part of the financial additionality demonstration.	Minor adjustment
BCH	3.3	3.3.5a +b	378	what is the purpose of the requirement for financial reporting of the retrofit and charcoal diversion baseline five years prior? How is this information used? Consider adding a decision tree to demonstrate the logic of how this input informs decision making. If the facility had been previously profitable is a retrofit no considered additional?	The rule was deleted; however, some baseline data may still be necessary as part of the financial additionality demonstration.	Minor adjustment
BCH	3.3.1	p.17	158	is it only by fill in the Additionality questionnaire or we should calculate it? If it is calculating, how?	The questionnaire must be filled in and supported evidence provided as indicated in the questionnaire (depending on the approach selected and answers provided)	No change
BCH	3.4	0	160	Starting from the feedstock, section 3.4.1 – 3.4.3, 'the supplier must keep records of all biomass batches (also commonly referred to as lots, deliveries, consignment)' 1) Our case: The feedstock from the mill will be transferred into biochar facility via bin + prime-mover, therefore each bin transported shall be defined as one batch? 2) Our case: Our feedstock also comes from external source (buy outside our mill) in which will be delivered by trucks, therefore each truck will be defined as one batch?	Thank you for the question. The definition of a biomass batch is intentionally flexible to accommodate facility-specific logistics. In your case, each bin or truck delivery can be considered a batch, as long as traceability and eligibility can be demonstrated for each. A clarification was added in rule 3.4.2	Minor adjustment
BCH	3.4	3.4. (Intro)	452	Quote: "it is essential for CO2 Removal Suppliers to monitor the sustainability and eligibility of their biomass on an ongoing basis, i.e. at each Output Audit, and have adequate procedures to manage any risks associated with biomass use"	The reference to Output Audit in this introduction text was removed, as suggested. The intended meaning was that it is reported at each Output Audit (despite being monitored on an ongoing basis).	Clarification

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				Comment: Do the following edit: "it is essential for CO2 Removal Suppliers to monitor the sustainability and eligibility of their biomass on an ongoing basis, i.e. at each Output Audit, and have adequate procedures to manage any risks associated with biomass use" Rationale: Otherwise inconsistant with "ongoing"		
BCH	3.4	3.4.2	412	1.8 million metric tons of bagasse are already stored onsite. How will you define a batch for biomass built up historically? Also, when the conveyor is delivering bagasse directly from the mill during grinding season it is 24/7 for 100 days. How will batch be defined in this scenario?	The rule text has been revised to clarify that batches may be defined based on time intervals or volumes in continuous or bulk supply cases.	Minor adjustment
BCH	3.4	3.4.2.	453	Quote: "The CO2 Removal Supplier must keep records of all the biomass batches (also commonly referred to as lots, deliveries, consignments) that have been supplied to the Production Facility" Comment: For information, a batch might not be easy to define in case of continuous feeding from a large biomass pile resulting from centralised residue generation (e.g. sugarcane bagasse). A solution is to consider 1 batch = the supply of one day, but this is not Rationale: The current wording assumes a batch is necessarily a discrete volume delivered at the facility	The text has been modified to explicitly allow batch definitions based on time intervals or volumes for continuous or bulk feedstock supply.	Minor adjustment
BCH	3.4	3.4.3	454	Quote: "Any biomass source declared must belong to only one of the biomass categories defined in the Puro Biomass Sourcing Criteria and must be eligible for biochar production as per rules applicable in this section. Likewise, any biomass batch supplied to the Production Facility must belong to only one of the biomass sources declared for the Production Facility." Comment: Add somewhere: "suject to the exception of rule 3.4.7.c." Rationale: Otherwise rules 3.4.3. and 3.4.7.c. contradict each other	Thank you for your comment. The text has been revised to accommodate your suggestion.	Minor adjustment
BCH	3.4	3.4.5	433	Introduce a “low-risk urban feedstock” subcategory for clean, source-separated green waste (e.g., parks, landscaping, urban tree trimming). -Green waste from municipal landscaping programs with trackable origin and handling protocols may qualify for reduced documentation burdens under a low-contamination exemption pathway.	We believe the feedstock described by the commentor would fit in the existing category D.	No change
BCH	3.4	3.4.5	136	General plant waste category is needed, now the very detailed origin definition leaves gaps between, like plant waste from greenhouses. Strict positive lists cause need for frequent updating that should be consedered if using those. For example, ISO 17225-1 has the following main classification for biofuels: a) woody biomass; b) herbaceous biomass; c) fruit biomass; d) aquatic biomass; e) blends and mixtures.	Thank you for your suggestion. The current classification was designed to align with Puro’s operational and sustainability criteria, ensuring traceability and environmental safeguards across diverse biomass production systems. Note that the current categories will be updated as needed. For the case of plant waste from greenhouses, it may fall under different categories depending on the context, but most likely refers to in-field crop residues from agricultural production.	No change

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BCH	3.4	3.4.5	111	"Abattoir waste and animal manure (typically processed via biological treatment, anaerobic digestion or fermentation) and its derivatives (e.g. digestate from manure and abattoir waste)" Is the information in the first brackets a baseline scenario expectation? or just information about how these wastes are otherwise used. If a manure feedstock source is used to make biochar, but was not ever used for biological treatment, anaerobic digestion or fermentation, is it still eligible?	These examples are just indicative (and relevant in the context of our BECCS methodology). The examples were removed, here and in the name of other categories as well.	Clarification
BCH	3.4	3.4.5	310	It is not clear if the biomass from sorted MSW would be eligible for biochar production. Please clarify whether biomass from MSW-sorting facilities are considered eligible under this new rule.	We have clarified that this fraction is not eligible either for the moment.	Clarification
BCH	3.4	3.4.5	502	"Invasive species whether on land, in freshwater, or in coastal areas, as well as any biomass from landscape management for conservation purposes of protected areas or assimilated, including forest wildfire mitigation O Cultivated or harvested water-based plants or algae, and associated derivatives." GREAT NEWS!	Thank you for your support.	No change
BCH	3.4	3.4.5	517	Biomass Sourcing: Requirements in section 3.4.5 are excessive.	Biomass use for CDR is a sensible matter. We believe it is necessary to be precise and careful with biomass sourcing.	No change
BCH	3.4	3.4.5 - p.21	252	Item G : This paragraph does not seem to exclude energy-from-wood usage as a potential competition use. Whereas, it is clear, at least for the UE members (ref to RED III), that the energy-from-wood usage is one of the last priorities, far away after carbon sinks. Is it possible to make better cristal clear.	Elements of the trade-off between bioenergy generation and carbon storage are now tackled in the revised section 8. In particular, for New Built facilities, when there is a clear biomass demand for energy generation from the sourcing area, the biochar project is also required to valorise co-products for energy generation. See revised section 8 for details.	Major revision
BCH	3.4	3.4.5 p.21	253	Non Allowed categories for biochar production : We suggest to extend the list of this non-allowed categories especially in order to emphasize that none biochar can be produced from direct forestry cuttings (certified or not) except for trees that need to be cleared for helping the forest to grow and achieve its final goal in term of Climate contribution (carbon capture) and commercial purpose (production of suitable wood for long-lived wood products). It is important to make clear that no one will cut mature trees to make biochar with it.	Thank you for your suggestion. We believe the methodology and the Biomass Sourcing Criteria provide clear safeguards against the use of roundwood or mature trees for biochar production. Please see the Biomass Sourcing Criteria document, for details on the eligibility of biomass fitting category G. Clarifications were made in the category description.	Minor adjustment
BCH	3.4	3.4.5. (page 21)	455	Quote: "J. Agricultural crops that are food or feed crops, whether or not used in such applications (e.g. corn or wheat fermented for biofuel, cereals fermented for beverage production), cultivated on agricultural land." Comment: Do the following edits: - Remove: "Agricultural crops that are food or feed crops, whether or not used in such applications" - Add at the end: "For clarity, the residues of these crops are allowed"	Crop residues from such crops pertain another category. This was indicated as a note.	Clarification

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				Rationale: Explanation: - some major crops can be considered both food/feed and energy crops (e.g., corn). Their use must be established to know if they fall under category J or category I, hence the need to remove cross-out words - avoidance of doubt		
BCH	3.4	3.4.5.P	325	To align with the BSC and our first comment: Feedstock description should expand on the definition of "state-authorized." Does the activity need to be completed or overseen by a municipality/utility company, or does the activity just need to have the adequate permits and approval from relevant authorities?	Following discussion with Puro's Advisory Board, the biomass category P has now been changed to "allowed for processing" but not resulting in CORCs for a more conservative outcome. Revisions in the category name and description, made in the Biomass Sourcing Criteria (BSC), were reproduced in the methodology text as well. See further details in the section on Biomass Sourcing Criteria (at the end of this table).	Major revision
BCH	3.4	p. 22, section 3.4.7.b	179	after "categories", replace "of" by "or"	Thank you for your feedback. The typo has been corrected.	Clarification
BCH	3.4	3.4.9	254	"industry best practice" >> "good industry practice" to be preferred	Thank you for your suggestion. The text has been revised accordingly.	Minor adjustment
BCH	3.4	3.4.9	345	In general we agree with this requirement of monitoring stockpiles. Though, we go through thousands of green tons of wood per facility, meaning the fuel yards are large and dynamic. Though we have occasionally performed drone studies to assess stockpiles, it is important to recognize that these types of measurements are costly and not feasible as a routine monitoring method. We recommend ensuring that any stockpiling monitoring requirements acknowledge the operational realities of large-scale biomass yards and allow for reasonable, representative estimates rather than continuous or high-cost verification methods.	Thank you for the feedback. The methodology does not prescribe specific technologies and allows for representative, practical monitoring approaches suited to large-scale operations, as long as key parameters are tracked and risks are managed. Representative estimates are likely valid as well.	No change
BCH	3.4	3.4.9	379	In some cases, Biomass stockpiling could be considered equivalent in both the project and the baseline condition depending on the fate of the waste in the baseline condition. Consider allowing for justification and evidentiary support to demonstrate all or a portion are equivalent, depending on the amount of time for stockpiling.	The suggestion was added in rule 3.4.10 as well as in rule 3.4.11.	Major revision
BCH	3.4	3.4.10.	456	Quote: "The CO2 Removal Supplier must monitor at minimum the average duration of biomass stockpiling at the facility, and under which temperature and moisture conditions and under which form." Comment: Add at the beginning: "For biomasses whose fate in the baseline scenario is not stockpiling and decomposition, " Rationale: Unneeded complexity if decomposition happens anyway in the baseline scenario	The suggestion was added in rule 3.4.10 as well as in rule 3.4.11.	Major revision

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BCH	3.4	3.4.11	326	When describing biomass that ensures natural sufficient aeration, specific biomass types are described as examples. Are these examples exhaustive? For example, agricultural residues are listed as biomass that consists of materials that do not necessarily ensure sufficient natural aeration. However, coconut husks are an agricultural residue that are very thick and do not easily decompose. We recommend providing either a) a more exhaustive list of various feedstocks and how they may ensure sufficient natural aeration, or b) provide a way for projects to prove this without being classified under a particular feedstock.	We consider that the current list covers the main scenarios, but remain open to review. In the case exposed, coconut husks can fall under b) as a coarse form, provided they are stored to ensure sufficient natural aeration. In any case, suppliers should justify with evidence the low decomposition risk of the biomass under their specific stockpiling conditions. We have added a sentence to allow CO2 Removal Supplier to suggest other conditions of negligible biomass decay, which must be approved by the Issuing Body via rule clarification.	Major revision
BCH	3.4	3.4.11	284	Rules 3.4.11 and 3.4.12 – Treatment of Biomass Decomposition and Methane Emissions Rule 3.4.11 outlines the conditions under which methane emissions from biomass decomposition can be considered negligible (and therefore set to zero) during stockpiling, based on moisture content, aeration, and stockpiling time. Rule 3.4.12 states that in any other situation not covered by 3.4.11, methane emissions must be accounted for. Key Concerns: 1. Lack of explicit guidance on methane quantification Neither Section 3.4 (Operational Emissions) nor Section 7.3 (Operational Emissions) provide explicit methodologies or parameters for how methane emissions should be calculated when they must be included (under Rule 3.4.12). This creates a gap in guidance: -What emission factors should be used? -What decomposition models are applicable? -How are feedstock types and climatic conditions to be factored in? Without clear instructions, different projects could apply different assumptions, leading to inconsistent reporting and audit challenges. Risk: This lack of clarity could undermine comparability between projects, create disputes during audits, or force developers to commission bespoke, expensive methane studies just to comply with the standard. 2. Potential overgeneralization in Rule 3.4.11.c Rule 3.4.11.c allows developers to assume negligible methane emissions if biomass (like wood chips, sawdust, or agricultural residues) is stored at moisture below 30% and for less than 30 days. However, different biomass types and environmental conditions	Thank you for the feedback. Rule was edited as per other comments (#326, #122). Flexibility was added, with the following addition: "Other options to support that biomass decomposition and related methane emissions are negligible can be submitted by a CO2 Removal Supplier, and can be approved by the Issuing Body via rule clarification, acknowledging that regional or feedstock-specific adjustments may be necessary." Regarding quantification approaches, they are not specified in section 7 but we acknowledge that such calculations (when applicable) shall follow regional and feedstock-specific adjustments. Providing globally applicable default values is difficult. Regarding the 30 days and 30% moisture, the rule was revised (in line with the EU CRCF approach), to make this two separate options (or).	Major revision

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				(temperature, humidity, microbial activity) can significantly affect decomposition rates and methane generation. For instance: -Tropical climates could induce faster anaerobic decomposition even with relatively dry materials. -Highly processed materials like fine sawdust might retain moisture pockets even when general moisture appears low. -Stockpile size and ventilation could play important roles not captured by simple "moisture" and "time" thresholds. Risk: By relying on a universal threshold of 30% moisture and 30 days across all feedstocks and climates, the methodology may underestimate actual methane emissions in some environments. This could lead to overstated net CO_2 removal for some projects, impacting the environmental integrity of issued CORCs. Suggestion: We recommend that Puro: Clarify in Section 7 how methane emissions must be quantified when Rule 3.4.12 applies, including providing: -Default methane emission factors for common biomass types and climates; -Approved models or scientific references; -Flexibility for developers to propose justified approaches where defaults are not suitable. Refine Rule 3.4.11.c by either: Acknowledging that regional or feedstock-specific adjustments may be necessary; or Providing a scientific justification (e.g., references to peer-reviewed studies) for why a 30%/30-day threshold is robust across all contexts. Adding these clarifications would help ensure consistency, environmental robustness, and auditability across projects without imposing unrealistic burdens.		
BCH	3.4	3.4.11 c.	122	Most woody biomass has a moisture content of ~50%. Since there is a limit on processing within 30 days, I think the 30% should be raised to	Regarding the 30 days and 30% moisture, the rule was revised (in line with the EU CRCF approach), to make this two separate options (or).	Major revision

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				50%, or else even storing woody biomass (i.e. chips) in a pile for 2 days is technically not allowed.		
BCH	3.4	3.4.11. (new item)	458	Quote: [...] if any of the following rules can be demonstrated: [...] Comment: Add at the end: "e. The baseline scenario envolves biomass stockpiling and/or decomposition." Rationale: Baseline scenario should always be the reference. If the fate of the biomass in the baseline scenario is also stockpinling and/or decomposition, then it is not needed to account for methane emissions for the project (e.g., sugarcane bagasse is stockpiled in the baseline scenario). Without this edit, not only is the baseline not accounted for, but it also focuses on the smallest source of methane emissions – at the factory site, in a well-controlled storage environment, as opposed to outside the factory in uncertain storage conditions, as mentionned in paragraph "3.4. Biomass stockpiling along the supply chain". In summary, it cannot be asked to the CO2 Removal Supplier to account for methane emissions on its site if these emissions happened anyway in the baseline scenario of if they happen upstream after project implementation	The suggestion was added in rule 3.4.10 as well as in rule 3.4.11.	Major revision
BCH	3.4	3.4.11.c.	457	Quote: "Biomass consists of materials that do not necessarily ensure sufficient natural aeration (including wood chips, sawdust, agricultural residues) but the stockpiling conditions are such that moisture is below 30% and stockpiling time is less than 30 days prior to processing." Comment: Do the following edits: "[...] the stockpiling conditions are such that moisture is below 20% 30% and stockpiling time is less than 30 days prior to processing and stockpiling is done in a fully covered environment and storage area is fully covered, including ground insulation through concreting or similar." Rationale: Biomasses with less than 20% humidity (e.g., coffee husk) remain virtually intact even after one year of storage, provided they are stored in a well protected environment	Regarding the 30 days and 30% moisture, the rule was revised (in line with the EU CRCF approach), to make this two separate options (or). Additions on protection were made.	Major revision
BCH	3.4	3.4.1.1 b & d	295	Clarification - for point b and d there is no mention of a maximum moisture content - does that mean that biomass that has >30% would still qualify under the conditions of either b or d?	Potentially yes, as the objective is to prevent anaerobic decomposition primarily.	No change
BCH	3.4	3.4.12	1	If the CO2 removal provider cannot prove and points in a-d in rule 3.4.11 they must include methane emissions. It would be helpful to give guidance for which methodology the CO2 provider should use for quantifying the methane emissions.	A brief addition was made, highlighting that quantification can consider local climate factors. Universal equations are not provided yet.	Clarification
BCH	3.4	3.4.12	2	Typo in "Werehoused", should be Warehoused	Thank you for your feedback. The typo has been corrected.	Typo corrected

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BCH	3.4	3.4. Biomass stockpiling along the supply chain	459	Quote: "[...] briefly describe, to the extent possible, how biomass is werehoused along the supply-chain" Comment: "[...] briefly describe, to the extent possible, how biomass is werehoused warehoused along the supply-chain" Rationale: It makes absolutely no sense to require methane account within the factory but not outside, as external stockpiling is likely the time where most methane is emitted given storage conditions poorer than at the production site	The contextual paragraph on upstream supply-chain was deleted.	Major revision
BCH	3.4	3.4.12	432	Consider accepting regionally standardized assumptions for typical moisture content, storage emissions, and impurity levels to streamline LCA and emissions accounting for Category D (green waste) feedstocks -consider allowing the calculation of these standardized assumptions to occur over a longer timeframe (>1 year) and for these to be continually adjusted as feedstock is accepted -similar to the minimum calculated averages of duration of stockpiling temperature and moisture levels are accepted in section 3.4.10.	For rule 3.4.12, a brief addition was made, highlighting that quantification can consider local climate factors and standardized assumptions. Universal equations are not provided yet. For impurities, specifically for a feedstock in Category D, a representative and conservative assumption may be determined, provided the procedure is described in the Monitoring Plan.	Clarification
BCH	3.4	3.4.13	180	Is there a specific limit for impurities?	There are no explicit limits for impurities at the moment. As we understand it, for most macroscopic impurities, the safety of operations is guiding the choice of operators. Regarding plastic impurities, the limits are implicit as they affect the project emissions. The incentive exists to minimise the presence of plastic in the feedstock. This said, we have added now clarification regarding the on-purpose addition of plastic impurities in the feedstock (for co-pyrolysis). We have limited this to certain plastic types (with limited char yields) and with a maximum 5% by weight (dry basis). All emissions from fossil plastic pyrolysis and combustion remain to be accounted for.	Major revision
BCH	3.4	3.4.13	61	How will this be implemented? I doubt any supplier is going to say they have impurities, so it needs to be verified, but I feel like impurities are going to fluctuate in % of feedstock? Some definition needs to be given here or this concern needs to be addressed.	For most biomass feedstock, we deem that the risk for impurities is fairly low. However, for certain categories and sources, more attention is required. As we understand it, for most macroscopic impurities, the safety of operations is guiding the choice of operators. Regarding plastic impurities, inspections during audits can inform on whether the Monitoring Plan is making suitable choices and assumptions.	No change
BCH	3.4	3.4.15.	460	Quote: "The CO2 Removal Supplier must report the level of metal, glass and other mineral impurities (sand, clay) in the feedstock for each	The suggestion was incorporated.	Clarification

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				biomass batch received or carbonized" Comment: Do the following edits: "The CO2 Removal Supplier must report the level of metal, glass and other mineral impurities (sand, clay) in the feedstock for each biomass batch received or carbonized as per the frequency defined in the Monitoring Plan, in line with the requirements of paragraph 3.4.13." Rationale: Consistency with paragraph 3.4.13. which says "adjusted based on the risks for impurity presence in the feedstock"		
BCH	3.4	3.4.16.	461	Quote: "The CO2 Removal Supplier must report the level of plastic impurities (in a broad sense, including synthetic rubber) in the feedstock for each biomass batch received or carbonized." Comment: Do the following edit: "The CO2 Removal Supplier must report the level of plastic impurities (in a broad sense, including synthetic rubber) in the feedstock for each biomass batch received or carbonized as per the frequency defined in the Monitoring Plan, in line with the requirements of paragraph 3.4.13." Rationale: Consistency with paragraph 3.4.13. which says "adjusted based on the risks for impurity presence in the feedstock"	The suggestion was incorporated.	Clarification
BCH	3.4	3.4.17.	462	Quote: "The CO2 Removal Supplier must declare whether any of the biomass sources or biomass batches received poses environmental or health risks, in relation to its content in micropollutants, biological hazards or due to its classification as hazardous waste" Comment: Do the following edits: "The CO2 Removal Supplier must conduct, according to the Monitoring Plan provisions, sampling and analysis of the biomass and declare whether any of the biomass sources or biomass batches received poses environmental or health risks have been identified, in relation to its content in micropollutants, biological hazards or due to its classification as hazardous waste" Rationale: Consistency with paragraph 3.4.13. which says "adjusted based on the risks for impurity presence in the feedstock". Also, sampling every batch is impossible depending on the size of size of a batch (can be very granular for companies with good control of their supply)	The reference to individual batches was removed, as the concerns are more at the source level. No addition relating to rule 3.4.13 were made as they relate to different topics. However, additions were made in the next rule 3.4.18, adding reference to the Monitoring Plan.	Minor adjustment
BCH	3.4	3.4.19	255	Proposing hygienization to eliminate pathogens as a processing step prior to carbonization is not relevant, specifically regarding a quite large panel of feedstock such as manure, sewage sludge, ... Indeed, if carbonization is done in a way that all the points of the feedstock reach	A clarification was added that carbonization is usually sufficient. We note that local regulation may affect also what is required by operators.	Clarification

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				temperatures exceeding 500 °C (minimal required residence time of the solid depends on the size of the particles), then the operating conditions are much more severe than the approved sterilization conditions. It is necessary to delete this passage in order to not promote confusion or uncertainty about the eligibility of biogenic waste to be converted into biochar.		
BCH	3.4	3.4.21	62	What if the project is operating in jurisdictions without the need to permit/no strict permits? How is this addressed?	A provision was added. The Issuing Body reserves the right to evaluate whether the permit or authorisation is stringent enough for these high-risk micropollutants. Note that the absence of a permit will not be allowed - this is the point of the rule.	Minor adjustment
BCH	3.4	3.4.22	181	One would have though that the mixing of sewage sludge with woody material would be possible, as the mixing improves pyrolysis conditions and dilutes the presence of pollutants. This was done in the following studies: https://link.springer.com/article/10.1007/s11104-012-1131-9; https://www.sciencedirect.com/science/article/pii/S0146638012001532	We agree that co-pyrolysis of woody material and certain sludges can have beneficial effects on the agronomic properties of the product, and in particular nutrients availabilities (as tackled in the cited literature). In the original draft, we did not foresee that sewage sludge in particular would not be allowed to be mixed, but had in mind other more problematic feedstocks. Hence, we revised the rule so that it now only refers to the high-risk micropollutants identified in the previous rule 3.4.21.	Major revision
BCH	3.4	3.4.21–3.4.22	141	The methodology does not allow the mixing of hazardous and non-hazardous biomass but does not define what constitutes “mixing” operationally. For example, does processing batches consecutively in the same equipment qualify? Clarification would help.	Mixing two feedstocks together refers to blending them together prior to carbonization, as detailed in rule 3.4.6. and 3.4.7. A safety provision was added regarding sequential carbonization in the same equipment.	Minor adjustment
BCH	3.4	3.4.24	149	We question whether the requirement to estimate fossil carbon content in sewage sludge is practical. Given our assessment that this contribution would likely fall below 1% (well under materiality thresholds), we recommend either excluding this requirement entirely or implementing a standardized flat rate deduction. This approach would reduce operational costs significantly compared to the current quarterly measurement and reporting requirements.	Rule 3.4.24 was revised to provide different alternatives: - direct determination is still the preferred option, with an option of replacing measurements by a default value in the 2nd year - alternatively, pre-existing data or estimates can be used, if approved by the Issuing Body, based on their applicability to the project's context The approach taken is conservative. We welcome engagement of stakeholders working with sewage sludge, sharing data on measured contents of fossil C in various sludge, to develop a better understanding of the magnitude of those flows.	Major revision
BCH	3.4	3.4.23	182	In section entitled "Fossil-derived carbon in sewage sludge...". Line 8. Reference of Liu Chen, should probably be only Chen.	Thank you for your feedback. The typo has been corrected.	Typo corrected

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BCH	3.4	3.4.23	256	It is important to give an idea about the fraction of fossil carbon in total carbon contained in biosolids. It is indicated below that: it appears that some of the fossil carbon in wastewater is degraded during the treatment of wastewater, but that large share also remains in sewage sludge (5-25% depending on sludge type). If there is only 5 to 25 % remaining fossil carbon on a basis of 1 or 2 % of fossil carbon/total carbon, how relevant it is to make frequently an expensive analysis and to increase uncertainty of the relevancy of transforming biosolids to biochar? We are fear that this point is targeting an amount of carbon which is in the same order of magnitude of analytical uncertainties.	See reply to comment #149 on the same topic.	Major revision
BCH	3.4	3.4.23 and 3.4.24	518	Fossil Carbon Analysis: Sections 3.4.23 and 3.4.24 impose unnecessary costs.	See reply to comment #149 on the same topic.	Major revision
BCH	3.4	3.4.24	134	We support the inclusion of direct Carbon-14 testing in the methodology to determine the fossil-portion of fossil-derived such as sewage sludge, biosolids, and derivatives (3.4.24). However, we recommend that such testing should also be performed to the end products in cases where mixed feedstocks were used to produce biochar. Our experience working with mixed-stream products (ex. co-processing fuels, co-firing) has shown that determining the fossil-derived portion of the feedstocks used is not enough to accurately determine the fossil-portion of the end product. We recommend reviewing the following studies on co-processing conducted by the ASTM D02 Committee on petroleum products, liquid fuels and lubricants. We specifically recommend reviewing RR:D02-2052, which compares the results of ^{14}C and mass balance (calculation based approach) in co-processing facilities.	See reply to comment #149 on the same topic.	Major revision
BCH	3.4	3.4.24	418	Direct determination of fossil carbon content in sewage sludge is recommended not mandatory. I'm afraid that LSC and AMS analysis is very complex and costly. Is it commercially available from accredited labs? The recommendation in itself and the requirement to do it 4 times a year seems to be exaggerated. As per the article cited the seasonal variation in municipal sewage sludge is not large and less that the variation between AMS and LSC methods. The analysis may be more costly than the added value. It seems premature to establish this requirement based on one article showing that 3-10 % of the C is from fossil origin. It might be easier just to allow deducting 6-7 % of the C content in biosolids biochar as a genral rule, instead of doing a lot of very costly analysis.	See reply to comment #149 on the same topic.	Major revision

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BCH	3.4	3.4.26	419	Here in conflict with 3.4.24 the determination of fossil carbon content in the biomass is mandatory.	Rule 3.4.26 summarizes previous rules, highlighting what aspects have to be covered. Covering determination of fossil carbon content in the biomass relates to impurity management (e.g. presence of plastic) among other.	No change
BCH	3.4	overall	512	4. Biomass Sustainability and Traceability (Section 3.4) The updated methodology rightly emphasizes sustainability and legality in biomass sourcing. However, the traceability requirements may not be readily applicable in contexts where supply chains are informal or community-managed. Recommendation: We recommend: - Clear guidance on how small-scale or informal suppliers can meet traceability requirements; - Recognition of regional sustainability frameworks (e.g., indigenous or community forest governance); - Flexibility in demonstrating compliance where conventional certification is unavailable. This would broaden the applicability of the methodology and encourage responsible biomass use in underserved markets.	Thank you for your comment. At the moment, smallholders can to comply with their traceability requirements for their forest biomass (category G in Biomass Sourcing Criteria) based on various local certification programmes, regardless of whether they are public or private in nature. We may consider other future solutions for smallholder, indigenous, or community forest governance practices.	No change
BCH	3.4	0	302	Biomass sourcing must not be allowed to PERMANENTLY damage natural ecosystems	We agree in principle with the commenter, but have decided not to revise the introduction text to section 3.4 (not adding the word "permanently") because damage to natural ecosystems are not limited to "permanent" damages but potentially other forms. Note that this paragraph is an introduction to the section, and is not a numbered rule item.	No change
BCH	3.5	3.5.1	150	The current H/C ratio threshold of 0.7 resembles charcoal-grade material with limited stability. We strongly recommend lowering this threshold to at least 0.5 (consistent with Isometric's standards) or implementing a tiered approach that correlates CORC quality/permanency with biochar characteristics.	Latest analyses of biochar incubation data conclude that biochars with 0.5 < H/C < 0.7 also make significant contributions to carbon storage.	No change
BCH	3.5	3.5.1	503	"Biochar can be produced in any type of carbonization reactor provided that the biochar produced has a molar hydrogen to organic carbon ratio (H/Corg) strictly below 0.70. The H/Corg is an indicator of the degree of carbonization achieved during production." Very generous	See reply to comment #150	No change
BCH	3.5	3.5.3	504	Continuous, i.e. reactors in which biomass can be fed continuously into the process without interruption. Batch, i.e. reactors in which a fixed amount of biomass is introduced before start-up, and which must be shut-down before reloading with a	Such systems - in our current understanding - would not be classified as continuous systems, but rather batch or semi-continuous systems.	No change

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				new batch of biomass. Semi-continuous, i.e. series of batch reactors jointly operated to mimic continuous operations, certain batch reactors where biomass can be reloaded at specific intervals during operations (e.g. certain containerized flame curtains), or other similar situations. "Examples would be helpful - for instance we will probably move to 24 hours per 5 days production on bottom extraction Kon Tikis... are we No1 or 3? "		
BCH	3.5	3.5.4	346	We agree that fossil fuel use should be minimized, but it must be realistically acknowledged that certain fossil inputs (e.g., diesel igniters, backup burners) are sometimes necessary for startup sequences	We agree. This is precisely the point of rule 3.5.4.	No change
BCH	3.5	3.5.4	63	Maybe a suggestions to minimize and switch to alternative fuels within X months of operations should be stated here. While it is hard to force a supplier to switch, atleast the motivation should clearly be stated for those who want to operate at best practice and an additional timeline here would give additional motivation.	Strictly requiring to switch fuel is not possible; however, the revised text now specifically mentions the use of renewable fuels, which was implicit before. This was added in the last sentence of rule 3.5.4.	Clarification
BCH	3.5	3.5.4 p.29	257	Could you make more explicit in this list that a fossil fuel (gas, oil) is mandatory used in many countries for any non-conventional gas boiler (which is obviously the case for the syngas) to avoid any flameout event ("flamme pilote" in French).	The mention of pilot flames, which may be mandatory in certain jurisdictions, was added to rule 3.5.4.	Clarification
BCH	3.5	3.5.5.	463	Quote: "The CO2 Removal Supplier must monitor the amounts of waste generated, classify the waste according to their environmental and health hazards, demonstrate the fate of such waste streams, e.g. via monitoring and record keeping. [...] This includes any liquid effluents (e.g. lubricant oils, wastewater, and industrial sludges), residues and spent consumables from the flue gas treatment system (e.g. filter residues, spent filters), and spent materials or reactor parts" Comment: "The CO2 Removal Supplier must monitor the amounts quantity of industrial waste generated, classify the this waste according to their its environmental and health hazards, and demonstrate, for all waste streams (including non-industrial) the fate of such waste streams, e.g. via monitoring and record keeping [...] This Industrial waste includes any liquid effluents (e.g. lubricant oils, wastewater, and industrial sludges), residues and spent consumables from the flue gas treatment system (e.g. filter residues, spent filters), and spent materials or reactor parts" Rationale: - "Amounts" is unclear; better to say quantity so that it is clear	The suggested changes were incorporated; limiting to a large extent the focus on industrial waste streams, which was the intent of the rule (disregarding common house-hold waste).	Minor adjustment

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				that expectation is mass or volume of waste - restricting the first part of the requirement to "industrial waste" is important as it may not always be technically feasible to quantify non-industrial waste (e.g., kitchen or toilet waste volumes) - all waste streams (including non-industrial) should be proven to be managed properly, even if for non-industrial waste the volumes are not exactly quantified (in this case, need to prove at least that waste water is sent to sewer or decantation for example)		
BCH	3.5	3.5.7 - c	282	Rule 3.5.7 c states that: "Storage tanks capacity must be able to accommodate for at least 12-months worth of liquid product generation under normal conditions." Concern: While we understand the intent of ensuring controlled management of liquid co-products, requiring storage capacity for an entire year's worth of production is highly capital-intensive and overreaching in many real-world project settings. In practice, designing and building storage infrastructure capable of holding 12 months of continuous liquid generation would involve substantial upfront capital expenditure, significant land use, and long-term environmental permitting challenges—especially for small- and medium-sized facilities. This requirement could disproportionately burden smaller projects and slow project scaling without necessarily delivering proportional improvements in environmental control or safety. Suggestion: We recommend that Puro consider more flexible approaches, such as: Requiring storage for a shorter operational buffer (e.g., 1–3 months), aligned with realistic waste management or reuse cycles; Allowing projects to demonstrate alternative risk mitigation measures (e.g., contractual off-take agreements, scheduled liquid waste processing, periodic emptying); or Tailoring the storage requirement proportionally to production scale or risk class. This would preserve environmental integrity while reducing excessive capital barriers and encouraging broader project participation.	Rule 3.5.7 was adjusted as per several comments. It revers to minimum 3-months of storage capacity, with possible deviations if a management plan justifies it. Plastic tanks are also mentioned as an acceptable example. It is mentioned that tars can solidify if cold. Separate quantification of liquid streams was limited to products intended for use.	Minor adjustment

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BCH	3.5	3.5.7.	464	Quote: Paragraph title: "Management of liquid co-products" Comment: Remove paragraph title to keep content under the previous title ("Management of carbonisation co-products"), and do the following edits: - "In facilities where tars, oils or wood vinegar are generated, referred to as liquid co-products" - "a. Once generated, liquid co-products must not be subsequently mixed with water" - "b. Liquid Co-products must be collected and stored in tanks" - "c. Storage tanks capacity must be able to accommodate for at least 6 12-months worth of liquid co-product generation under normal conditions, unless a diposal scheme is in place that guarantees the CO2 Removal Supplier's ability to not need this storage capacity" - "d. For co-products destined to be used, Equipment used must enable monitoring and quantification of amounts of liquid products generated, from each stream separately (e.g. tars from specific condenser in normal operations, tars from pipe cleaning cleaning). For co-products destined to be disposed of, quantification of amounts per type of co-product is enough." Rationale: - Tar is not always liquid (can be solid or can solidify when cold). - c: 12 months worth of storage is a lot for all co-products. Proposal to lower it to 6 months; can be lower if the CO2 Removal Supplier has a proper way to continuously dispose of (or use) the co-products without storage requirement - d: Impossible to properly keep track of the exact origin all cleaning residues, and such traceability is not needed if they are destined to be disposed of	Changes were made to the rule. See reply to comment #282.	Minor adjustment
BCH	3.5	p. 30, section 3.5.7.d	183	"cleaning"is repeated.	Thank you for your feedback. The typo has been corrected.	Clarification
BCH	3.5	p. 30, section 3.5.7.g	184	What about the burial option for which credis can be claimed from?	Burial of pyrolysis oil for carbon removal is beyond the scope of this methodology. If it is legal in the country of use; this can be performed, but it does not result in removals accounted for in this methodology neither in other Puro Standard methodologies at the moment.	No change
BCH	3.5	3.5.7	296	Storage tanks capacity for 12 months of bio-oil on site seems a bit excessive, could it be reduced to 3 months minimum?	The rule was reverted to a storage capacity of at least 3-months minimum. See reply to comment #282.	Minor adjustment
BCH	3.5	3.5.7.b	232	Normal IBC containers suit well storing and transporting wide variety of chemicals, including bio-oils and tars formed in pyrolyzer. Suggestion:	The mention of plastic tanks was added as suggested. See reply to comment #282.	Minor adjustment

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				Last sentence to be changed to "Closed steel or plastic tanks are usually acceptable."		
BCH	3.5	3.5.7.c	19	The rule stipulates that storage tanks capacity must be able to accomodate for at least 12-months worth of liquid product generation under normal conditions. This implies operators need to install very (!) large storage tanks to be able to collect a year's worth of liquids, even if in practice they will not use such a huge storage capacity. This seems wasteful in terms of use of space and resources. It makes much more sense to require 'adequate storage space', in function of the use/commercialization or controlled disposal of the liquids. Rule 3.5.7.e already stipulates that storage cannot be longer than 12 months and that operators must have tangible plans for the management of any liquid products that are generated. In many cases, a reasonable approach would be a maximum storage period of (e.g.) 3 months, a concrete plan for the use or disposal within those 3 months, and a storage capacity buffer of (e.g.) 25%-33% on top of the foreseen maximum storage time (in this example: a storage capacity of 4 months). The basic concept of ensuring sufficient storage capacity makes sense; however, requiring this storage capacity to be at least 12-months worth of liquid product generation seems excessive and wasteful.	The rule was reverted to a storage capacity of at least 3-months minimum. See reply to comment #282.	Minor adjustment
BCH	3.5	3.5.7c	108	Propose this clause is deleted or made more specifically fit for purpose. eg The Carbon Removals Supplier will provide a Liquids Disposal Plan and Report as part of the Output Report. To ensure no release of liquids to the environment, Liquids Storage Tank capacity must be shown to provide sufficient storage for the liquids production and liquids disposal process. 12 months storage is an unecessary requirement with respect to [[COMPANY NAME]] technology and would add significant unjustified storage tank cost. No oils and tars leave the [[COMPANY NAME]] reactor. [[COMPANY NAME]] produces only cool clean syngas that is exported to displace fossil fuels, biochar and wood vinegar. [[COMPANY NAME]] wood Vinegar is either exported for use as a bio stimulant for composting, horticulture or agriculture, or added to the biochar as dosing water or disposed of via registered waste disposal processes. On site wood vinegar storage for several days production is adequate for the logistics involved.	As per other comments the storage tank capacity was adjusted to 3-months. See reply to comment #282.	Minor adjustment
BCH	3.5	3.5.8	151	We propose allowing shorter residence times when facilities can demonstrate compliance with relevant emission thresholds. For context, [[COMPANY NAME]] standard residence time of 0.7s achieves market-	Thank you for the information. The rule does not require a specific residence time, but mentions it as one design measure indicative of certain combustion systems for achieving the goals stated. The	No change

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				leading low emissions due to our advanced emission reduction technology. We suggest requiring annual emission reports to verify compliance regardless of residence time specifications.	rule 3.5.8 is purely descriptive, and is then used in rule 3.5.17. Annual testing of air pollutant emissions cannot be imposed at the methodology level. Local regulation must be followed.	
BCH	3.5	3.5.8	285	Specific Feedback: Rules 3.5.8 and 3.5.17 a.ii – Over-prescription of Technology Design Rule 3.5.8 outlines a highly detailed list of design features expected in combustion systems to ensure complete combustion of carbonization co-products. Rule 3.5.17 a.ii then requires that to demonstrate negligible CH_4 emissions, a reactor must incorporate at least 6 of the design measures specified in Rule 3.5.8. Key Concerns: 1. Over-prescription risks limiting innovation and technological diversity By prescribing specific internal design features (e.g., forced air blowers, tertiary air injection, turbulence chamber shaping), the methodology moves beyond setting performance standards (outputs) into mandating specific engineering solutions (inputs). This approach boxes in technology developers, risks excluding viable reactor designs, and discourages innovation that could achieve the same or better outcomes through different engineering principles. Technologies such as gasifiers, alternative staged pyrolysis systems, or advanced oxygen-lean designs may not conform neatly to the prescribed combustion chamber features but could still achieve excellent combustion and negligible emissions. 2. Unnecessary disclosure of proprietary technical details To demonstrate compliance with Rules 3.5.8 and 3.5.17 a.ii, project developers would likely have to submit detailed internal schematics and engineering data of their reactor systems. This raises intellectual property concerns, as many reactor designs involve proprietary technologies. Requiring public or auditor-level disclosure of fine technical specifications could expose commercially sensitive information, creating risks for technology companies. 3. Academic rigor vs. practical verification While the academic intent behind defining ideal combustion chamber parameters is understandable, in practice, proper emissions monitoring	Thank you for this thoughtful comment. We would like to clarify that the approach already provides the flexibility the commenter is advocating for. Specifically, projects may demonstrate negligible CH_4 emissions either through combustion system design or through direct measurement and emissions data, as outlined in the rules. This dual-pathway structure accommodates diverse engineering solutions while ensuring robust environmental safeguards. Beside CH4/N2O related rules, other rules have been edited as per other comments to give more flexibility to various design (e.g. co-product management).	Clarification

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				and output verification should be the primary control. If continuous flue gas monitoring, residual CH_4 measurements, and emission sampling are properly implemented and verified, it becomes unnecessary—and arguably counterproductive—to dictate how combustion must be achieved internally. Suggestion: We recommend that Puro consider reframing these rules to focus on measurable outcomes rather than prescriptive design: - Define required emissions performance targets (e.g., residual CH_4 < 1% CO_2e) and/or air quality outputs. - Allow technology-neutral pathways to achieve compliance, where developers demonstrate results rather than design characteristics. - Where minimal design standards must exist (e.g., for safety), keep them flexible and acknowledge multiple acceptable pathways to compliance. This outcome-based approach would encourage innovation, protect proprietary technology, and better align verification efforts with environmental objectives, rather than with internal engineering choices.		
BCH	3.5	3.5.8 onwards Multiple subrules	312	The requirements for production equipment monitoring may force existing biochar producers (or suppliers who have ordered equipment) to modify equipment and retrofit sensors etc, which can lead to costly disruptions. We ask that operational producers are given time sufficient time to adapt, if needed, and are not automatically excluded on these basis if they can present a plan to adopt to changes.	Rule 3.5.8 does not mandate the design features to be installed. It lists examples, which are then used in rule 3.5.17 if the suppliers wants to avoid measurements of CH4. This said, it is true that adaptations may be required from suppliers having started designing new facilities, but is generally meant to increase the quality of projects. Please note that a transition plan is also published. This plan ensures that suppliers will have time to adapt.	No change
BCH	3.5	3.5.8.	465	Quote: Paragraph title: "Design measures to ensure complete combustion of co-products" Comment: Add at the end: "To be eligible for certification, all technologies must at least comply with the requirements of items b, c, e, f, and i." Rationale: If these requirements are not met, there are not enough guarantees on the quality of the combustion	Due to technological variability, it is not possible to require all those features, even for continuous reactors. See for instance comments #151 and #285 from other organisations The suggestion was not incorporated.	No change
BCH	3.5	3.5.11.	466	Quote: "[...] the CO2 Removal Supplier must monitor the quality of the flame or equivalent parameters" Comment: Do the following edit: "the CO2 Removal Supplier must monitor the quality of the flame post-combustion temperature or equivalent parameters. Autothermal process must further monitor the actual carbonization temperature."	Flame quality was suggested in a working group session. It was here replaced by combustion temperature, as suggested, which is indeed an important indicator of flame quality and presence. Flexibility is preserved with other equivalent parameters. A clarification is made about the difference between combustion temperature and carbonization temperature.	Minor adjustment

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				Rationale: - Flame quality is a very subjective parameter, especially if the methodology does not reference any specific standard. Post-combustion temperature is much more objective and reliable, and should be a requirement for all technologies - Autothermal have the ability to also monitor directly the actual carbonization temperature, which should be made a requirement to ensure product quality		
BCH	3.5	3.5.12	64	Who keeps track of these maintenance operations? Some evidence should be provided e.g. receipts, documents etc. This should be mentioned clearly here.	Record keeping and Monitoring Plan are now mentioned in the rules.	Minor adjustment
BCH	3.5	3.5.12.	467	Quote: "To minimize any losses of fluids throughout the system, the operator of the facility must follow any procedures required by the equipment manufacturer and conduct at least annual maintenance operations that ensure tightness of the equipment." Comment: Do the following edit: "[...] follow any procedures required by the equipment manufacturer and conduct at least annual maintenance operations that ensure tightness of the equipment by following the rule below: - If syngas/tar conditionning is external, conduct a tightness test at least once a month; - If syngas/tar conditionning is internal in a process working under positive atmospheric pressure, conduct a tightness test before every start-up; - If syngas/tar conditionning is internal in a process working under negative atmospheric pressure, ensure ongoing pressure monitoring and record-keeping of values. Any abnormal pressure must trigger an alarm and a suitable remediation action, and be reported as incidents." Rationale: Tightness tests are crucial to ensure safe operations. They must be conducted with MUCH higher frequency than once a year. The currently proposed once-a-year frequency is a major safety hazard	The annual frequency was removed and replaced by a suitable frequency, to be specified in the Monitoring Plan, depending on the technology used.	Minor adjustment
BCH	3.5	3.5.13.	468	Quote: "Technologies that are designed to maintain below-atmospheric pressure levels under normal operating conditions must monitor and keep records of pressure values throughout the system. Any abnormal pressure values must trigger an alarm and a suitable remediation action, and be reported as incidents." Comment: Delete all paragraph and replace by the following text: "Regardless of the type of technology, facilities must have carbon monoxide (CO) detectors, both fixed and mobile (work by staff operating in close proximity with a reactor)"	The rule is kept separate. A new rule is added for CO risk management.	Major revision

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				Rationale: - Pressure provisions are already included in the revised paragraph above - CO is a key safety parameter that MUST be monitored constantly to avoid rapid death in case of leakage. Further provisions could even be added to ensure that the facility's design has passive safety design to disperse CO in case of leakeage (e.g. with open sides to ensure natural ventilation)		
BCH	3.5	3.5.14	230	Flare is a critical required safety system for a pyrolyzis process. Using flare in the pyrolyzer start-up and shut -down procedures is a part of normal, safe operation routine. Thus using flare during start-up and shut-down doesn't create an "incident" and must be excluded from the incident reporting. Suggestion: exclude planned starts and stops from the flare incident reporting.	The suggestion was incorporated.	Minor adjustment
BCH	3.5	3.5.14.	469	Quote: "The CO2 Removal Supplier must declare any safety flares or vents installed at the Production Facility, and have procedures detailing how these systems are to be used. Further, the CO2 Removal Supplier must be able to detect and monitor all events when any volatile matter is channelled through these systems, and include any associated greenhouse emissions in its reporting" Comment: Do the following edit: "[...] procedures detailing how these systems are to be used. All flares and vents must be designed in such a way that the discharge flux cannot pose a safety risk to operators. This notably implies that all discharge is channelled through a closed, tight piping system until the exhaust stack, which must not be located inside the production hangar. Further, the CO2 Removal Supplier must be able to detect and monitor all events [...]" Rationale: Discharging in an area where humans are supposed to be located is a major security risk that must be prohibited.	This is now covered as part of a new rule on management of CO. It was also incorporated in 3.5.14.	Major revision
BCH	3.5	3.5.15	66	How is continued compliance monitored? Continuous monitoring? Additionally I would suggest to also report emission values in the subsequent Output Audit.	The details depend on the local regulation for air pollutants, and do not need to be specified here. Verification of continued compliance can be done during the Output Audit by the auditor, by verification of the evidence submitted. The nature of this evidence will vary based on the regulation.	No change
BCH	3.5	3.5.15	380	Emissions during production" In any case, testing methods, testing frequencies, and limit values are set by the local regulation; and Puro. Earth adopts those regulations." Consider having a minimum standard that is acceptable to account for jurisdictions with low or no regulatory requirements. Or Consider excluding jurisdictions that do not have suitable regulatory frameworks for CO, NOx, SOx and PMs	Thank you for the suggestion. This has been discussed in the working group sessions, and it was deemed not necessary at the moment to impose a global minimum for CO, NOx, SOx and PMs, knowing also that such minima would be dependent on many variables. Note that re: biomass feedstock with high risk micropollutants, other rules apply (section 3.4).	No change

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BCH	3.5	3.5.15	328	In the sentence "Any situations where CH4 emissions are excessive, i.e. cancelling a large share if not all the biochar carbon storage value, should not be eligible for certification", we suggest changing "should not be" to "are not". The word "should" suggests ambiguity where a unit with excessive emissions attempts to generate credits. If the intent is to have a maximum of allowable CH4 emissions, it should be explicit.	The suggestion was incorporated.	Clarification
BCH	3.5	3.5.15	65	Emissions of air pollutants: What is local regulations are not sufficient?	See reply to comment #380	No change
BCH	3.5	3.5.16	123	In the last sentence of "Emissions of greenhouse gases during production", it is unclear to me what "must require all projects to follow the same rules" is in reference to. What rules?	The sentence was reformulated. The rules are the one following this context paragraph.	Clarification
BCH	3.5	3.5.16	67	Here and in all later points of the document: For CH4 emissions the scientific consensus is to use GWP 20, switching from GWP 100 does not alter the values much, but is the correct equivalent factor that should be used. There is no reason to stick to GWP 100.	Thank you for your comment. We will maintain our requirement for GWP100 as this ensures the integrity of the GHG emissions accounting process by retaining the same conceptual framework: impacts across the same fixed time horizon and all modelled processes (foreground and background).	No change
BCH	3.5	3.5.16.	470	Quote: "Residual CH4 emissions from the carbonization process must not exceed 15% of the initial carbon stored in biochar" Comment: Do the following edit: "Residual CH4 emissions from the carbonization process must not exceed 15% of the initial carbon stored in biochar 0.5% in mass of the total flue gas mass" Rationale: - Quantifying methane in relation to biochar mass is unpractical and not the normal way of doing. All CH4 measurements involve determination of CH4 mass and total flue gas mass over a given peiod. Therefore, it is better to do mass of CH4 over mass of total flue gas. We also propose to lower the threshold, hence 0.5%	We agree in principle; however, from a standard perspective, noting that projects have different volumes of flue gas generation, air mixing ratios, and biochar yields, it is preferred to limit it from a climate impact perspective. We expect all projects to be well below the 15% limit imposed here. The reference to the reporting period was unnecessary and removed.	Minor adjustment
BCH	3.5	3.5.17	68	Residual CH4 emissions are set to a conservative devault value of 0.5 kg CH4 per metric tonne of biochar produced, how is this derived? How is this connected to 1%? Reasoning should be given here.	This default value is suggested by Puro based on data processed and literature data. It is deemed conservative for the systems evaluated in this rule, and having little to no impact on CORCs. For reference, a dry metric tonne of biochar sequesters about 2300 kg of CO2.	No change
BCH	3.5	3.5.17	505	For continuous reactors, all following conditions are met: The reactor design clearly exhibits that all volatile matter to be combusted is adequately channelled to combustion systems. The reactor design is equipped with advanced combustion systems that enable complete combustion of volatile matter. To be considered an advanced combustion system, the reactor must have at least 6 of the design features identified in rule 3.5.8. Very restrictive – disqualifies Kon	For other reactor designs, other rules are applicable. They are not excluded per se. See following rule 3.5.18.	No change

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				Tikis and by definition locking out 90% of Africa's volume biochar producers – leaving the micro-players (1,000 tonnes scale) with $1Mn to $2Mn investment funds. Here I switch off... and comments further down are at 30% brain capacity.		
BCH	3.5	3.5.17 a. iv.	124	The methodology says "Facility-specific measurements of CH4 emissions are then not required, but can still be provided." This says they can be provided, but does not say they can be used in accounting. I would explicitly state that the tested emissions values can be used in place of the default values.	Suggestion was incorporated	Minor adjustment
BCH	3.5	3.5.17.a.ii	231	Achieving a well controlled and complete combustion of hydrocarbons is possible with fewer than six on the design features listed in 3.5.8 Also some of the features are vastly more important for complete and well controlled combustion (e.g. b, i and j are important) than others (e.g. d, e and h have clearly smaller importance). Suggestion: The required number of the design features to be changed from six to four.	For conservativeness, we have decided to keep the number to six.	No change
BCH	3.5	3.5.17.a.iv.	471	Quote: "If the conditions i) to iii) above can be demonstrated, residual CH4 emissions are set to a conservative default value of 0.5 kg CH4 per dry metric tonne of biochar produced, for normal operations. Note that all facilities should strive for achieving negligible CH4 emissions at all times. Facility-specific measurements of CH4 emissions are then not required, but can still be provided." Comment: Do the following edit: "Facility-specific measurements of CH4 emissions are then not required, but can still be provided, in which case they override the conservative default." Rationale: Measured values should always prevail over estimated values	Suggestion was incorporated	Minor adjustment
BCH	3.5	3.5.18	69	b. similar needs to be clearly defined here and in the following. This leaves too much uncertainty.	The term "same technology" was further specified. However, similar operating conditions was not deemed necessary to specify.	Minor adjustment
BCH	3.5	3.5.18.b.	472	Quote: "Measurement of residual CH4 emissions from the carbonization process, whenever required, can be either [...] b. reused from a previously certified facility, from the same CO2 Removal Supplier, using the same technology, similar operating conditions and similar feedstock type" Comment: Do the following edit: "[...] reused from a previously certified facility, from the same CO2 Removal Supplier, using the same technology type from the same technology provider, similar operating conditions and similar feedstock type, provided at least 5 historical datapoints exist, from at least two different facilities, measured at least one month apart from one another, under normal operating conditions"	The suggestion was partly incorporated, with specification of the type and provider.	Minor adjustment

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				Rationale: One datapoint is not enough to prove consistency. Similarly, data from only one site may not be sufficiently representative		
BCH	3.5	3.5.18.c.	473	Quote: "Measurement of residual CH4 emissions from the carbonization process, whenever required, can be either [...] c. reused from academic literature, provided that the results were derived from the same technology, similar operating conditions and similar feedstock type" Comment: Delete this item Rationale: Academic literature is not reliable enough for reusing results, as too many variables enter into play. In general, the methodology should aim to reduce to the minimum the number of non-measured parameters	The suggestion was deemed not necessary to incorporate. Certain suppliers may have their measurements and tests results published in scientific literature, with tests performed a research team, rather than a 3rd party laboratory. Note that the Issuing Body must review and approve the presented data, as stated in the rule.	No change
BCH	3.5	3.5.18.d.	474	Quote: "Measurement of residual CH4 emissions from the carbonization process, whenever required, can be either [...] d. reused from equipment manufacturer testing, provided that the results were derived from the same technology, similar operating conditions and similar feedstock type" Comment: Do the following edit: "reused from equipment manufacturer testing, provided that the results were derived from the same technology, similar operating conditions and similar feedstock type, and only to the extent that the technology has been previously approved by the Issuing Body along the requirements of rule 3.1.2." Rationale: Edits porposed to rule 3.1.2. require a standardized approval process for Puro-approved technologies, to ensure consistency and minimum quality threshoulds	The suggestion was deemed not necessary to incorporate. Same technology "type" was however added for consistency with 3.5.18b.	No change
BCH	3.5	3.5.19.c.	475	Quote: "Measurement of CH4 concentration in the flue gas can be performed via e.g. flame ionisation detection (FID, see ISO 25140:2010) or gas chromatography (see ISO 25139:2011)." Comment: Do the following edits: "Measurement of CH4 concentration in the flue gas can be performed via e.g. flame ionisation detection (FID, see e.g. ISO 25140:2010) or gas chromatography (see e.g. ISO 25139:2011)." Rationale: Clarify that these are examples of standards, not required standards	Suggestion was incorporated	Clarification
BCH	3.5	3.5.19	70	i. Here the CH4 emission is given per dry metric tonne of biomass - above it is given as per tonne of biochar? Why is this not consistent, it should be given as either or, but not both.	Albeit it does not affect the calculation nor the rules, the change was incorporated. Often, during an emission test, amount of biomass fed is recorded.	Minor adjustment
BCH	3.5	3.5.19 p. 34	233	It is correct that NOx emissions of fluidized bed reactors are low - there is plenty of scientific literature on the subject. On the contrary the N2O emissions of fluidized bed reactors - especially circulating fluidized bed reactors are very high, markedly above traditional furnace / burner	Thank you for the references and comment. The contextual paragraph was revised accordingly.	Clarification

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				designs. This is due to the lower combustion temperatures which favour N2O formation. N2O formation practically stops when combustion temperatures exceed 900 C. See for example: Technical researc centre of Finland https://publications.vtt.fi/julkaisut/muut/2007/JGGC_2007_1.pdf and BAT BREF document tables 5.18 and 5.19 page 392 Suggestion: correct the chapter to reflect that fluidized bed reactors give increased N2O emissions in the lower combustion / pyrolyzing temperatures.		
BCH	3.5	3.5.20-3.5.21	185	In section 3.5.20, the option for a site measurement is not listed. Then, listing methods in section 3.5.21 seem inconsistent. Perhaps the two sections need to be better linked?	Subrule d corresponds to on-site measurements.	No change
BCH	3.5	3.5.20	3	The text states that N2O can be modelled with an emission table 3.1, is the applicability of this table exact as the written biomass feedstock? E.g., wood biomass is not considered grass or other type of biomass created through photosynthesis. If so I beileve it would be good for the text to clarify this, and that other feedstocks (nut shells, coconut husks, agricultural residue products, purpose grown non-wood biomass, etc) need N2O need to be modelled according to points b-f in chapter 3.5.20	This is correct interpretation, as per the last column of the table. A footnote was added to mention that additional default values may be added in the future, if they become available. The rule was also edited to reflect this (3.5.20a).	Minor adjustment
BCH	3.5	3.5.20.b.	476	Quote: "[...] derived from an emission factor provided by a local authority for statutory reporting of greenhouse gas emissions, as applicable for technology and biomass types." Comment: Delete item Rationale: Too many variables involved to reuse standard values. In general, the methodology should aim to reduce to the minimum the number of non-measured parameters	The option was not deleted as it exists in particular for power plants in the USA, where extensive N2O measurements campaigns have been made.	No change
BCH	3.5	3.5.20.c.	477	Quote: "[...] derived from peer-reviewed scientific literature, as applicable for technology and biomass types." Comment: Delete item Rationale: Too many variables involved to reuse standard values. In general, the methodology should aim to reduce to the minimum the number of non-measured parameters	See reply to comment #473.	No change
BCH	3.5	3.5.20.e.	478	Quote: "reused from a previously certified facility, from the same CO2 Removal Supplier, using the same technology, similar operating conditions and similar feedstock type" Comment: Do the following edits: "reused from a previously certified facility, from the same CO2 Removal Supplier, using the same technology type from the same technology provider, similar operating conditions and similar feedstock type, provided at least 5 historical datapoints exist, from at least two different facilities, measured at least	Similarly to comment #472. Partly incorporated, focusing on type and provider of equipment.	Minor adjustment

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				one month apart from one another, under normal operating conditions" Rationale: Same reasons as for methane (see edit about rule 3.5.18.b. above)		
BCH	3.5	Table 3.1.	479	Quote: Table title: "Default factors for direct N2O emission from biomass combustion, used as proxy data in the context of biochar production." Comment: Add a row: "Crop residues", with value 0 kgN2O Rationale: Very little N in crop residues	We are not convinced that agricultural residues have always lower N content than e.g. wood biomass. Crop residue burning (in open conditions) is a source of N2O emissions.	No change
BCH	3.5	Table 3.x	497	This is not a comment on specific bits per se. I find little wrong in the document in micro-detail except where you express N_2O production in terms of grammes per TJoule. Maybe g per Tg? No big deal, there is a conversion ratio between tonnes of biomass and Tjoules.	The unit is believed to be correct, as per the IPCC reference.	No change
BCH	3.5	3.5.24	71	Here a definition should be given that the biochar needs to be used within a certain timespan.	This is usually not deemed relevant here.	No change
BCH	3.5	3.5.27	347	We support the requirement for MSDS as good industry practice. However, for retrofitted biomass power plants producing biochar, we note that the creation of MSDS for biochar/high carbon ash could create a liability concern. Recall that high carbon ash is considered a waste, and often regulated differently depending on its end use (soil amendment, material, etc.), and improperly labeling or oversimplifying its properties in an MSDS could expose operators to unnecessary legal or regulatory risks.	Sentence was revised to mention other types of documents that may be required in certain cases.	Minor adjustment
BCH	3.5	3.5.27	348	We recommend clarifying that the MSDS should be aligned with the intended use of the biochar and based on applicable national regulations and standards for material handling , not generalized assumptions. Where official classifications (e.g., non-hazardous material designation) exist for similar products, these should be referenced to avoid overburdening or misrepresenting the facility's compliance obligations.	We deem the clarification request aligned with the intent of the current rule.	No change
BCH	3.5	3.5.30	72	The engineering design of the facility should mandate minimal energy use.	Energy efficiency of biochar production processes is a natural incentive for projects, both economic and affecting quantification. Energy generation is now also required in certain situations as per the revised section 8 on leakage.	No change
BCH	3.5	3.5.30	286	Specific Feedback: Rule 3.5.30 – Engineering Design Documentation Requirements Rule 3.5.30 requires the CO_2 Removal Supplier to provide detailed engineering designs and technical specifications for the carbonization reactor and associated equipment. The documentation must clearly show system components, process flows, and reference specific design features (especially those listed under Rule 3.5.8). These documents must be submitted for the initial Facility Audit and updated for every Output Audit if major changes occur.	It was clarified that those elements are of confidential nature. The documents can be necessary for verifications and for evaluation of compliance with various rules. Note that it is not the intent to have specifications and pictures of every single component of a machine; but at least the level necessary to evaluate projects. This was clarified as a note.	Minor adjustment

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				Key Concerns: 1. Disclosure of proprietary and sensitive technical information Requiring detailed technical drawings, internal specifications, and schematics exposes core intellectual property of biochar reactor and facility designs. For many technology providers, this information is commercially sensitive, often protected under patents, trade secrets, or confidentiality agreements. Mandatory disclosure—even to auditors—could create legal, commercial, and competitive risks, especially when the handling, storage, and potential leakage of such documentation is not fully secured. 2. Imposition of an excessively detailed verification burden While it is reasonable for auditors to verify operational functionality and compliance with environmental performance standards, the demand for full end-to-end internal technical documentation goes beyond standard audit practices in many carbon methodologies (e.g., Verra, Gold Standard, and even ISO audit standards for carbon removal technologies). This level of detail risks overwhelming both developers and auditors, shifting the audit from an environmental and compliance review into a full technical engineering review—a different discipline altogether. 3. Confusion between outcome verification vs. design prescription The focus of carbon removal verification should be on verifiable operational outputs—such as biochar properties, emissions control, energy consumption—not on mandating how the technology must be engineered internally. If systems can demonstrably meet environmental, safety, and sequestration standards through performance monitoring and testing, the internal designs should not be the primary compliance focus. 4. Update burden for minor facility changes Requiring engineering drawings to be updated at every Output Audit for any major change creates a significant operational burden. In industrial operations, equipment changes happen regularly (e.g., replacement of conveyors, pumps, minor layout shifts). Requiring formal design document updates at each audit could slow operations and add unnecessary bureaucratic friction without improving carbon accounting accuracy.		

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				Suggestion: We recommend that Puro revise Rule 3.5.30 to: -Focus documentation requirements on system-level process flows (e.g., material flow diagrams, major system blocks) rather than requiring detailed internal engineering drawings; -Allow a summary-level technical package to be submitted initially, with deeper engineering detail only required if material risks or discrepancies are flagged during audits; -Protect intellectual property by allowing sensitive technical data to be shown only under strict auditor confidentiality protocols, or by allowing for redacted or summary documentation; -Limit mandatory document updates to significant process changes affecting carbon removal calculations, rather than requiring re-submission for minor operational adjustments. This would preserve audit rigor while protecting proprietary technology, reducing unnecessary administrative burden, and aligning the verification scope with Puro's mission of certifying real, measurable carbon removal rather than prescribing engineering practices.		
BCH	3.5	3.5.30	349	For retrofitted biomass power plants producing biochar, requiring detailed technical drawings and full system flowcharts could be burdensome, particularly if the retrofit involves limited modifications to existing infrastructure rather than a full new build. Existing plants may only have partial or legacy documentation for certain components, especially older biomass feed systems or emission controls, making complete end-to-end diagrams difficult without significant reengineering costs. We recommend clarifying that where existing systems are being retrofitted, updated documentation should focus only on the modified portions of the facility (e.g., reactor, char handling, emissions control) rather than requiring a full re-drawing of unchanged infrastructure. This ensures practicality without sacrificing quality assurance for the upgraded sections directly relevant to biochar production.	See reply to comment #286	Clarification
BCH	3.5	3.5.30.	480	Quote: "The CO2 Removal Supplier must provide engineering designs and technical specifications for the carbonization reactor and associated equipment installed at the Production Facility." Comment: Do the following edit: "The CO2 Removal Supplier must provide engineering designs and technical specifications for the carbonization reactor and associated equipment installed at the Production Facility. These elements shall be considered confidential and	This was of course implicit to the rule. Suggestion incorporated for clarity.	Clarification

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				shall not be published in public documentation" Rationale: Important to protect IP		
BCH	3.5	3.5.31	4	The text states that the energy efficiency shall be evaluated, please clarify if this includes: 1. Energy sent externally that is used as a valuable commodity (such as it generates revenue) 2. Energy that is sent externally and used but it generates no revenue	Technically, the mass and energy balance should be able to calculate any of them, if all flows are reported. The separate template and guidance will further specify this.	No change
BCH	3.5	3.5.32	125	In many cases, biochar from multiple reactors may flow into the same storage container or silo, so it can be impossible to determine individual reactor production amounted and product quality assessments on separated material since it's mixed as it is stored. This is one way for producers to optimize their production and cut down on three different storage lines. This requirement may cause additional investment in unnecessary equipment, and I'd recommend having a way to assess the gross amount of production quantity leaving a combined reactor system.	Thank you for your comment. The rule was deleted, as it is now part of the sampling plan, requiring representative samples across reactors, if there are several ones, whether co-located or not. See also reply to comment #511 below.	Major revision
BCH	3.5	3.5.5	511	3. Lab Testing Frequencies (Section 3.5.5) The revised methodology mandates third-party laboratory testing for each batch or, at a minimum, quarterly per production line. This represents a considerable increase in operational and financial burden for projects with smaller or remote production units. Recommendation: We encourage Puro.earth to consider: - Allowing representative sampling protocols where production conditions are uniform; - Introducing risk-based testing intervals based on historical consistency; - Permitting grouped testing under a validated QA/QC plan for similar production lines. These adaptations would maintain quality standards without compromising operational viability.	After careful consideration of a series of comments on biochar analysis frequency, we have re-written the rules relating to this topic, and are now suggesting two different sampling and analysis regimes, that are independent of production volumes and project configuration (number of reactors, co-location). The two regimes, one for stable and monitored production conditions, and one for other production conditions, place the focus on adequate sampling and use of composite samples sent for analysis. The revised rules are believed to adequately capture possible variability in biochar properties, which are an important aspect of CORC quantification, while remaining flexible and implementable in different project situations.	Major revision
BCH	3.5	3.5.33 Uniformity of treatment conditions during carbonization (page 40)	481	Quote: "[...] Although monitoring of carbonization temperature and residence time are highly recommended, they cannot be required for all technologies. This said, facilities equipped with continuous monitoring of carbonization conditions can reduce the frequency of laboratory analyses of biochar's properties." Comment: Do the following edits: "[...] Although As per rule 3.5.11, monitoring of carbonization process temperature and residence time are highly recommended, they cannot be is required for all technologies. For autothermal processes, ongoing monitoring of the actual carbonization temperature is mandatory. For all other technologies, the Issuing Body	See reply to comment #511 above.	Major revision

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				recognizes that it may be difficult to monitor carbonization temperature and therefore only mandates the ongoing monitoring of the post-combustion temperature. This said, facilities equipped with continuous monitoring of carbonization conditions can reduce the frequency of laboratory analyses of biochar's properties." Rationale: - There is no technical obstacle in monitoring the post-combustion temperature, regarless of the technology. Ongoing monitoring of this parameter should be mandatory as it is the easiest and most reliable way to prove process stability over time - These edits are aligned with changes made to 3.5.11.		
BCH	3.5	3.5.33.	482	Quote: "The CO2 Removal Supplier must sample and analyse biochar separately for each type of biochar produced, taking into consideration the differences in biomass feedstock type or blend, different operating conditions during carbonization (temperature, residence time), and any post-production treatment of biochar." Comment: Do the following edit: "The CO2 Removal Supplier must sample and perform elemental analysisanalyse of biochar samples separately for each type of biochar produced, taking into consideration the differences in biomass feedstock type or blend, different operating conditions during carbonization (temperature, residence time), and any post-production treatment of biochar." Rationale: For clarity	See reply to comment #511 above.	Major revision
BCH	3.5	3.5.34	73	A clear definition of "multiple days of production" needs to be given, define how many days.	See reply to comment #511 above.	Major revision
BCH	3.5	3.5.34	161	Biochar analysis and sample retention, section 3.5.34, for each biochar type produced, sample is collected and stored for further lab analysis. Sample must be archived with adequate labelling (production batches, feedstock, production conditions) for a minimum of two years. Question: Does it mean that every time a sample collected for a lab analysis (external lab), the same sample also collected for our reference filing for two years?	See reply to comment #511 above.	Major revision
BCH	3.5	3.5.34.	483	Quote: "For each biochar type produced (as defined in 3.5.33), the CO2 Removal Supplier must follow a biochar sampling plan that ensures a representative sample of biochar is collected and stored for further laboratory analyses. The sampling method shall be based on grab sampling over multiple days of production, spread evenly across the monitoring period. The sampling method shall include homogenisation by mixing prior to shipment of sub-samples for laboratory analyses. The	See reply to comment #511 above.	Major revision

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				sampling plan must also include retention and archiving of biochar samples, with adequate labelling information (production batches, feedstock, production conditions), for a minimum of two years." Comment: Do the following edits: "For each biochar type produced (as defined in 3.5.33), the CO2 Removal Supplier must follow a biochar sampling plan that ensures a representative sample of biochar is collected and stored for further laboratory analyses. The sampling method shall be based on grab sampling over multiple every 15 days of production, from biochar produced under normal production conditions, spread evenly across the monitoring period. The sampling method shall include homogenisation by mixing prior to shipment of sub-samples for laboratory analyses. The sampling plan must also include retention and archiving of biochar samples, with adequate labelling information (datetime of sampling, production batches, feedstock, production conditions), for a minimum of two years." Rationale: - Need to have frequent sampling to ensure representative quality. - The samples collected every 15 days should then be mixed with each other before being sent to the lab according to the frequency defined by rule 3.5.36		
BCH	3.5	3.5.35.	484	Quote: "During the site visit of an Output Audit, in case there are suspicions of inaccurate laboratory results, the auditor is allowed to request sampling of biochar to be performed during the visit, and sent for laboratory analyses, or re-analysis of archived biochar samples." Comment: Do the following edits: "During the site visit of an Output Audit, the CO2 Removal Supplier must provide the auditor with the detailed biochar sampling procedure (including homogeneisation) used at the facility and must demonstrate this procedure to the auditor on a batch chosen by the auditor. Further, in case there are suspicions of inaccurate laboratory results, the auditor is allowed to retain the demonstration request sampling of biochar sample to be performed during the visit, and sent send it for laboratory analyses, or re-analysis of. The auditor is also entitled to collect archived biochar samples for re-analysis." Rationale: - It is important to verify the actual way sampling is performed, as results can change significantly depending on the technique. - The auditor should be able to collect any sample for comparison with the results provided by the CO2 Removal Supplier	See reply to comment #511 above.	Major revision
BCH	3.5	3.5.36.	485	Quote: "For each biochar type produced (as defined in 3.5.33), the CO2 Removal Supplier must conduct	See reply to comment #511 above.	Major revision

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				third-party laboratory analyses of the biochar permanence properties and carbon content (see further specifications in section 6) at the following minimum frequencies: a. In case carbonization conditions are not continuously monitored: at least for every 1000 dry metric tonnes of biochar producer or at least 1 time per quarter, whichever applies first. b. In case carbonization conditions are continuously monitored, and are shown to be uniform (see rule 3.5.37): for every 5000 dry metric tonnes of biochar produced or at least 1 time per six-month period, whichever applies first. c. In case carbonization conditions are continuously monitored, but are shown to not be sufficiently uniform: the CO2 Removal Supplier must revert to the frequencies of sub-rule a; hence the importance of regular sampling and storage of samples at higher frequencies than laboratory analyses" Comment: Rewrite the rule as: "For each biochar type produced (as defined in 3.5.33), the CO2 Removal Supplier must conduct third-party laboratory analyses of the biochar permanence properties and carbon content (see further specifications in section 6) at the following minimum frequencies: a. In case carbonization conditions are not continuously monitored: at least for every 1000 dry metric tonnes of biochar producer or at least 1 time per quarter, whichever applies first. For continous processes proven to be uniform, i.e., meeting the criteria of rule 3.5.37., sampling is only required every 6 months. b. In case carbonization conditions are continuously monitored, and are shown to be uniform (see rule 3.5.37): for every 5000 dry metric tonnes of biochar produced or at least 1 time per six-month period, whichever applies first. For continuous processes not meeting the criteria of sub-rule a, as well as all batch and semi-continuous processes, samples should be re-taken and analyzed every time the temperature profile changes by more than ±10%. c. In case carbonization conditions are continuously monitored, but are shown to not be sufficiently uniform: the CO2 Removal Supplier must revert to the frequencies of sub-rule a; hence the importance of regular sampling and storage of samples at higher frequencies than laboratory analyses" Rationale: - No longer need to mention monitoring of carbonization conditions as this is already required in the new proposed wording of rule		

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				3.5.11 and further mentions in section 3.5. - Overall, need to have a more stringent rule for batch and semi-continuous processes as they are much more variable in terms of quality than continuous processes		
BCH	3.5	3.5.36	329	Regarding the frequency of laboratory analysis: This is relatively frequent testing, which can be difficult (and expensive) in countries that do not have laboratories that are able to run the tests needed to determine biochar quality. For example, based on our knowledge, there are no labs in Central America that can currently run tests for hydrogen, so these laboratories are unable to test for H:Corg. Sending outside of the country/region can become costly and unattainable on a quarterly or even a bi-annual basis. While we understand the need for determining accurate permanence properties and carbon content, we recommend following the IBI or EBC/WBC guidance which allows for annual testing as long as temperature and feedstock parameters stay within certain percentage ranges.	See reply to comment #511 above.	Major revision
BCH	3.5	3.5.37	74	a. This is stated too vague. Which temperature? Where is it measured? This needs to be normed and defined.	See reply to comment #511 above.	Major revision
BCH	3.5	3.5.37	350	It is unclear what exactly the “20% variability” refers to: is it variability in temperature, residence time, or both? If it concerns temperature, is it 20% of the target setpoint, 20% of the mean, or 20% of the full recorded range? Similarly, if applied to residence time, how is that variability to be calculated for continuous flows where exact tracking can be complex? We recommend clarifying the definition of "variability" (e.g., coefficient of variation, standard deviation relative to mean, or max-min range) and specifying whether it applies separately to temperature and/or residence time. Of course, considering the differences amongst facilities.	See reply to comment #511 above.	Major revision
BCH	3.5	3.5.37.c.	486	Quote: "Carbonization temperatures and residence times are uniform across the production period, for a given biochar type produced, with variability of less than 20%, excluding start-up and shut-down phases and anomalies in the sensor data." Comment: Do the following edit: "Carbonization temperatures and residence times are uniform across the past 12 months, i.e., production period, for a given biochar type produced, with these two indicators have variability of less than 20% versus the floating average of the past 12 months, excluding start-up and shut-down phases and anomalies in the sensor data." Rationale: - "production period" is not clear. We would suggest 12-month	See reply to comment #511 above.	Major revision

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				floating average, except for the first certification where it could be less than 12 months		
BCH	3.5	3.5.37b, p41	321	The proposed requirement for continuous 1-minute interval temperature monitoring across multiple sensors seems excessive and impractical for mobile carbonators. There are operational challenges in remote locations and challenging conditions including with connectivity to log data. Recording data at this frequency creates real data storage and management burdens. A longer recording interval (e.g., every 10–15 minutes) and consideration to less sensors, may be more appropriate for mobile units, combined with routine biochar laboratory testing. Consider operators demonstrating consistently high-quality output (e.g., low H/Corg ratios) to qualify for reduced monitoring.	See reply to comment #511 above.	Major revision
BCH	3.5	3.5.38.	487	Quote: "The CO2 Removal Supplier must keep records of biochar production batches, including at minimum the following information: a unique identifier, production date or range, feedstock type used, production conditions (targetted or measured), identifier of corresponding sample(s) sent for analyses, and dry mass of the batch. Beside this minimum identification information, additional information is necessary to comply with other rules in this methodology" Comment: Do the following edit: "[...] a unique identifier, production date or range, feedstock type used, production conditions (targetted or measured), identifier of corresponding sample(s) [...]" Rationale: Production conditions should always be measured (at least temperature, as per the edits proposed for rule 3.5.11	See reply to comment #511 above.	Major revision
BCH	3.5 & 3.6	3.5.39 & 3.6.1	424	Issue: Requiring granular bag-level batch tracking is impractical for large-scale continuous activated carbon manufacturing operations. The logistical complexity and cost of implementing such detailed tracking significantly outweigh potential verification benefits. Suggested Change: Amend tracking requirements to permit lot-level aggregation (e.g., production runs grouped by daily or shift-based intervals), each assigned a single aggregated batch identification number. This pragmatic adjustment provides accountability and traceability without undue administrative burden.	See reply to comment #511 above.	Major revision
BCH	3.5	3.5.39.	488	Quote: "The CO2 Removal Supplier must be able to link the biochar production records to: a. Upstream: a monitoring period or subset of a monitoring period during which the batch was produced, thereby enabling linkage with the amounts of eligible biomass used during the same period."	See reply to comment #511 above.	Major revision

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				Comment: "The CO2 Removal Supplier must be able to link the biochar production records to: a. Upstream: a monitoring period or subset of a monitoring period during which the batch was produced, thereby enabling linkage with the amounts of eligible biomass used during the same period." Rationale: "Linkage" is very vague and might not be technically feasible depending on what Puro expects. The requirements should be that 1) all biomass entering the facility is eligible and 2) the CO2 Removal Supplier can quantify how much biomass they consume. These requirements are already covered in other rules		
BCH	3.5	3.5.36-39	162	• Section 3.5.36, biochar must be tested at third-party lab analysis for the biochar permanence properties and carbon content. Frequency varies depending condition, but the fastest frequency is every 1,000 dry metric tonnes biochar produced or at least 1 time per quarter, whichever first. • Section 3.5.38, the supplier must keep records of biochar production batches, including at minimum the following information: a unique identified, production date or range, feedstock type, production conditions and other information necessary. • Section 3.5.39, the supplier must be able to link biochar production records between production and use. Cases involving single feedstock and uniform production conditions, a strict First In First Out (FIFO) can be used. In a more complex scenario where multiple feedstocks, varying production conditions and diverse end use, tracking can be implemented at the bag level using individual identification system. ----> Our case: Our usage method will be transporting biochar produced via bin + prime-mover to the estate to be applied. We use only one type of feedstock, Is it accepted? Or it should be packaged? Therefore, how to define production batch using continuous reactor. • Do we follow the feedstock batch for the product biochar batch? • Do we consider each bin delivered to estate as one batch? • Or maybe each production batch is defined whenever the system re-start?	See reply to comment #511 above.	Major revision
BCH	3.5	overall	510	2. Expanded Monitoring Requirements (Section 3.5) The draft significantly broadens the scope of monitoring, including requirements for tracking co-products, air pollutants, water usage, and occupational safety. While we support comprehensive environmental controls, the uniform application of these requirements across all facility types may present feasibility issues.	We agree that a flexible approach is needed and note that the current rules already provide for this in several instances. For example, air pollutant monitoring explicitly refers to compliance with national regulations and adapts to the size of the project. The current draft elaborates on existing rules by making explicit critical environmental and social safeguards, while maintaining	No change

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				Recommendation: We propose a tiered monitoring approach: - Full monitoring protocols for large-scale, high-emission facilities; - Simplified or risk-adjusted requirements for mobile or low-impact operations; - Acceptance of national regulatory frameworks when equivalent to Puro's standards. Such adjustments would promote inclusivity, particularly for producers operating in developing regions.	flexibility through the Monitoring Plan to tailor requirements to the scale, technology, and risk profile of the facility (e.g. when it comes to biomass sourcing monitoring and management of impurities). Other comments received in the consultation have addressed similar issues and lead to minor changes of certain related rules.	
BCH	3.5	p. 31	109	preferred handling of pyrolysis gases and tars. We note again that [NAME OF COMPANY] is intentionally designed to and does produce a clean cool syngas containing ppb oils/tars that is suitable for direct combustion that produces a clean flue gas.	Thank you for the information.	No change
BCH	3.5	all	146	As a verifier reviewing an offset methodology eligibility section, all elements are viewed as criteria to ensure the eligibility of the project. However, the eligibly section of this methodology is very detailed and prescriptive with some elements that may not be intended to determining the project's eligibility. For example, the 3.5.22 to 3.5.31. rule numbers are more related to safety on site. Are these meant to be strict criteria? If not, some elements could be added to an Appendix to help clarify what is and is not criteria to be verified.	Yes, safety on site is part of what needs to be verified. Compliance with all rules must be verified.	No change
BCH	3.5	3.5	526	It is recommended to remove the qualification of low-end equipment such as batch semi-continuous equipment, the product quality of this discontinuous system equipment is unstable and emissions are difficult to regulate, the site is difficult to control and solve the poor production environment pollutants. Low-end projects and no influence will lower the competitiveness of puro in the industry, and have a direct impact on other large projects on the later puro platform	Thank you for the comment. Puro's approach is technology agnostic. All technologies shall be able to meet the same performance requirements. Hence, batch and semi-continuous reactors are not excluded by default. We let biochar producers decide what is an optimal technology choice in their specific context.	No change
BCH	3.5	3.5	527	System standards for mobile and stationary continuous system equipment can be standardized, and it is suggested that reference can be made from the annual production of 1,000-30,000 tons of biochar.	It is unclear what "systems standards" means in this context. It is not deemed necessary to refer to explicit annual production capacity ranges.	No change
BCH	3.5	3.5	528	Raw material pretreatment requirements have been production and quality standards can be subdivided and quantified, for example, biomass can be divided into four categories: wood, husk, straw (grass), bamboo. According to different raw material characteristics to take different pretreatment process means. Mainly control the ash content of the treated raw material and the size of the size, in the raw material pretreatment process can be directly determined to ensure that the output of the same quality standards.	For sustainability of biomass, it is necessary to make additional distinctions. For biochar quality, the rules are agnostic of the feedstock type. The classification in four categories suggested by the commenter is too generic for use in certification.	No change

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BCH	3.5	3.5	529	Biomass gasification equipment is mainly energy-based biochar as a supplement, [Company Name] in pyrolysis and gasification respectively have many years of technology and engineering experience, gasification is mainly carbon gas cogeneration, the process will also get from the gas by-products (wood vinegar, tar) can be used for fine chemical use of about 25-30%. Fixed bed and fluidized bed can also be improved according to Puro's standard for biochar production and carbon production, and it is suggested that the annual production of biochar can be 500-5000 tons/year (biochar) as a quantity.	The comment does not include any suggestion of change to a rule, but details performance of gasification technology.	No change
BCH	3.5	3.5.3	530	We propose to push for the review of continuous carbonization equipment. Intermittent equipment will increase the carbon reduction due to the fact that the emissions (including start-up energy consumption) during the start-up and shut-down phases of the furnace cannot be well controlled. We feel that continuous carbonization equipment with the highest carbon reduction efficiency should be promot	Thank you for the comment. Puro's approach is technology agnostic. All technologies shall be able to meet the same performance requirements. Hence, batch and semi-continuous reactors are not excluded by default. We let biochar producers decide what is an optimal technology choice in their specific context.	No change
BCH	3.5	3.5.3	531	Since pyrolysis gas and tar are by-products of the carbonization process, and the energy of these two products accounts for a larger proportion of the chemical energy of the biomass feedstock entering the furnace in normal-speed pyrolysis, about 45-60%, and it is a waste to burn them only for pyrolysis in the carbonization furnace, we suggest that the system should be equipped with waste heat utilization equipments, such as boilers, turbines, and chiller units, to realize co-generation of cold, heat and electricity and to increase the efficiency of energy utilization. This kind of system can refer to one of our carbonization power generation project pipeline instrumentation flow chart and layout diagram, please check the attachment.	We agree that energy generation from carbonization co-products should be encouraged. Our rules have incentives to do so (e.g. emission allocation, SDG co-benefits) and in some cases require it (see section 8, for certain leakage situations). However, it cannot be required for all project types as of today, due to local context.	No change
BCH	3.5	3.5.3	532	We recommend that if the biochar producer does not have a need for tar wood vinegar liquid, the system should not be set up for condensation and all volatiles should be burned off. Because the mixture of tar and dust tends to clog the piping, resulting in shorter continuous operation time of the equipment, the system must be cleaned of tar and dust at regular intervals, resulting in more startups and shutdowns, which may result in unnecessary excess emissions of pollutants and greenhouse gases	We agree in principle; and we are diligent about the generation of tars and other liquid products.	No change
BCH	3.5	3.5.3	533	Regarding the control of flue gas pollutants, we suggest 1 charring furnace only use 1 professional pyrolysis gas burner and 1 combustion chamber, so that the operation is simple, the source of pollution is reduced, it is convenient to monitor the temperature of the furnace	Puro.earth cannot mandate the use of technology design only; instead, rules set performance requirements, which must be met by any technology.	No change

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				chamber and the combustion situation, which is conducive to the control of flue gas pollutant emission. Generally speaking, for the same kind of raw material with similar moisture content, the pyrolysis gas output produced by the carbonization furnace is stable, which can minimize the pollutant emission through the professional burner combustion		
BCH	3.5	3.5.3	534	Since the biochar production process generates flammable and explosive pyrolysis gases, regarding the audit of the safety of the combustion system, we suggest to limit the values according to the technical rules of special equipment, such as China's TSG-ZB001-2008 Safety Technical Rules for Fuel Oil (Gas) Burners, GB/T 36699-2018 Technical Conditions for Liquid and Gas Fuel Burners for Boilers. Or similar standards in other regions	The specific standards have not been added; but other rules have been added, e.g. regarding the risk of carbon monoxide exposure (as per other comments). Many facilities are automatically subject to the standards mentioned (or equivalent) via the local regulation.	Minor adjustment
BCH	3.5	3.5.3	535	It is on the basis of Article 5 that we recommend that the system must be equipped with a diffusion combustion system with a long open flame, and that the diffusion burner must be a specialized pyrolysis gas burner to fully combust to reduce emissions. This is used in the event of a main combustion chamber flameout (true flameout or fire check failure). In case of flame out, the pyrolysis gas must be quickly cut into the diffusion combustion system for combustion, and then re-ignited after the main combustion chamber has been purged and the flame detector fault has been repai	Puro.earth cannot mandate the use of technology design only; instead, rules set performance requirements, which must be met by any technology.	No change
BCH	3.5	3.5.8 to 3.5.15	536	[Company Name] focuses on energy development and utilization, providing customers with integrated green energy such as cooling, heating, electricity and other cogeneration based on the excess waste heat of the project. [Company Name] suggests Puro to encourage the development of green biochar cogeneration energy projects to reduce greenhouse gas emissions, and at the same time, create more green energy for the project to reduce energy consumption	We agree that energy generation from carbonization co-products should be encouraged. Our rules have incentives to do so (e.g. emission allocation, SDG co-benefits) and in some cases require it (see section 8, for certain leakage situations). However, it cannot be required for all project types as of today, due to local context.	No change
BCH	3.5	3.5.8 to 3.5.15	537	[Company Name] suggests that the biochar project can initially advocate the scale, only the scale of the project can control the quality of the project at the same time. Energy-based biochar projects can only promote the industrialization and modernization of the project and make Puro more competitive and representative in the international market. At present, we know that most of the developers of biochar projects in the world are small-scale biochar producers, and small projects are more difficult to supervise and do not have industrialized production facilities, which is still a long way from the installation of stable production facilities proposed by Puro, so [Company Name] suggests that the	Puro.earth cannot mandate or impose a minimum project size nor set a scaling up and industrialization requirement.	No change

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				project must have the prerequisite requirements of scaling up and industrialization		
BCH	3.5	3.5.8 to 3.5.15	538	Improved pyrolysis energy utilization The [Company Name] pyrolysis system maximizes energy use by converting syngas into energy (cooling, heating and electricity), making the project more feasible and risk-resistant, with a longer project life cycle, a higher degree of activity of the enterprise, and a higher standard of industrialization of the project along with the energyization. It is recommended that Puro encourages and focuses on the promotion of biochar energy projects, so that the benefits and life cycle of biochar enterprises will be longer and longer, and in line with the goal of sustainable development of green energy enterprise	We agree that energy generation from carbonization co-products should be encouraged. Our rules have incentives to do so (e.g. emission allocation, SDG co-benefits) and in some cases require it (see section 8, for certain leakage situations). However, it cannot be required for all project types as of today, due to local context.	No change
BCH	3.6	p42	319	Request clearer guidance and standardised templates for documenting land application of biochar (e.g., agriculture, horticulture, landscaping). Without templates, the administrative burden could limit adoption, especially in decentralised and smallholder contexts.	Thank you. Puro.earth intends to continue providing further guidance and templates, alongside the methodology, to facilitate audit preparation.	No change
BCH	3.6	3.6	521	Overprotective Biochar End-Use Allowances a. Approved End-Uses List: Embedding the list directly into the Methodology is inflexible, as end-use applications are rapidly evolving. Suggests adopting a separate, dynamic list (e.g., Climate Action Reserve's model) to avoid lengthy update processes. b. MSW Incineration Assumption: The Methodology disallows end-uses R1 (Retail to Individuals), R2, R3, and IMF2 (e.g., paints, plastics, batteries) due to perceived incineration risks. This is misguided in North America, where MSW incineration is rare (~12% in the U.S.) and concentrated in the Northeast. New facilities are unlikely due to regulatory and economic barriers. c. Below-Ground Storage: Not permitted despite negligible risk of future combustion, which would require societal collapse to materialize. d. Biochar-Amended Fertilizers: Not explicitly listed in Table 3.2, though they are a growing and economically viable agricultural input globally. Recommendation: 1. Remove blanket bans on R1, R2, R3, and IMF2 in regions with low incineration rates. 2. Allow below-ground storage as a valid end-use. 3. Explicitly add biochar-amended fertilizers to Table 3.2.	See reply to comment #307, for aspect relating to retail to individuals. Biochar fertilizers are now explicitly mentioned in Table 3.2; it was implicitly included in Agriculture & Forestry sectors, but can also fit into R3 when distributed to consumers. Below-ground storage (GEO2), reversible, is now allowed, but not eligible for CORCs at the moment.	Major revision

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BCH	3,6	3.6	522	Material and Analysis Standards European Bias in Standards: a. Table 3.3 mandates WBC-Agro contaminant limits (PAHs, PCBs, PCDD/Fs, heavy metals) based on stringent European regulations, which exceed U.S. standards. b. Heavy metal limits include essential nutrients, potentially restricting beneficial agricultural uses. c. PAH Analysis Method (DIN 17503): Requires a modified German method (tolouol instead of toluene) that is: Not standardized globally. Rarely used outside Germany. Unavailable in U.S. labs, which rely on EPA methods. No evidence that PAHs extractable only via toluol are environmentally risky. Regulatory Misalignment: U.S. agencies reject non-EPA methods for compliance. Recommendation: 1. Reference EPA methods or the upcoming ANSI standard (combining ISO/EPA) for North American applicability. 2. Allow deference to local regulations where they exist.	Recommendation #1 is already possible as per the suggested rule, but was further clarified. Recommendation #2 is already possible as per the suggested rule.	Minor adjustment
BCH	3.6	p. 42, last paragraph before section 3.6.1	186	In paragraph starting with "Biochar applications are grouped in three categories". Could insetting be mentioned among them? Also, using the term "biochar"to refer to biocoal or biocarbon/metchar is confusing. Biocoal is pyrogenic biocarbon that replaces fossil fuel. Biocarbon/metchar is pyrogenic biocarbon that replaces fossil carbon as a carbon source in an industrial process. To me, the second option, would not be oxidative applications, but the use of biochar as, for example, soil amendment, where the additionality condition is not met (e.g., financial additionality). Overall, the whole paragraph needs rewriting and examples should be provided.	See reply to comment #193 (from same commenter, regarding insetting). See reply to other comments re: use of biochar term in an agnostic manner here for simplicity of rule writing.	No change
BCH	3.6	3.6.1	76	What is the definition of a "batch"? This needs to be defined clearly.	The biochar use batches was further specified in 3.6.1: in practice, the precise definition depends on the specifics of the distribution chain, and Puro.earth remains flexible to accommodate for different type of systems.	Minor adjustment
BCH	3.6	3.6.1 & 3.6.8	420	Issue: The requirement to trace biochar products precisely to the final user—including exact location, date, and detailed use-case specifics—poses significant conflicts with confidentiality obligations and intellectual property rights common within the activated carbon industry. Distributors and end-users typically regard such granular data as	See reply to comment #49.	No change

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				proprietary competitive intelligence, protected by strict contractual non-disclosure agreements (NDAs). Suggested Change: Amend the rules to explicitly allow compliance verification via third-party auditors using anonymized or aggregated end-use data. This should include generalized information such as sector-specific usage and broader geographic regions, rather than detailed specifics, thereby maintaining confidentiality while achieving the intended traceability goals.		
BCH	3.6	3.6.1 & 3.6.8 (Additional)	421	Issue: Karbontürk's direct visibility within the activated carbon supply chain is limited strictly to immediate suppliers (n-1) and immediate customers (n+1). We have no feasible method or right to collect or verify detailed data beyond these direct transactions. Suggested Change: Clearly limit compliance verification and data-gathering responsibilities to immediate suppliers and immediate customers only (n-1 and n+1 steps). All compliance confirmations must be based solely on anonymized or aggregated data from these direct transactional parties, independently verified by accredited or Puro-approved third-party auditors.	See reply to comment #49.	No change
BCH	3.6	3.6.2	77	Eligible and non-eligible applications pose a risk, a VVB is not always present and if other use-cases exist, fraud is much more likely to happen. This is a big concern.	Thank you for the feedback. Biochar use documentation and traceability requirements are designed to address diversion risks, further re-inforced by regular verifications. Requiring 100% eligible use without enforceable checks would not, on its own, address the risks either.	No change
BCH	3.6	3.6.4.a	78	a. What happens if a case of "diversion from intended use" occurs? A clear sanction or statement needs to be given for such cases.	This is tackled by rule 4.2.3 and applies to any situation, including the one mentioned by the commenter. The CO2 Removal Supplier is responsible to fully compensate for the reversal as defined clause 6.7.4 in Puro Standard General Rules.	No change
BCH	3.6	3.6.4, 3.6.5.a, 3.6.8	49	Large-scale biochar operations often rely on B2B business models involving intermediary companies across the value chain. However, the draft methodology appears to require the CO_2 Removal Supplier to collect and verify data and evidence from all parties involved, including those outside the project boundary. Given that intermediaries are typically not under the direct control of the project developer and may not be contractually obligated to provide data, this requirement may prove unrealistic in many operational contexts. This could potentially divert carbon finance away from the actual mitigation activity and reduce the effectiveness of the mechanism. Could	Biochar use throughout a supply chain is part of the project boundary, up to the point of creation of the CORC (see section 2). To a certain level, monitoring throughout distribution is necessary to ensure actual use. Depending on the case, different solutions are possible but it is difficult to imagine a situation where such use data would not be collected without significantly hampering the credibility of the standard. B2B arrangements need to be made in a manner that aligns with the rules, enabling to collect necessary data for verifications. Note that the level of detail in the documentation required varies with the level of risk in the	No change

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				Puro.earth clarify how such expectations can be reconciled with the nature of commercial B2B arrangements? Would Puro.earth consider adopting conservative, standardized assumptions or proxy approaches for such cases, rather than requiring full traceability and evidence from intermediaries beyond the project boundary?	application. Already today, biochar producers who work with intermediaries have agreements in place with their partners, and some even use digital systems to collect information from intermediaries.	
BCH	3.6	3.6.5 p. 44	79	Biochar delivered in pure form: How is reversal risk handled? How is loss to fire handled? This information is missing.	This is specified in the following rules and in Table 3.2, or otherwise explained in section 4.	No change
BCH	3.6	3.6.5. p44 Remark	80	Remark on Biochar delivery: How is timely delivery of biochar ensured? What is the definition of "cannot be immediately applied"? 1 Week, 1 month, 1 crop rotation, 1 year? This needs to be clearly defined here and a maximum timefrime needs to be given.	This part of the text is simple recommendations and not normative text. A maximum timeframe is not deemed necessary.	No change
BCH	3.6	p. 44, section 3.6.4	187	Line 5 in first paragraph after "biochar delivered for use in pure form". Here it refers to "charcoal for energy", which is a more correct use of referring to it than using the term "biochar"as used before. No change is needed here. Just a reflection in previous inconsistency when using the term "biochar" (in page 42) even if the final use is its immediate oxidation.	We agree that "biochar" should ideally refer to material intended for carbon storage, and recognize that "charcoal" is more commonly used for energy applications. However, this document uses “biochar” as a neutral shorthand for the carbonized material prior to its final application, to ensure consistency across rules. The term “charcoal” is also limited to wood-based inputs, while many projects use other biomass types.	No change
BCH	3.6	3.6.4.a.i.	489	Quote: "Biochar is delivered to users in pure form. In this case, diversion risks are generally higher. Hence, the required proof of end-use must comply with rule 3.6.5." Comment: Do the following edit: "Biochar is delivered to users in pure form, i.e., with no other product added to the biochar after it has been produced, except water. In this case, diversion risks are generally higher. Hence, the required proof of end-use must comply with rule 3.6.5." Rationale: "Pure" is too vague: most biochars come with a certain humidity level which could be considered a non-pure product	The suggestion was incorporated.	Clarification
BCH	3.6	3.6.5	288	Specific Feedback: Rule 3.6.5 – Evidence of Biochar End-Use and Timing of Delivery for Agronomic Applications Rule 3.6.5 requires the CO_2 Removal Supplier to collect extensive evidence to confirm that pure-form biochar delivered to users is not diverted from its intended purpose (e.g., soil application). The rule specifies documentation requirements (delivery receipts, user attestations, batch traceability, and optional risk-mitigation steps) and explicitly states that post-application soil measurements are currently not reliable enough to be mandated. Additionally, the remark on biochar delivery for agronomic use advises that biochar should not be delivered to farms outside of immediate	We agree that flexibility is critical and confirm that this remark is a non-normative recommendation, not a requirement. The remark box was edited to clarify this.	Clarification

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				application windows, citing increased risks of fire, mishandling, or reversals. Key Concerns: 1. Impact on flexibility and practicality of biochar sales The remark suggesting that timely delivery must be closely aligned with immediate soil application could create major constraints on biochar sales logistics. In practice: -Biochar users, particularly farmers, may prefer to receive shipments in bulk during offseason periods when storage and field operations are easiest to manage logistically. -Agricultural operations are inherently seasonally unpredictable, subject to weather changes, planting schedules, labor availability, and other variables that affect actual field application timing. -Enforcing "immediate use" could limit the commercial viability of biochar projects, reduce customer flexibility, and discourage wider adoption. 2. Additional burden on CO_2 Removal Suppliers without strong technical justification While it is true that long-term stockpiling can create reversal risks (e.g., fire hazards), the remark does not offer clear technical thresholds (e.g., how long is “too long”?) or guidance on acceptable risk management practices (e.g., secure storage, fire prevention measures). Without clear and practical risk criteria, the remark introduces ambiguity into the methodology and could open disputes during audits about what constitutes "acceptable" storage and delivery practices. 3. Overemphasis on immediate control rather than outcome assurance Given that robust traceability records (under 3.6.5 a and b) are already required, and that biochar is generally stable under normal dry storage, it seems excessively cautious to add soft mandates about delivery timing without allowing for reasonable, documented exceptions. Suggestion: We recommend that Puro: -Clarify that immediate application upon delivery is preferred but not		

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				mandatory, provided that proper storage and risk mitigation measures are in place; -Allow developers to demonstrate safe storage practices (e.g., fire prevention protocols, moisture control) as an acceptable form of risk mitigation, without penalizing normal agricultural storage patterns; -Explicitly recognize that biochar delivery timing must accommodate agricultural and operational realities, and that flexibility is critical for scalability. Preserving flexibility in delivery schedules would support broader market uptake, operational efficiency, and continued risk management integrity without creating unnecessary barriers.		
BCH	3.6	3.6.1	287	Specific Feedback: Rule 3.6.1 – Records of Biochar Use and "Date of End-Use" Tracking Rule 3.6.1 requires the CO_2 Removal Supplier to maintain records for each biochar batch, including a unique identifier, type of end-use, dry mass, production link, biochar properties, and notably, the date of end-use. Key Concerns: 1. Tracking "date of end-use" is operationally impractical for many market models The concept of "date of end-use" assumes that the project developer or producer has visibility into the downstream handling of the biochar after sale or transfer. However, in real-world operations, particularly in bulk sales, intermediate distribution, or agricultural use cases, the developer may lose direct control or visibility once the biochar leaves the facility. For example: -Biochar may be sold to resellers or distributors who store it for variable periods before it is finally applied. -In construction, biochar may be stockpiled before being incorporated into concrete mixes or soil applications. -In farming, biochar application could depend on seasonal cycles, meaning long delays and unpredictable end-use timing. Thus, enforcing precise tracking of the “date of end-use” is highly impractical, and in some cases, impossible without imposing new contractual obligations on buyers that could deter market adoption.	The comment was considered, alongside other comments, and the rules have been adjusted to reflect some of the suggestions made. In rule 3.6.5, we reduced the burden of proof, for biochar used in pure form, to evidence of delivery, in the absence of diversion risks, rather than systematic requirement of signed attestation from users with a date of use. Similar adjustments have been made, for consistency, for biochar mixed in products.	Major revision

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				2. Risk of burden shifting and limiting project scalability Imposing a compliance requirement that relies on customer behavior tracking (after the point of sale) would place an unreasonable burden on suppliers, especially for projects aiming to scale biochar deployment across multiple industries and regions. This could slow market growth, discourage certain customer segments from purchasing certified biochar, and increase transaction complexity disproportionately to the environmental integrity gain. Suggestion: We recommend that Puro revise Rule 3.6.1 to: 1. Focus on records available at the point of sale or transfer, such as the intended end-use declaration by the purchaser, linked to a sale or shipment date; 2. Allow the “date of end-use” to be estimated or bounded (e.g., based on contractual use expectations or declarations by the buyer); 3. Recognize that in some cases, only "date of sale or delivery" can be reliably recorded, with downstream declarations gathered optionally where possible. This would strike a more practical balance between ensuring traceability and supporting scalable market operations without introducing unrealistic compliance burdens.		
BCH	3.6	3.6.5.	490	Quote: "[...] The evidence shall be made of: a. Evidence of delivery to the user and signed attestation of use from the user (can be one or several documents or digital traceability tools), with at minimum explicit mentions of location of use, amounts used, identifier of batches used, type of use, date of use, and date of delivery. b. Evidence of no risk of diversion from intended purpose, which can be a combination of the following options: i. Evidence that charcoal use for energy is not prevalent in the country of biochar use. ii. Evidence that biochar, although pure, has been processed in a way that reduces the risk of diversion, either at the production site or at the user location, e.g. grinding to fine powder and mixing with water to moisture content above 50%. iii. Photographic evidence of the use (e.g. incorporation to soil), including timestamp and georeference, and identification of the biochar batches used. iv. Other forms of evidence, to be approved by the Issuing Body"	The suggested schematic was not included, but a similar approach was put forward. Namely, the option to demonstrate low diversion risk when mixed with water was changed to include both grinding to a fine powder and mixing with water to above 50% content.	Major revision

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				Comment: Do the following edits: "[...] The evidence shall be made of: a. Signed attestation that the biochar has been delivered Evidence of delivery to the user and signed attestation of use from the user (can be one or several documents or digital traceability tools), . If delivery is done to an end user, signature can be from either the end user themselve or the transporter; in all other cases attestations must be signed by the user. with Attestations must contain, at minimum, explicit mentions of location of use, amounts used, identifier of batches used, type of use, date of use, and date of delivery. b. Evidence of no risk of diversion from intended purpose, which can be one or a combination of the following options: i. Evidence that charcoal use for energy is not prevalent in the country of biochar use. ii. Evidence that biochar, although pure, has been processed in a way that reduces the risk of diversion, in accordance with the schematic below (figure ###)either at the production site or at the user location, e.g. grinding to fine powder and mixing with water to moisture content above 50%. iii. Photographic evidence of the use (e.g. incorporation to soil), including timestamp and georeference, and identification of the biochar batches used. iv. Other forms of evidence, to be approved by the Issuing Body" Rationale: - It may not always be possible to get the signature of the user themself when delivering the product (e.g., it can happen that farmers are not present at their farm when the product is delivered). In this case, if the user is then end user, [company name] believes it is reasonable to have the transporter sign an attestation of delivery. Compliance with sub-rule b. is still expected. - adding "one or" for the avoidance of doubt - proposing a schematic with more detailed cases to better manage risk of reversal (see vignette below, attached in high-resolution in the feedback e-mail). To ensure quenching has happened, we might need to require a fixed/permanent quenching system, to be checked during the Output Audit		
BCH	3.6	3.6.5a, 3.6.8	112	There are potential practical issues in expecting farmers to report back to the seller with information such as the date of biochar use, amount used and batch number. Combine this with variable IT capabilities, no incentive for farmers to fulfill on this paperwork, and intermediatories in the middle, then the challenge is even greater. The requirements must be	See reply to comment #287. In rule 3.6.5, we reduced the burden of proof, for biochar used in pure form, to evidence of delivery, in the absence of diversion risks, rather than systematic requirement of signed attestation from users with a date of use.	Major revision

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				fit for carbon accounting, understandably, but also, they must be practical for these businesses to carry out. What practical suggestions does Puro.Earth have for getting farmers to submit this information when they apply biochar to their fields?	Similar adjustments have been made, for consistency, for biochar mixed in products.	
BCH	3.6	3.6.8 p.45	258	Traceability : for large production plants, use of intermediaries such as distributors to final end-users will be a daily business. Having a procedure between producer and distributors making safe and sure the handling and final use of the biochar regarding carbon removal requirement is mandatory. Having an "agreement in-place to collect the necessary traceability information" can become just irrealistic and generate confidentiality infringment depending the level of details and the nature of the collected information. The standard has to be more realistic and precise regarding this issue otherwise it will be counterproductive with the scaling up objective that biochar industry has to face.	Biochar use throughout a supply chain is part of the project boundary, up to the point of creation of the CORC (see section 2). To a certain level, monitoring throughout distribution is necessary to ensure actual use. Depending on the case, different solutions are possible but it is difficult to imagine a situation where such use data would not be collected without significantly hampering the credibility of the standard. B2B arrangements need to be made in a manner that aligns with the rules, enabling to collect necessary data for verifications. Note that the level of detail in the documentation required varies with the level of risk in the application. Already today, biochar producers who work with intermediaries have agreements in place with their partners, and some even use digital systems to collect information from intermediaries.	No change
BCH	3.6	3.6.8.	234	Supplier cannot monitor the end use of the biochar in case of intermediaries due to juridical and competition aspects. It is not possible to oblige the intermediare to e.g. reveal if and how much it has bought biochar from another supplier nor how much and when it has sold biochar to which end uses. The following senteces shall be changed / removed, p. 45:"---monitoring of the end-use must continue until it reaches the actual user of the biochar or biochar-containing product. Hence, the CO2 Removal Supplier must have procedures and agreements in-place with its intermediaries to collect the necessary traceability information. Further, whenever the intermediaries are also manufacturing biochar products, mixing different sources of biochar, or even altering the properties of the biochar (e.g. chemical or thermal treatment), those possible actions must be clearly described and reported to the CO2 Removal Supplier, as per the procedure and agreements above-mentioned. " This obligation is unreasonable and excessive; it is impossible to obligate the intermediare to report the traceability information to the CO2 supplier. Suggestion: the CO2 supplier must have procedures and agreements in place with its intermediaries, in which the intermediaries guarantee the eligible use of the biochar / agrees on selling the biochar produced by the CO2 supplier only to the eligible end use cases.	Biochar use throughout a supply chain is part of the project boundary, up to the point of creation of the CORC (see section 2). To a certain level, monitoring throughout distribution is necessary to ensure actual use. Depending on the case, different solutions are possible but it is difficult to imagine a situation where such use data would not be collected without significantly hampering the credibility of the standard. B2B arrangements need to be made in a manner that aligns with the rules, enabling to collect necessary data for verifications. Note that the level of detail in the documentation required varies with the level of risk in the application. Already today, biochar producers who work with intermediaries have agreements in place with their partners, and some even use digital systems to collect information from intermediaries.	No change

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BCH	3.6	3.6.8	437	Make clear allowance and template documentation for public or municipal intermediaries (e.g. cities that store or distribute biochar) to act as traceable qualified agents of end-use. "-Municipal composting or sustainability depts may distribute biochar on behalf of suppliers -Allowing them to be treated similarly to other intermediaries with traceability ensure viable urban programs are not excluded"	A definition of "user" was added to rule 3.6.4.	Major revision
BCH	3.6	3.6.6	82	c. User needs to be defined here.	A definition of "user" was added to rule 3.6.4 as well as further specifications made in Table 3.2 for retail.	Major revision
BCH	3.6	3.6.6	81	a. Who is going to check this/track this? i.e. biochar is mixed with manure, the supplier states it is a 50:50 mix, but in reality he only mixes in 25% biochar, he can now sell the mix with "2x more" biochar content and use more biochar for allowed non-eligible use cases. Again, the allowed non-eligible applications poses great risk for fraud.	Amended: The third-party auditor is allowed to request a visit to the mixing or application sites and request samples to be sent for laboratory analyses.	Minor adjustment
BCH	3.6	3.6.6.a.	491	Quote: "The biochar content of the product is below 50% (v/v) on a volume basis." Comment: "The biochar content of the product is below 50% (m/m) on a mass basis." Rationale: Mass is usually easier and more reliable to monitor than volume	Thank you for the comment. Whether mass or volume is easier to monitor often depends on the context—many product manufacturers typically work with volume-based formulations, particularly when blending soil amendments. Moreover, the risks considered here are more closely linked to volume share than mass share, as the latter also depends on the densities of the co-products. That said, there is a direct relationship between volume and mass through the bulk densities of the components; depending on the product and its constituents, a CO_2 Removal Supplier can calculate a corresponding mass-based threshold if needed.	No change
BCH	3.6	3.6.7	225	Evidence for Cascade Use and Composting We suggest that the methodology provide explicit examples of acceptable evidence to demonstrate the cascade use of biochar, particularly in applications such as animal feed and composting. Justification: Clear guidance on the types of documentation required would assist project developers in effectively demonstrating compliance. Examples of acceptable evidence could include: • Sales invoices indicating the intended agricultural or animal feed use • Photographic documentation of biochar application • Contracts or agreements with end-users specifying the use of biochar • Records of transportation and delivery to end-use sites	This is application specific and is covered in Table 3.2. The example given by the commenter refer to proof of use but do not address the cascading risks.	No change
BCH	3.6	3.6.8	126	It says that intermediaries must report their actions to the CO2 Removal Supplier, but it does not say if those activities (and associated emissions)	Thank you for your comment. we have incorporated more detail on the accounting of GHG emissions until the point of end-use, and	Minor adjustment

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				need to be accounted for within the project boundaries of the Puro biochar project.	made reference to the relevant account rules in section 7.3 of this methodology.	
BCH	3.6	p42 3.6.3	266	The final sentence of the introduction should clarify 'expressly forbidden' - Does this mean a producer who is found to have utilised this end-use would not be able to issue any credits?	A clarification statement was added to rule 3.6.2 regarding potential suspension of a Production Facility in this context.	Minor adjustment
BCH	3.6	table 3.2.	152	We advocate for adopting the stricter EBC categories in this context to ensure only high-quality biochar qualifies for CORC generation.	While we believe both lists have similar coverage in scope; there are also important differences in the approach and implications e.g. on demonstration of the use and the low risks of reversals.	No change
BCH	3.6	Table 3.2.	492	Quote: Last column title: "Environmental Quality Level" Comment: Do the following edit: "Minimum Environmental Quality Level to be Met" Rationale: Avoidance of doubt	The word "minimum" was added. The avoidance of doubt is ensured by rules that follow 3.6.9 and beyond.	Clarification
BCH	3.6	AF1	83	Table 3.2: AF1, incorporation into the topsoil needs to be defined here, i.e. how deep at minimum? Just incorporation into the topsoil is too vague.	Topsoil usually refers to a soil's top layer, typically the first 15 to 30 cm. It is not deemed necessary to add a clarification, as most incorporation technique are expected to achieve this.	No change
BCH	3.6	GEO, EM Table 3.2	331	Various times in Table 3.2 "authorized by competent authorities" is mentioned. Similar to an above comment, it is unclear on what "authorized" means. Does the operation need to be permitted? For example, for GEO1: if there is not a local environmental requirement for defining the environmental quality of the biochar, and there are not monitoring mandates, does that automatically exclude this end use?	We remain flexible regarding the type of authorization: e.g. an authorisation letter could be deemed sufficient. Yes, the lack of authorisation or specification by the authorities of environmental requirements will likely render the application ineligible.	No change
BCH	Table 3.2	AH2 Table 3.2, p. 48	188	Category AH2. In second to last column, shouldn't it say "Similar to "Additive to manure in on-farm storages"?	Indeed. The repetition of the same text is now avoided.	Clarification
BCH	Table 3.2	IMF3 Table 3.2, p. 53	191	Category IMF3 - This material should not be named biochar as it generates confusion.	We edited this row of the table to refer to "char output" instead of "biochar" output.	Clarification
BCH	Table 3.2	EM2 Table 3.2, p. 49	189	Category EM2. Unless used to restore the cover land of the quarry, the use of biochar in quarry restoration somehow contradicts the circularity objective of the EU. Yet it now aligns with the CRCF, in which this use seems to be acceptable. If used in quarry restoration (as below-ground storage - not just for the land cover), an in-depth study carried out by mining engineers is needed, with the report then being approved by the local authorities. Key aspects to keep in mind are the stability of the banks, slopes, adequate drainage and runoff during an intense rainfall, etc. A maximum ratio of biochar in the mix should be established. Also, if burial is allowed, we would recommend a limit in the amount of ash in the biochar being buried (to minimise the burial of nutrients).	We clarified (as for GEO3) the authorisation by competent authorities may also required adequate engineering studies. Further, a maximum biochar content of 50% v/v is defined, as for other product mixing. Here we note regarding the circularity concerns that this use case can still be seen as productive or valuable, due to the rehabilitation aspect - as opposed to storage without additional benefits. See reply to comment #192 and #190.	Clarification
BCH	Table 3.2	BE3+4 Table 3.2,p. 50	190	BE class. Same comment as above for EM2 with regards the ash content. If the nutrient content of the biochar is high, perhaps its use as building material should be reconsidered.	We agree with the commenter that nutrient-rich biochars are most beneficial for use in agronomic applications and may not be suited for material applications; however, these considerations	No change?

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					and choices are mostly left to the biochar producers. Note that the revised section 8 includes a leakage source for processing nutrient-rich feedstocks into biochar, and that in certain cases (e.g. manure, sewage) the rules can require the agronomic use of the biochar to prevent or mitigate nutrient diversions.	
BCH	Table 3.2	GEO Table 3.2, p. 54	192	GEO class. This option, particularly GEO3 somehow contradicts the circularity objective of the EU. Yet it now aligns with the biochar methodology of the CRCF in which this final use seems to be acceptable. This opens a pandora box. For example, if used in mine restoration (as an ingredient to fill the mine - not just for the land cover), an in-depth study by a mining engineering firm might be needed and then the report would need to be approved by competent authorities. Also, if burial is allowed, we would recommend a limit in the amount of ash in the biochar to minimise the burial of nutrients.	We agree with the commenter that such applications, although envisioned by certain actors, can appear contradictory with circularity objectives. We agree that certain types of mine restoration may require authorisation and this is foreseen by the current rules for GEO3 and GEO1. Explicit mention to engineering studies was added to GEO3. Regarding burial of nutrients, please see reply to comment #190.	Clarification
BCH	3.6	GEO1	84	Table 3.2: GEO1: "require some form of monitoring of the injectoin site" the terminology of some form of is very vague and needs to be clearly defined here.	We clarified to "environmental" monitoring.	Clarification
BCH	Table 3.2	GEO2 Table 3.2, p 54	263	GE02 limits projects who might be exploring biochar burial (similar to biomass burial) activities for carbon storage - It is unclear why this is expressly forbidden when combustion is not, and similar risks exist for retail sales. Suggestion to allow this activity, but it not be eligible for credits.	The use category GEO2 was changed to Not eligible for CORCs, but allowed use. Conditions similar to GEO1 and GEO3 were added (authorisation).	Minor adjustment
BCH	Table 3.2.	Table 3.2, GEO2, GEO3	303	Allow burrial of biochar in pure form, make it difficult to access, but not to be inertised by mixing. Establish long term burrial site monitoring and ensure non-excavation through permitting process. Reason: in remote case CDR becomes a Gton level industry globally, cupled with diminishing and/or non-use of fossil fuels in the future, burried biochar could possibly be used as biogenic carbon fuel to be used in case of over-reaching global CDR operations, where the CDR industry causes the atmospheric CO2 levels not only to be reversed, but also to go into even more dangerous territory of too little atmospheric CO2 concetration < 280 ppm.	Thank you for the suggestions. At this stage, we have decided not to allow this use case. However, if the scenario described by the commenter materializes in the future, the rules can be adapted accordingly.	No change
BCH	3.6, 4.2	IMF1 p.45 - 3.6.6, Table 3.2 - IMF1 p.64 - Table 4.1	46	In cases where activated biochar is used in water filtration and subsequently reactivated (e.g., through thermal or steam reactivation), would Puro.earth consider allowing a conservative quantification of carbon losses during each reactivation cycle (as 'Closs'), rather than treating reactivation as a full reversal of stored carbon?	Thank you for the suggestion. At this time, we do not have sufficient data to assess carbon retention across reactivation cycles and will remain conservative in our approach. Net-negativity of the full supply chain must be demonstrated, and default ex-ante deductions are unlikely to be accepted without strong supporting evidence.	No change

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				Specifically: - Can the remaining stable carbon post-reactivation be considered as durable storage, assuming sufficient evidence (e.g., mass balance, carbon retention tests) is provided? - Would Puro.earth consider allowing projects to apply a default conservative factor for carbon loss per reactivation (e.g., 40–60% loss), subject to verification and appropriate uncertainty treatment? This approach could enable crediting for durable carbon still present after reactivation, while transparently accounting for losses, and help scale CDR activities that include activated carbon systems in circular applications.		
BCH	3.6	IMF1 3.6.7	423	Issue: The current treatment of thermal reactivation or incineration as immediate reversal ignores substantial environmental benefits associated with reactivation. This position inadvertently discourages best practice recycling of activated carbon. Suggested Change: Adjust criteria to recognize thermal reactivation practices under controlled conditions that demonstrably retain a significant portion of the original fixed carbon. Certification should accommodate validated carbon retention through audited third-party mass balances, thereby encouraging sustainable industry practices.	See reply to comment #46.	No change
BCH	3.6	IMF1 Table 3.2	422	Issue: Current rules classify thermal reactivation or incineration of activated carbon as immediate reversal, neglecting empirical lifecycle assessments which demonstrate that thermally reactivated activated carbon typically retains around 80% of its initial fixed carbon content. By categorically disqualifying reactivation, the methodology inadvertently incentivizes single-use activated carbon, contradicting broader sustainability objectives. Suggested Change: Introduce explicit provisions recognizing partial carbon retention after thermal reactivation. A conservative default retention factor (e.g., 60-80%) should be adopted, subject to third-party verification through documented mass-balance assessments. Additionally, introduce a pragmatic volume-equivalent take-back program, where manufacturers commit to reclaiming and permanently sequestering an equivalent amount of activated carbon sold. This approach avoids impractical individual particle tracking and ensures redirection of reclaimed material into permanent carbon sinks.	See reply to comment #46.	No change

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BCH	3.6	3.6.6 R3	439	It is my opinion that section 3.6.6 needs to be amended. 3.6.6. a & b are fine as is, but c is where the issue comes up. In the context of retail sales of bagged compost x biochar mixes, it is impossible to track the inventory of third party vendors of these products. It will also be difficult, or impossible, to get precise information on customer data from these retailers (e.g. Home Depot, Lowe's, Ace Hardware, and others). In light of this impossible task of tracking material once sold to a retailer, I suggest a more flexible - and practical - solution, such as using a reasonable discount for fossil fuel emissions associated with transport from the production facility to the retailer - and even to the consumer. In the US - and likely elsewhere - it is not cost effective to ship mulch, compost, and biochar great distances. For this reason, these products are produced locally with - likely - a 100 mile radius for distribution. Therefore, Puro could say 'when sold to a retailer, 100 mile transportation is assumed in lieu of precise consumer data.' Hopefully this all makes sense! If the rules remain as written, anyone who plans to sell biochar to retailers (a desirable outcome to increase biochar uptake broadly), would be unable to use Puro.earth as the registry. The organization would force bulk sales to farmers only when used for agriculture purposes.	See reply to comment #307	Major revision
BCH	3.6.3	R3 Table 3.2	315	We strongly believe that gardening products (biochar/compost mixes and pure biochar) sold to individuals through online retail or stores should be an eligible application. In contrast to e.g biochar use in cosmetics, the exact intended pupose of the product creates carbon sequestration. Any loss would be a result of a reversal/diversion event. We contend that the risk of diversion/reversal of these prodcuts e.g fires in distribution warehouses is extremely low indeed and such diversion/reversal events can be sufficiently addressed as a reversal/uncertainty risks. Retail sales are an important channel for many producers, the channel also raises awareness the general awareness of biochar and should not be discouraged.	See reply to comment #307	Major revision
BCH	Table 3.2	R1-2-3 Table 3.2, p. 52	434	Consider allowing the qualification of discounted CORCs for biochar used in "retail to individuals" applications -while traceability of end-use of these products may be difficult, they do represent a large untapped potential market for biochar products -getting more biochar out into the hands of individuals is in more cases than not, more beneficial than not producing biochar at all -this may discourage certain biochar operations from beginning their	See reply to comment #307	Major revision

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				operations -credit for CORCs in this area would help to bolster the carbon economy as a whole which is the goal of crediting CORCs for biochar to begin with -e.g. 1.1 Biochar in climate change mitigation & sustainability- "To maximize its contribution to sustainability (Cowie et al., 2024; Sundberg & Azzi, 2024), biochar systems should be designed to harness these diverse benefits, while simultaneously minimizing any potential negative impacts throughout the supply-chain." - it is nearly impossible to prevent ALL potential for negative impacts associated with any other biochar applications so it is unfair to give special scrutiny "retail to individuals" applications and require complete elimination of negative potential impacts in this category		
BCH	3.6	R3 Table 3.2 p. 47	235	Retail to individuals (R3) is most often done by the same intermediaries who supply biochar in pure or mixed form also to uses BE1 and BE2. They mix, package and supply the product further to gardening retailers. Due to small packaging size and correspondingly high price results in negligible diversion risk. Suggestion: Thus it is needed to change R3 to be "Eligible for CORCs" or at least eligible under certain conditions - e.g. R3 is eligible when biochar is supplied to intermediary which also uses biodchar to BE1 and BE2.	See reply to comment #307	Major revision
BCH	3.6.8	R3	307	It is requested that category R3 (Retail to individuals: Gardening products sold in stores, in pure or mixed form) be considered eligible for CORC generation, provided that specific conditions are met, such as ensuring adequate traceability and demonstrating a low risk of reversal. Biochar intended for this category reaches high market prices in regions such as Florida (USA), typically ranging between 500 and 1000 USD per cubic yard, according to market prices from Green Dreams Florida and other local suppliers (2024)(. This high price reflects both the premium quality of the product and its use in long-lasting applications, such as soil amendments for professional gardening, high-end residential landscaping projects, and ecological restoration initiatives. The economic value of the biochar, combined with its structural incorporation into soils, implies a conscious commitment by users, significantly minimizing the risk of diversion or improper disposal. Additionally, data from the Florida Department of Environmental Protection (DEP, 2023) shows that green waste, including mulch and soil	Various commenters have suggested that retail to individual of gardening products (R3) to be eligible for CORCs despite perceived traceability challenges and potential, albeit context-dependent, reversal risks. The main arguments put forward have been: - the high price of biochar sold in retail markets makes its economically irrational to use for non-soil applications (lowering misuse and diversion risk) - the willingness to pay for biochar soil in retails also indicates an awareness from the consumer (lowering misuse and diversion risk) - the disposal of gardening products eventually ending in solid waste incinerators is regionally specific, and that green waste can be predominantly managed through composting and recycling (low cascading risk) - the competence of retailers who specialise in biochar sales for gardening products, offering services and support to consumers - unfair treatment of "retail to individuals" relative to other	No change

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				amendments, is predominantly managed through composting and recycling, with an extremely low risk of incineration. Therefore, biochar products marketed under category R3 meet the principles of permanence and low risk required for CORC generation. Their eligibility is respectfully requested under the specified conditions. https://www.greendreamsfl.com/copy-of-mulch-pickup-delivery-1 https://www.arti.com/store/	categories, arguing that absolute zero-risk does not exist, and highlighting the various benefits of retail products (from awareness to agronomic effects) Some commenters have suggested to condition the CORC eligibility of biochar retail to individuals, in different manners: - application of a CORC discount factor for this category, representative of the disposal risks in incineration, reckoning the difference e.g. between the USA and Europe - limit the type of retailers to those also work with other categories of use in the built environment As a result, Puro.earth attempted to change the category R3, to "eligible for CORCs under conditions", and the following conditions were suggested: 1. Retail biochar products are sold, rather than distributed for free 2. Retail biochar products are clearly presented and marketed for eligible applications, i.e. use in gardening applications and similar, and ideally biochar is processed into a ready-to-use product 3. The retailer, which is considered the last tracked user, must attest reception of the products and their planned local (i.e. regional) sale in eligible applications, and disclose its plans for management of unsold products (e.g. adequate disposal or return). 4. For pure biochar products, the emission boundary stops at the retailer's gate and is further complemented by a standardized region-specific assumption for transport by the clients (e.g. 100 km radius transportation). Incorporation into soil is neglected as assumed to be carried out manually. The conditions above were deemed not sufficient by Puro's Advisory Board. Other options were discussed, but deemed insufficient, and it was preferred to revert to the original suggestion for now to enable approval of the methodology. **Both Puro.earth and Puro's Advisory Board reckon that these products have high environmental value and are open to further suggestions to make this category eligible for CORCs in the future.**	

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BCH	3.6	R3	113	Are there requirements for what share is allowed for garden use?	No, there are no minimum nor maximum shares of the biochar production that is allowed or not for use R3.	No change
BCH	3.6	3.6.9	127	Under your example, you said USDA does not have a rule governing the use of biochar as animal feed in the agricultural sector. From my research I believe the FDA does have a rule in accordance with the AAFCO. https://www.agproud.com/articles/23630-charcoal-powder-as-a-feed-ingredient-what-s-the-status	The example was reformulated, focusing on soil application and a more accurate reflection of the USDA regulation.	Clarification
BCH	3.6	3.6.10	128	I'd reconsider use of WBC analytic method requirements. They use DIN standards in some test methods which makes it very hard for labs across the world to comply with the testing requirements. This increases the project developer's cost and time for lab testing. With more frequent lab testing, this is an even bigger issue.	Thank for the important feedback. Note that national regulation takes precedence over the methodology. This was clarified in the rules. We also edited the rule to specify other ways of having approved analytical methods.	Minor adjustment
BCH	3.6	3.6.11	85	c. Why is this not conducted more frequently? Why only one time during the crediting period? What is the reasoning behind this?	This has been the common practice in the biochar industry to date, and relates to both feedstock properties (presence of certain elements) and operations (which is also related to PAHs). The rule was revised as per other comments too, and revision of the sampling plan in 3.5.	Major revision
BCH	3.6	3.6.12	137	the analytical methods listed in the Annex I of the World Biochar Certificate are mainly German analysis methods, many of which have no availability or use outside Germany. Biochar analysis methods are being developed and evaluated at the moment. Certified laboratories can provide various applicable analytics especially considering the intended application of biochar.	Thank for the important feedback. Note that national regulation takes precedence over the methodology. This was clarified in the rules. We also edited the rule to specify other ways of having approved analytical methods.	Minor adjustment
BCH	3.6	3.6.12	330	How will analytical methods be demonstrated to be in equivalence of the analytical methods described in the WBC? We recommend using identical language from section 6.1.6, and providing specific eligible analytic methods for each parameter. The WBC uses primarily DIN standards, which are European-specific and are rarely used in the Western Hemisphere. There are also not always comparable ISO standards to DIN standards, for example.	Cross reference to the rule in 6.1.6 was added. Thank you.	Minor adjustment
BCH	3.6	3.6.13	86	b. "competent authorities" is too broad, who are these? This needs to be defined.	The term competent authorities is used across the methodology to refer to e.g. ministries, safety agencies, or other public institutions.	No change
BCH	3.6	3.6.13	87	d. i.) i.e. the contaminated biochar can be used in soil that has another contamination and the end result is that the soil now has other contaminants? This makes no sense and should not be allowed.	It may make sense in certain situations, e.g. the cultivation of crop on land with high level of a certain metal, and where biochar is then subsequently re-applied.	No change
BCH	3.6	3.6.5	506	REMARK BOX: May I suggest you say “Recommended” on This? That biochar be used in	Agricultural practices and schedule may not make the immediate incorporation feasible. See other comments and revised box text.	Clarification

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				farms – as soon as possible – for once ploughed in – it becomes impossible to burn or remove.		
BCH	3.6.10	Footnote 14	43	Please use the correct link: https://www.carbon-standards.com/en/standards/service-514~production-of-biochar.html	Thank you for your feedback. The suggested link to the WBC guidelines has been added.	Minor adjustment
BCH	3.6	p. 42	75	last sentence: ... including any form of disposal or application that is illegal OR environmentally harmful, this should not be a listing/comma here.	The sentence was modified accordingly.	Clarification
BCH	3.6.8.	3.6.8 p. 46	42	Please reference correctly to the World Biochar certificate guidelines https://www.carbon-standards.com/docs/transfer/4000036EN.pdf?t=1990522	Thank you for your feedback. The suggested reference to the WBC guidelines has been added as a footnote.	Minor adjustment
BCH	3.6	p. 57, section 3.6.14.	194	One would have though that the mixing of sewage sludge with woody material would be possible, as the mixing improves pyrolysis conditions and dilutes the presence of pollutants. This was done in the following studies: https://link.springer.com/article/10.1007/s11104-012-1131-9; https://www.sciencedirect.com/science/article/pii/S0146638012001532	See reply to comment #181. Change as in rule 3.4.22 was implemented here.	Major revision
BCH	3.6	p. 57, section 3.6.15	195	Second paragraph. There are 3 options described. a fourth one could be added, referring to "characterising the added value of biochar, e.g., liming equivalence, available nutrients, etc., which are not compulsory requirements in the characterisation of biochars.	Comment was incorporated as part of the second example.	Clarification
BCH	3.6	Table 3.3. (p.56)	493	Quote: Line reading: "PCDD, PCDF, PCB (*Once per pyrolysis unit for the first production batch)" Comment: Do the following edits: "PCDD, PCDF, PCB (*Once per pyrolysis unit for the first production batch Frequency of analysis to follow this rule: - for continuous processes, once for the first Facility Audit, then new analysis every time temperature profile breaches the uniformity criteria defined in rule 3.5.37 - for semi-continuous and batch processes, every 100 dry tonnes produced or at every batch, whichever the greater" Rationale: Batch and semi-continous processes are by nature much less homogeneous than continous processes, hence the need to do regular analyses for them.	The frequencies of analysis were revised as per other comments, balancing viability at various project scales and environmental integrity.	Major revision
BCH	Table 3.3.	Table 3.3., Quality/analysis	304	Allow for felxibility in biochar quality standards if biochar is intended for pemanent storage in burried volumes. Reason: allow biochar production from biomass with higher heavy metals content, such as biomass produced through waste water treatment (secondary stage waste water treatment), where biomass may accrue higher metals levels. Biochar	The use case presented is indeed relevant and known. This seem to already be possible via the current rules, and the specific quality values for the GEO use category (see Table 3.2) and the deviation mechanisms possible.	No change

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				produced in this way may only be used in permanent underground storage case (isolated from effects of ground waters if required).		
BCH	3.6.9	p55	267	Puro should require projects to first follow Puro where regional environmental guidance is less stringent or none exists. Only, if the regional requirements are are stringent, should projects should follow that over Puro's guidance. This would ensure all core environmental metrics are assessed in all jurisdictions (e.g. PAHs in the USA) and no environmental harm is caused.	Please note that the absence of biochar-specific regulation is not accepted. Only if biochar-specific regulation, deviations from the rules is possible. This is deemed sufficient at this stage due to the general absence of biochar specific regulations.	No change
BCH	3.6.10.	0	45	There is no statement indicating that the World Biochar Certificate and similar associations such as WBC Agro, WBC Premium, etc., are official trademarks owned by Carbon Standards International AG. Their use, whether as a logo or in written form, is only permitted with the approval of Carbon Standards International AG. Additionally, we would like to be informed if project developers are using our logos or making any claims (e.g., in PDDs) that their biochar is certified according to WBC or meets the requirements, or similar statements.	Thank you for the comment. This has been addressed via direct communication with the commenter.	Minor adjustment
BCH	3.6	0	117	Concrete, asphalt and other construction materials have been identified as potential applications for the biochar, alongside this the methodology has a lot of detail on the degradation of the biochar in soil application releated to the H/C , temperature and time. However it is unclear how this approach is considered for the construction applications. It is therefore suggested to make it clear if this approach should also be taken for construction applications or not. From a scientific point of view, it makes sense to not apply this model as the degradation methods that are in soils, shouldn't be present in construction applications, such as no oxidation, exposed to UV or biological degradations from bacteria or fungi. For the end of life for the construction materials, landfill is a possible situation, this is likely to be <10% of the volume of the biochar depending on specific application, this amount of biochar should then be modelled as if it is in soil as it would be exposed to enviromental factors similar to soils. e.g concrete pillar is used for 60 years, after which it is crushed up, this means that for the remaining 40 years, 10% of that biochar should be moddelled as in a soil application. Or it alternatively, because <10% will degrade and the amount of degradation that is likely to occour is 10-20%, this means that only 1-2%	Thank you for the comment. This shall be covered primarily in section 6.2 as well as section 4. For the time being, and based on discussions with multiple stakeholders during working group sessions, Puro.earth decided to keep using the same persistence equation for soil and non-soil applications, primarily due to the end-of-life that often includes at least partial exposure into soil-like environments. This is perceived as conservative, and similar approaches have been taken by other working groups (e.g. EU CRCF). We agree on principle that the time horizon used in persistence equations (200 years) could be reduced to 150 years, on average, for long-lived constructions materials; but not necessarily for asphalt. For simplicity at this stage, this was not implemented.	No change

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				of the overal biochar used in the construction application would be released, perhaps an easier approach is to incorporate this 1-2% of CORCS into a leakage reserve.		
BCH	3.6	0	118	Puro is focused on removals, biochar in concrete applications has been shown to increase carbonation amounts of the cement, this means that the biochar helps more removals, which could be modelled based on the surface area of the resulting concrete. Perhaps this can be considered for the next update of the methodology.	Thank you for the suggestion. This is indeed an interesting area of development, and we are aware of ongoing work at the interface of biochar and carbonated materials (CM). As this topic also relates to the CM methodology, we will continue to monitor advances and consider such synergies in future updates where appropriate.	No change
BCH	3.6	0	119	If too much biochar is used in concrete applications, the concrete may decrease in strength, to combat this, more cement or other binders can be used to compensate this, there is no specific mention on ensuring this is included in the baseline. This also applies to the use of biochar in asphalt, higher levels of biochar can result in more bitumen being required. Alternative from this, if more cement isn't required, then it is possible that biochar could have displaced cement, avoiding these emissions, this is an avoidance rather than a removal, so is this outside the scope?	Thank you for the thoughtful comment. These effects are currently considered beyond the scope of the methodology, as they are generally regarded as low-risk. If a formulation using biochar were to require more cement or bitumen and thus increase emissions, this would technically fall under the category of leakage (section 8). However, such negative leakage is not expected to be significant, as biochar use in construction materials typically targets performance improvements alongside carbon storage. On the other hand, if biochar displaces cement and avoids emissions, this would be classified as positive leakage, leading to avoided emissions and therefore remains outside the current scope. Positive effects of this kind can still be reported as co-benefits—see section 3.8 on SDGs.	No change
BCH	Table 3.2	0	193	Shouldn't it be said somewhere that those uses that are eligible for CORC are also eligible for in-setting?	Thank you for the comment. Please refer to Chapter 3.8 on double counting. It is unclear what is meant by “in-setting” in this context. If the intent is to attribute the stored carbon in a biochar-based product (e.g. concrete) toward reducing that product’s footprint, this is only permissible if the corresponding CORCs are retired explicitly for this purpose. If the CORCs are instead sold to a third party for a carbon removal claim, and the product is simultaneously marketed as carbon neutral due to the biochar content, this would constitute a double claim and is not allowed.	No change
BCH	3.6.7	0	297	Clarification on "cascading uses" for biochar - given that it is not going into it's final use, will there be any GHG accounting (estimated/default value/actuals) for emissions associated with transporting biochar from cascading to final uses?	This is addressed in separate rules, in section 7 (rule 7.2.4, 7.3.13, 7.3.14). Puro's approach relates to the Point of Creation of the CORC. The attribution of emission to CORC stops at the point in the supply-chain when the removal is guaranteed. Any subsequent activities are attributed to the physical product. A clarification was added, with cross reference to section 7.	Clarification
BCH	3.7	3.7.2	88	a. Maybe add a link to the template here? Links are given for most other templates.	Thank you for your suggestion. The link has been added as a footnote.	Clarification

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BCH	3.7	p. 58	438	Expand SDG co-benefits to include criteria related to Envionmental Justice, such as pollution reduction in overburdened communities. "- Would help recognize social value of biochar projects operating in communities disproportionately impacted by incinerators or landfills - Aligns with broader global climate justice goals and U.S EJ40 policy"	Thank you for the suggestion. The SDG Attributes listed in this section are illustrative, not exhaustive. Environmental Justice-related impacts could potentially be addressed through an SDG Attribute, if aligned with the SDG Assessment Requirements. We encourage proposing new Attributes through the process outlined in those requirements.	No change
BCH	3.8	3.8.1	114	It is important that this methodology clearly presents guidance to the biochar producer in relation to the Renewable Energy Directive (RED III). Many biochar producers also produce bio energy products such as biomethane. The greenhouse gas accounting for the RED III contains a parameter allowing for the reduction of the biofuel's carbon intensity score based on the 'esca' parameter: Emission Saving from Soil Carbon Accumulation, (which includes biochar) related to the production of the biofuel. Clear guidance should be provided on double counting in relation to this topic.	Thank you for the input. We have added references to soil carbon projects, EU RED biofuels, and EPDs. We note however that this situation may arise in different contexts: A) **Carbonization co-products must not double count, in their footprint, for the carbon removal achieved by biochar**. This applies e.g. to biofuels that would be certified under the EU RED, where the 'esca' parameter Emission Saving from Soil Carbon Accumulation, (which includes biochar), technically allows for it. Our rules forbid this double-counting: we require consistent accounting between different reporting schemes, and our rules enable this, e.g. via the energy allocation procedures that are compatible with the EU RED. B) **Soil carbon accumulation certification programmes**: in the context of such programmes, it is the responsibility of the programme operator and its methodologies to ensure that use of biochar in the fields and farms is not double-counted towards increased in soil organic carbon. C) **Biochar-containing products for which a footprint is calculated** (e.g. EPDs, PEF): such footprint, if it includes the carbon removal achieved by biochar, requires the CORC to be retired for this purpose.	Clarification
BCH	3.8	3.8.1	89	Add a safeguard on double counting with soil carbon projects here explicitly.	Thank you for the input. We have added references to soil carbon projects, EU RED biofuels, and EPDs. We note however that this situation may arise in different contexts: A) Carbonization co-products must not double count, in their	Clarification

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					footprint, for the carbon removal achieved by biochar. This applies e.g. to biofuels that would be certified under the EU RED, where the 'esca' parameter Emission Saving from Soil Carbon Accumulation, (which includes biochar), technically allows for it. Our rules forbid this double-counting: we require consistent accounting between different reporting schemes, and our rules enable this, e.g. via the energy allocation procedures that are compatible with the EU RED. B) Soil carbon accumulation certification programmes: in the context of such programmes, it is the responsibility of the programme operator and its methodologies to ensure that use of biochar in the fields and farms is not double-counted towards increased in soil organic carbon. C) Biochar-containing products for which a footprint is calculated (e.g. EPDs, PEF): such footprint, if it includes the carbon removal achieved by biochar, requires the CORC to be retired for this purpose.	
BCH	3.8	3.8.1	519	Double-Counting: Provision 3.8.1 is overly restrictive.	Rule 3.8.1 reflects current best practices in carbon markets to ensure environmental integrity and avoid double claiming. These requirements are essential for maintaining trust and credibility in carbon removal claims.	No change
BCH	3.8	3.8.2	381	Adding labels on biochar products will not prevent double counting since there is no ability to track claims by end users. The warning is a notice and ask for adherence, but is not enforceable	We recognize that labelling alone cannot fully prevent misuse or unverifiable claims, especially by private individuals. However, it serves as a practical and visible notice to promote adherence. While not enforceable, it helps set expectations—particularly for organizations making public or commercial claims. At this stage, it remains the most feasible approach.	No change
BCH	3.8	3.8.4	5	In environmental labelling such as EPDs, it is commonly mandatory to model the physical reality of the product. This means that even if CORCs are issued, the declaration must declare a negative GWP-biogenic over cradle-to-gate for the biochar portion of the product. Puro could give some guidance on a standard text to include in such declarations, something along "This product contains biochar which is used for registering voluntary carbon offsets under the Puro earth biochar methodology. As the physical reality of the product must be reported in this declaration, a	Thank you for the input. We have added references to soil carbon projects, EU RED biofuels, and EPDs. We note however that this situation may arise in different contexts: A) Carbonization co-products must not double count, in their footprint, for the carbon removal achieved by biochar. This applies e.g. to biofuels that would be certified under the EU RED, where the 'esca' parameter Emission Saving from Soil Carbon	Clarification

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				negative GWP-biogenic is declared for the biochar but the declaration shall not be used in such a manner as to include negative GWP-biogenic in any final assessment for the biochar portion, as that will double count the sequestered carbon".	Accumulation, (which includes biochar), technically allows for it. Our rules forbid this double-counting: we require consistent accounting between different reporting schemes, and our rules enable this, e.g. via the energy allocation procedures that are compatible with the EU RED. B) Soil carbon accumulation certification programmes: in the context of such programmes, it is the responsibility of the programme operator and its methodologies to ensure that use of biochar in the fields and farms is not double-counted towards increased in soil organic carbon. C) Biochar-containing products for which a footprint is calculated (e.g. EPDs, PEF): such footprint, if it includes the carbon removal achieved by biochar, requires the CORC to be retired for this purpose.	
BCH	3.8	3.8.5	298	Suggestion - the biochar activity falling with the NDCs of countries should strictly be only for CDR covered under the Puro.earth methodology. Biochar decarbonizes agricultural systems beyond CDR (displacement of fossil fuel based fertilizers), which can support a country's decarbonization goals.	Thank you for the suggestion. The text in 3.8.5 refers specifically to the carbon removal component of the biochar activity. Broader decarbonization co-benefits, such as fertilizer displacement, are not subject to double counting provisions under this rule.	No change
BCH	3.8	3.8.5	382	Who is ensuring that all disclosures have been done with host countries and other programs? Is that the VBB? Consider if the guidance provided is sufficient, traceable, enforceable for those conducting audits. What is the recourse if disclosure have not been made? Are CORCS not issued, or revoked or withheld until disclosure is complete? Defining the consequences and any allowable steps to address the disclosure gaps would be helpful	Thank you for the comment. The procedures for disclosure, verification, and consequences of non-compliance are detailed in the Puro Standard General Rules and related guidance documents. These outline the roles of the Issuing Body and verifiers, and the conditions under which CORCs may be withheld or not issued.	No change
BCH	3.8	3.8.5/3.8.6	34	Requirements in 3.8.5 and 3.8.6 could result in significant additional compliance needs for projects. The inclusion of these compliance schemes feels somewhat “last minute.” Provide more descriptions and guidance of what developers need to do and when these are expected to be relevant (e.g., when the Paris Agreement Crediting Mechanism develops a biochar methodology) along with how developers should think about becoming compliant and avoiding double counting of credits internationally.	Thank you for your comment. We have clarified that the detailed procedures are in the document “Puro Standard Article 6 Procedures”, which you may access in our Document Library. These requirements are relevant for inter-government inventories and will become more operational as each host country develops their capabilities to manage the authorisation process of project uses. It is a regulatory requirement a in case the biochar project wishes to issue CORCS with labels like CORSIA-eligible or ITMO.	Clarification
BCH	3.8	3.8.6	90	Potentially add a buffer to safeguard such cases? i.e. in countries where such things could potentially become relevant, the supplier is obliged to keep an additional bufferpool of e.g. 10% of credits for such cases.	Thank you for the suggestion. We maintain the reversal compensation as defined clause 6.7.4 in Puro Standard General Rules. We have considered buffers, but they have also limitations,	No change

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					and only compensate reversals up to a buffer, limited by a buffer percentage which have historically been show to be underestimated in the case of forest credits. We follow the development of the instruments including insurances and buffer mechanism, and will revisit the reversal mechanism when the Pure Standard General Rules evolve.	
BCH	4.2	4.2.3	93	What could such a reversal event be, if all are non-material? For how long does the Supplier need to monitor this? This should be defined.	In the case of biochar, a reversal event could be fraudulent reporting of end use. If a supplier has reported end-use as soil application, and afterwards it is found out that the evidence was faked and the biochar was actually incinerated, leading to a full reversal of the issued biochar removal. The Supplier is responsible to compensate in full the reversal.	No change
BCH	4.2	4.2.3	129	How are "obligations" defined here? This could be a serious issue if the requirements are not well defined for who is at fault in the case of reversal occuring.	Obligations are the requirements set in the methodology and agreements between Puro.earth and the Supplier.	No change
BCH	4.2	4.2.3	383	CO2 removal supplier is liable for compensation is a challenging concept. Is there sufficient monitoring specified in the protocol to hold the CO2 removal suppliers liable and for what period of time are they liable after the CORCS have been transacted? What evidence of a reversal would a supplier have? Consider applying a buffer pool concept or hold back to address reversal risk.	Reversal is an event which cancels, entirely or in part, the effects of an issued CORC. Reversals are fully compensated by the Supplier according to clause 6.7.4 in Puro Standard General Rules. We have considered buffers, but they have also limitations, and only compensate reversals up to a buffer, limited by a buffer percentage which have historically been show to be underestimated in the case of forest credits. We follow the development of the instruments including insurances and buffer mechanism, and will revisit the reversal mechanism when the Pure Standard General Rules evolve.	No Change
BCH	4,2	4.2.3	524	Rule 4.2.3 of the Biochar Methodology states that if a reversal event occurs due to the failure of the CO_2 Removal Supplier to meet its obligations, the supplier is liable for compensation. This implies that the supplier must monitor the biochar after production and during its end use—yet the protocol does not require a post-production monitoring plan or specify a liability period duration. While mitigation of reversal risks prior to final use is addressed in Section 3.6.4, and Table 3.2 summarizes rules for assessing re-emission risks, the evidence required for end-use monitoring (Sections 3.6.5 and 3.6.8) remains loosely defined, creating verification uncertainty. Although the methodology deducts carbon storage losses to account for expected decomposition—a conservative and appropriate approach—we recommend that PuroEarth consider implementing a buffer pool or	Reversal is an event which cancels, entirely or in part, the effects of an issued CORC. Reversals are fully compensated by the Supplier according to clause 6.7.4 in Puro Standard General Rules. We have considered buffers, but they have also limitations, and only compensate reversals up to a buffer, limited by a buffer percentage which have historically been show to be underestimated in the case of forest credits. We follow the development of the instruments including insurances and buffer mechanism, and will revisit the reversal mechanism when the Pure Standard General Rules evolve.	No change

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				holdback mechanism to proactively address post-issuance reversals. This would mitigate reversal risks upfront, eliminate the administrative burden of determining liability after the fact, reduce the risk of undetected reversals going unaccounted for, and relieve CO_2 Removal Suppliers from the challenge of end-use reversal monitoring.		
BCH	4.2	Case for biochar burial	305	I don't agree with the idea of making buried biochar permanently un-usable, for reasons explained above. Bassically, CORCs should not be made un-doable for very long term biochar storage use cases. There should be however a robust and reliable long term monitoring and durability verification program.	We agree with your view that non-mixed buried biochar would need long-term monitoring to ensure its is not excavated later. At the moment those rules are not developed and therefore non-mixed burial is excluded and not eligible in this methodology.	No change
BCH	4.2	p. 62	196	Third line. Where it says "Reversals (i.e., post-issuance) are also different from risks of unintended re-emissions of carbon prior to the issuance of a CORC", I would recommend to provide an example.	Thank you for your suggestion. Note that there are examples already in the text below.	No change
BCH	4.2	p. 63	38	Fire risk is currently treated qualitatively in the reversal risks section. Consider adding a quantitative approach to classifying fire danger, perhaps via national or international indices, and extra buffer pools or discounts for high-risk geographies if it is expected that fire could lead to meaningful reversals.	Thank you for your comment. We maintain our current language, because wildfires are typically not perceived in the scientific literature as a relevant risk of reversal for biochar application to soil, when mixing is required. In the “Biochar Carbon Stability Test Method: An assessment of methods to determine biochar stability”, (International Biochar Initiative 2013): “It is unlikely that vegetation fires will lead to a significant re-burning of applied biochar that is incorporated into the soil. Temperatures during fires decrease dramatically with depth, and mixtures of biochar and soil will exhibit no greater combustibility than that of other organic matter in soil.”	No change
BCH	4.2	p. 63	91	I don't agree with the statement that fires are not a reversal risk. For pure surface application, usage of crop burning should not be allowed. Also pure surface application should not be allowed in forests.	Surface application is not allowed. Eligible biochar uses require mixing.	No change
BCH	4.2	p. 64	259	Case of biochar burial : We recommend that an additionnal clause can be depicted regarding the following case. As a very realistic case, biochar can be used to filter/purify gazeous/liquid effluents from a landfill site. After saturation of such a biochar, destination can preferably be to be burried in the same landfill as an end-of-life destination. In such a case, we think that there is still a conservative approach that may avoid anny release of the carbon for a very long-time period.	Thank you for the comment. Burying biochar in the landfill is likely to include sufficient amount of mixing and thus be eligible with the current rules.	No change
BCH	4.2	p. 64, Table 4.1	197	In "Use is non-carbon preserving applications", the use of a term other than biochar when referring to charcoal used as a fuel is recommended.	Thank you for your comment. Carbonisation is a continuum and the terminology varies from charcoal to biochar to biocoke to activated carbon. The important threshold is the level of carbonisation indicated by H/C ratio.	No change

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BCH	4.2	p. 65	92	Table 4.1: Forest & agricultual fires: The paragraph basically states: it can pose a risk and then in the next sentence it says the risk is not existent? This does not make sense.	Thank you for the comment. We have clarified in the text that based on current rules requiring biochar mixing (as opposed to biochar surface application), this risk is deemed not material.	Minor adjustment
BCH	4.3	4.3.2	520	Environmental Analysis: Section 4.3.2 exceeds jurisdictional regulations.	Rule 4.3.2 does not exceed jurisdictional regulations, as it clearly sates "that are required by any applicable local statutory requirements".	No change
BCH	4.3	4.3.3	515	Stakeholder Engagement: Requirements in 4.3.3 are impractical.	Rule 4.3.3 is a direct consequence of the Puro General Rules, and is already in-force for all methodologies. It is aligned with principles of high-integrity carbon removals, and cannot be deleted. Puro.earth can work on facilitating this reporting, with improved templates and instructions.	No change
BCH	4.3	4.3.5	40	The current Environmental and Social Safeguards template contains a number of questions that are pretty irrelevant to many projects in more developed areas. Additionally, no developer actually violating something like Indigenous rights is going to be upfront about this. Puro should consider adjusting the requirement to fill this out, perhaps simplifying reporting requirements and putting more of the burden on the auditor to ensure that no safeguards are being violated.	The current Environmental and Social Safeguards template serves as a check list for project developers to think through which issues are relevant in their context.	No change
BCH	4.3	4.3.7.	494	Quote: "The CO2 Removal Supplier shall keep records and promptly report to the Issuing Body any event potentially having negative environmental or social impacts (or claims thereof) occurred during the monitoring period, including but not limited to any incidents occurring on-site (e.g. accidental release of chemicals or pollutants, improper waste disposal), or any legal actions and/or other written complaints filed by affected parties, and how these events are being addressed" Comment: "The CO2 Removal Supplier shall keep records and promptly report to the Issuing Body any event potentially having had material negative environmental or social impacts (or claims thereof) occurred during the monitoring period, including but not limited to any incidents occurring on-site (e.g. accidental release of chemicals or pollutants, improper waste disposal), or any significant legal actions and/or other written complaints filed by affected parties, and how these events are being addressed" Rationale: There is no point in reporting minor issues or reporting issues that did not effectively happen	Thank you for your comment. We agree and included your text about material event that have happened.	Minor adjustment
BCH	5	0	164	Baseline carbon removal (Cbaseline): Total amount of CO2e which would have been stored (naturally or man-made) in the selected baseline scenario, in the absence of the removal activity. Further requirements on the calculation of this term are given in section 6.3.	It is possible that C_baseline is not null. This can be the case for a Retrofit or Charcoal Diversion. For New Built, it is normally not the case.	No change

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				1) Depending on the baseline scenario, but also the alternative fate of the biomass, it is possible that baseline removals are not null. If this is a new facility, does the regulation still apply? If not, than the value is (zero) = 0?		
BCH	5.1	p. 70	130	In the last paragraph of this page, you refer to the monitoring period, but in the equation description you call it the reporting period. Are these terms interchangeable? If so I'd stick to one and maintain consistency. You also capitalize Monitoring Period in some places whereas in other places it is not. I prefer the capitalized version to annotate that it is a specific Puro term.	The correct term should have been monitoring period. Capitalization may be introduced in final copy-edit.	Clarification
BCH	5.1	p. 70	429	Propose: "Methane Avoidance Modifier" based on documented landfill CH_4 emissions avoided "-Puro already tracks fossil carbon and feedstock decay risks -Section 6.3 says baseline carbon storage is set to 0 except in rare cases, eg ladfilling and woody biomass, though not rewarded for avoidance, it does remove a potential deduction -""landfilling"" is acknowledged as enironmentally inadequate at the end of Section 6, meaning CH_4 avoidance should explicitly be credited, not just ""not penalized." - 6.3.5 already states that "status quo and inadequate non-productive management of such resources [sic decomposition piles of biomass]" should not be incentivized -3.4.9 "The CO2 Removal Supplier must have procedures in place at the Production Facility to minimize the risks associated with biomass stockpiling and minimize biomass decomposition during stockpiling" also highlights the importance of de-incentivizing stockpiling to reduce CH4 emissions	Edits in section 3.4 regarding biomass CH4 emissions in the baseline have addressed similar topics regarding the counterfactual of the biomass. A methane avoidance modified is not introduced.	No change
BCH	5/9	5.3.3/9.3.4	36	The role of dMRV systems and monthly certification under the proposed methodology are unclear. Address these and provide high-level guidance on the expected role of dMRV systems and whether developers will be able to certify credits monthly. Ideally, dMRV systems could receive further call-outs in sections 5.3.3 and 9.3.4 with clarified roles surrounding MRV support.	These considerations are beyond the scope of the methodology rules.	No change
BCH	6	77	320	During the Puro.earth webinar in April 2025, it was mentioned that random reflectance methods could become validated and operational within the next 2–3 years, potentially enabling demonstration of even higher biochar permanence. We encourage Puro.earth to continue monitoring developments in this area and to consider integrating random reflectance testing into the methodology once it is scientifically validated. Incorporating this approach would help maintain Puro.earth's	Thank you for the comment. Puro is indeed committed to following the scientific developments in this field, and the rules on random reflectance included in the methodology do support further learning.	No change

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				leadership in ensuring the highest standards of durability for biochar carbon removal.		
BCH	6.1	6.1.2	351	We recommend clarifying that in continuous production systems, a “batch” can refer to any logically defined and documented unit of production, such as a container, a day’s production, or a continuous campaign between maintenance events. The monitoring plan should specify the batching approach used. To avoid ambiguity and to accommodate large-scale continuous facilities like biomass power plants, the methodology should explicitly accept time-based, volume-based, or operationally-defined batches for purposes of dry mass determination and monitoring.	This was added to rule 3.5.38; specifying that "production batch" is to be defined as relevant for the Production Facility, and cross-referenced in this rule.	Minor adjustment
BCH	6.1	6.1.2	389	Additional clarification regarding what counts as a "biochar batch". Especially if lab reports are collected only once per quarter, would all biochar production during that quarter be considered as having the properties of that specific batch? Are batches subjective to the producer, i.e. one day of production = a batch? Or can it be all production from a sequence of continuous production = 1 batch until the next shutdown. It could also be simply one supersack or truckload as mentionned in the report, which is preferable to Puro?	This was added to rule 3.5.38; specifying that "production batch" is to be defined as relevant for the Production Facility, and cross-referenced in this rule. Further edits to rules in section 3.5, regarding sampling plan, clarify this item, as per other comments.	Major revision
BCH	6.1	6.1.3	94	d. Definition of representative should be given? Maybe add samples should be taken at least in triplicate to avoid sampling errors/bias and provide statistical significance?	Suggestion added for bulk density determination in lab, to address uncertainties associated with volume-based approaches.	Major revision
BCH	6.1	6.1.3	289	Specific Feedback: Rules 6.1.3 and 6.1.4 – Practicality of Moisture Measurement Standards Concern: While we appreciate the importance of ensuring accurate dry mass calculations, we believe that requiring strict adherence to ISO, DIN, or ASTM laboratory standards for all moisture measurements may not be practical for all project types, especially small- and medium-scale facilities. Many high-quality, calibrated commercial moisture meters and in-line moisture sensors currently available on the market offer reliable, sufficiently accurate measurements for operational purposes. Training field operators to perform full ISO-grade lab protocols would introduce unnecessary complexity, cost, and risk of procedural errors, without necessarily improving the overall quality of dry mass estimations. Suggestion: We respectfully recommend that Puro: -Allow the use of calibrated commercial moisture measurement devices	This intent of rule 6.1.3 and 6.1.4 was as suggested by the commenter. It was clarified now in the text that the lab standards are to be followed when moisture is determined using those methods, in laboratory contexts. For other methods available in 6.1.3 (including in-line moisture sensors and other hand-held moisture meters), the rule was not requiring laboratory standards to be used (as indicated by the "as applicable" mention). Nevertheless, it was clarified in 6.1.4 how to deal with in-line moisture sensors and other hand-held moisture meters.	Minor adjustment

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				without requiring formal equivalence attestation, provided that devices meet minimum accuracy thresholds (e.g., ±1–2% moisture content accuracy); -Define minimum requirements for device calibration and documentation of measurement procedures in the facility Monitoring Plan; -Reserve full ISO/DIN/ASTM lab testing only for validation purposes, dispute resolution, or special cases (e.g., highly variable feedstocks, very high-risk facilities). This would preserve the scientific rigor of dry mass reporting while ensuring that the methodology remains practically implementable, cost-effective, and accessible for a wide range of project developers.		
BCH	6.1	6.1.4	352	The methodology currently lists only laboratory-based standards for moisture and bulk density measurements, which could unnecessarily restrict practical continuous monitoring for retrofitted biomass power plants. We recommend explicitly allowing on-site measurements using calibrated instruments, provided they are validated annually against one of the listed reference standards (e.g., ISO 589, ASTM D1762-84, ISO 17828). Moisture content should be permitted to be measured using calibrated moisture balances or probes, and bulk density determined using volumetric and weighing methods aligned with ISO 17828 principles. The methodology should clarify that the listed standards are reference methods and that equivalent on-site methods are permissible if calibration and equivalence are demonstrated and documented. This flexibility would enable continuous monitoring, lower operational costs, and encourage high-quality, scalable reporting without compromising measurement integrity.	See reply to comment #289.	Minor adjustment
BCH	6.1	6.1.6	135	We also recommend including Carbon-14 testing following ASTM D6866 in section 6.1.6 to determine the organic carbon content of eligible biochar. This approach is favored by the USDA as biochar is also one of the products certified under its BioPreferred program and subsequent programs. Testing biochar using Carbon-14 is essential to ensure that the biochar sequestered is biomass-derived, which is a clear indication of the amount of biobased feedstock used in the manufacturing process instead of less-desirable (and less expensive) materials like fossil-derived alternatives. The composition of the biochar and its biogenic content would have a direct link to its impact on the environment, especially if sequestrated. Another important example is Carbon Standards' Standard Gas Set For First Carbon Removal Certification For Mixed Waste Char, which	The use of C-14 measurements is deemed not necessary in this context. Note however that for sewage sludge, in section 3.4 a determination of fossil content in the feedstock is made. Note that RDF and MSW are not allowed feedstock for biochar under this methodology.	No change

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				considers Carbon-14 enabling testing of refuse-derived biochar produced in the UK by a pyrolysis-based energy-from-waste process. The methodology developed in the standard assesses the lower-bound biogenic content of any RDC (refuse-derived char) produced through the pyrolysis of waste containing both biogenic and fossil-derived materials. The standard uses C14 analysis of the resulting char and the pyrolysis flue gas to certify the minimum biogenic content of every char made from RDF and the sequestration pathway of the eventual C-sink is determined. The standard highlights how difficult it can be to track the biomass portion of heterogeneous waste and the importance of direct testing using Carbon-14. This approach is also relevant to biochar produced using mixed-feedstocks. An important example of C-14 testing being used to verify the biobased content of soil applications is the USDA National Organic Program, which requires ASTM D6866 testing for the verification of biodegradable biobased mulches (BDMs) in the program. Similarly, the European Sustainable Phosphorus Platform has repeatedly urged the EU to adopt C14 testing requirements in the bloc's definition of biobased fertilizers. This model would be even more impactful for these biochar protocols, which will be used as direct evidence for carbon sequestration.		
BCH	6.1	6.1.6	159	Carbon total (Ctot), Carbon organic (Corg)and Carbon inorganic (Cinorg). Inside the methodology, puro provided a list of analytical method to use in determining the Carbons. The biochar methodology did specify that 'in certain regions, the availability of lab able to quantify Cinorg is limited. For woody biomass, the Cinorg can be set to 0.005 kg / kg dry biochar'. - It is mention for woody biomass. Can it apply to palm kernel shell or empty fruit bunch? - If the lab only able to determine Ctot using the ASTM D5373 method, can it accept under this new method? - If only Ctot able to determine, how to calculate Corg and Cinorg? - Ctot is the same as Corg?	1. No, palm kernel and empty fruit bunches are not considered a wood material. 2. The suggested ASTM D5373 was added to the list. 3. For non-wood biochar, C_inorg must be determined separately.	Minor adjustment
BCH	6.2	6.2	385	" From 200 years onwards, biochar natural movements deeper in the soil profile are assumed to then ensure its protection from further decay, justifying storage over several centuries (i.e. CORC200+)." The basis for choosing 200 years as the timeframe where biochar is deep enough to no longer decay seems arbitrary. What is the justification of 200 versus 100 years? Consider assuming 100 years in the decay model and reverting to the CORC 100 to mitigate complexities for ongoing projects and demand destruction of credits from existing projects.	Thank you for the thoughtful comment. The selection of the 200-year mark is based on a combination of scientific reasoning and conservative assumptions. Natural vertical movement of biochar deeper into the soil profile—where conditions are more stable and microbial activity is reduced—is generally expected to occur over centennial timescales. This is supported by expert discussions with soil scientists, though the rate is highly variable and difficult	No change

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					to predict precisely. Further, the atmospheric half-life of CO2 in the atmosphere is of a similar order of magnitude. This approach also aligns with other definitions of "permanent" removals, e.g. the EU CRCF which defines permanent as storage over "several centuries". It is worth noting that this choice does not affect the validity or value of existing CORC100 credits, which remain fully compliant and credible under the previous framework. Puro.earth is open to alignment efforts across standards on this matter.	
BCH	6.2	0	144	There is no specific carbon accounting formula for adding biochar in building materials as the end use. Is it possible for Puro to develop a specific carbon accounting formula for adding biochar in building materials? Considering that biochar embedded in building materials will be subjected to a distinct environment—characterized by more closed and inert conditions—could this be recognized as enhancing its durability? Alternatively, does the temperature's effect on biochar durability, as considered in Puro's model, truly apply to its use in building materials?	See reply to comment #311: Rule 6.2.4 had a mention that the persistence model applies to both soil and non-soil applications, providing guidance on temperature selection. We have further clarified this, alongside future direction, in a remark box. See also reply to comment #117.	Clarification
BCH	6,2	6,2	525	The studies referenced to support the justification of revising the durability from 100 years to 200+ years report high persistence at 100 years (80-90% and 97%), and we acknowledge that current persistence models are likely overly conservative. However, the direct linkage between the developed decay model and the scientific literature is not clear. It is recommended to provide more explicit evidence to support the move from 100 years to a new durability metric of 200+ years. This change is material and could prompt additional scrutiny during buyer due diligence processes. Consistency in durability claims for project types across the VCM would likely benefit the integrity of the market as a whole.	Thank you for the thoughtful comment. The selection of the 200-year mark is based on a combination of scientific reasoning and conservative assumptions. Natural vertical movement of biochar deeper into the soil profile—where conditions are more stable and microbial activity is reduced—is generally expected to occur over centennial timescales. This is supported by expert discussions with soil scientists, though the rate is highly variable and difficult to predict precisely. Further, the atmospheric half-life of CO2 in the atmosphere is of a similar order of magnitude. This approach also aligns with other definitions of "permanent" removals, e.g. the EU CRCF which defines permanent as storage over "several centuries". It is worth noting that this choice does not affect the validity or value of existing CORC100 credits, which remain fully compliant and credible under the previous framework. Puro.earth is open to alignment efforts across standards on this matter.	No change

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BCH	6.2	6.2.2	145	The methodology estimates the biochar persistence fraction (PF, % = M - a x H/Corg), where, H/Corg is the hydrogen to organic carbon molar ratio of the biochar considered, and M and a are regression parameters varying with the soil temperature in the region of use. It is known that biochar persistence can also be affected by soil moisture (see Singh et al. 2012) but this revised methodology hasn't considered the effect of soil moisture. Reference: Singh, B. P., Cowie, A. L., & Smernik, R. J. (2012). Biochar carbon stability in a clayey soil as a function of feedstock and pyrolysis temperature. Environmental science & technology, 46(21), 11770-11778.	As per incubation studies, many environmental variables can affect biochar decay rates, including soil type, soil temperature, soil moisture, cultivation practices and other amendments. However, data to support confident adjustment methods to this various factors is not sufficient, albeit studied in certain individual studies. In Azzi et al. 2024, development of adjustment methods for soil moisture (or the biologically active time), akin to the biochar Q10 soil temperature adjustment method, were attempted but faced limited data availability (because most decay studies are conducted at the same moisture conditions, to the notable exception of one study in paddy conditions (saturated water)). Were are aware of continued research efforts on correlation between decay data, biochar properties, and environmental factors, led by other research groups.	No change
BCH	6.2	6.2.2	311	This calculation on persistance only applies to the soil application of biochar. Clear calculation principles or rules for other biochar applications such as building materials must be provided to avoid confusion. It is important to note that biochar included in the built environment (eg. cement/concrete) are not subject to the same environmental conditions. Hence, different persistence principles are required to ensure that value of carbon removal is not diminished	Rule 6.2.4 had a mention that the persistence model applies to both soil and non-soil applications, providing guidance on temperature selection. We have further clarified this, alongside future direction, in a remark box. See also reply to comment #117.	Clarification
BCH	6.2	6.2.2	391	For regression parameters, for a soil temperature falling between the numbers provided, would a linear interpolation be sufficient enough to calculate the corresponding permanence? EX. For calculating PF at 10.6 degrees, calculate PF at 10 and 11 degrees, interpolate linearly between the two results for the new result? --> 6.2.4 "Temperature data are rounded to the closest upper integer value", less precise than the interpolation?	Sub-unit differences are not relevant for the precision of the calculation. It is simpler and more conservative to take the upper value. Note that Puro.earth will provide a dataset and incorporate this into its reporting documents and software.	No change
BCH	6.2	6.2.3	96	Equation 6.5: What does this equation state? This must be a mistake and maybe one of the Corg should be Cinorg, I don't understand this, but this makes no sense, the equation defines a variable as itsself multiplied by a factor.	There was not mistake in the equation, but for clarity it was written differently. The right side of the equation had mass units.	Clarification
BCH	6.2	6.2.3	97	Why is Ctot mentioned here as if it was part of the equation? Should it maybe be a part of equation 6.5?	The sentence just specifies that hydrogen content shall be determined jointly with total carbon content (i.e. on same	No change

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					samples), as per the methods listed in another rule, and that the same analytical methods apply.	
BCH	6.2	6.2.4	115	Overview summary about random reflectance would be helpful	The methodology contains an series of contextual paragraphs and references regarding random reflectance. These were revised as per other comments.	No change
BCH	6.2	6.2.4	392	Will a link to the data set for soil temperature be provided? https://hal.science/hal-03518443v1 ? Other reputable data sources such as NRCS for precise United States soil temperature data will no longer be accepted?	To ensure consistency across projects and reduce the burden on suppliers, Puro.earth will provide a standardized, pre-processed dataset with aggregated regional groupings. The dataset put forward by Puro will be embedded in the reporting tools. Other datasets will no longer be accepted.	No change
BCH	6.2.4	0	299	Clarification on the definition "region of use of the biochar product" - does this refer to only final use or also cascading use. Final use would make more intuitive sense since cascading uses are not soil related, so soil temperature might be irrelevant.	We have clarified that it refers to the region of first use. Indeed, cascading uses may re-locate biochar; however, in most cases, subsequent uses are expected to fall within the same region.	Clarification
BCH	6.2	6.2.5	332	As previously described "global availability and affordability is limited". However, this still even remains the case for all parameters required for biochar quality testing - few laboratories can run all tests in one facility, making it a complex process. We recommend continuing to keep this in mind in future iterations of the methodology to ensure that the methodology maintains a balance of scientific integrity, feasibility, and accessibility. We are concerned about additional hurdels for low-tech technology where there is the largest opportunity for scale. We suggest that there is more clarity on what is truly obligatory and what language is being used to recommend strategies that improve project integrity.	Thank you for your thoughtful feedback. In response to this and other related comments, we have revised the methodology to reduce the required frequency of analysis for both biochar persistence properties and environmental quality parameters. We hope these adjustments strike an appropriate balance between scientific integrity, feasibility, and accessibility. That said, we acknowledge that laboratory capacity remains limited in many regions, and we recognize the need for continued development in this area. Through its activities, Puro.earth is also indirectly contributing to the scaling of such capabilities globally.	No change
BCH	6.2	6.2.5	353	Great idea to seek improvements in the understanding of biochar benefits!	Thank you for the comment.	No change
BCH	6.2	6.2.6	261	Despite the important scientific contribution provided during the recent years on this new approach, it is really a pity that PURO standard does not give a chance to this new method to come into practice. Would it possible anyhow that a practical comparison may be implemented in order to demonstrate and discuss on real case basis similarities or gaps that may occur between these 2 methods ?	Please see rules at the end of section 6.2 and the Remark box. These clearly indicate that random reflectance measurements can be reported and verified, albeit not yet used in quantification. Puro is committed to contribute to scientific advances and is open to collaboration with on those matters.	No change
BCH	6.2	General	306	Biochar persistance / durability of stored carbon: We would suggest long term durability/persistance analysis and verification protocol for deep underground storage of biochar that is not accessible for sampling. This would be based on accessible biochar storage that would keep biochar samples over decades in storage conditions almost identical to the bulk biochar stored underground. Periodical testing of biochar samples would enable modeling and forcasting of biochar durability burried	Thank you for the suggestion. While the storage of biochar in geological reservoirs remains in its early stages and raises important questions about optimal use, we have chosen not to develop a separate persistence quantification approach for such applications at this time. Additionally, there is currently limited scientific research available to support a distinct methodology for this type of storage.	No change

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				underground. Storage should support enough biochar samples for multi-decade testing program.		
BCH	6.2	p 76-77	271	The updated calculation is strongly dependant on work by Azzi et al., 2024. As a more general peice of feedback, it would be useful to consider more diversity in literature where available, though we accept that biochar literature in this area is somewhat limited.	Indeed, the equations developed by Puro are directly derived from the dataset and analysis tools provided in Azzi et al. 2024. This paper constitutes a review and data analysis of (nearly) all biochar all incubation data available, and hence incorporate numerous references therein from biochar incubation science as well as other fields. Referencing all those studies (100+) in the methodology would not necessarily improve clarity. Other fields of biochar persistence have been mentioned in the methodology, including the emerging approaches based on composition.	No change
BCH	6.2	p. 76	198	Text under "Biochar persistence research: two main approaches". Line 4, it says "highly aromatic structures". It should refer to "highly condensed aromatic structures".	Thank you. The term was added.	Minor adjustment
BCH	6.2	p. 76	290	General Feedback on Section 6.2 – Biochar Persistence Modelling We recognize and appreciate the work that Puro.earth has done to integrate the latest scientific advances into the biochar persistence modelling framework. The careful update of the decay-based model, including an extended 200-year horizon, a power model decay function, and incorporation of an 80% confidence threshold, reflects a responsible balance between scientific integrity and conservativeness. However, as project developers, we would like to raise the following points: Stability and Predictability: While scientific research will continue to evolve, it is essential that the methodology provides project developers with a stable and predictable framework for CORC issuance. Methodology changes should be forward-looking only, and not create retroactive uncertainty over credits already issued. Composition-Based Models: We recognize that composition-based persistence models represent a critical advancement for the long-term credibility and scientific accuracy of carbon removal standards. The use of techniques such as random reflectance and maceral composition analysis provides a more fundamental, structural understanding of biochar's stability compared to purely decay-based	Thank you for the thoughtful feedback. We are fully aligned on the importance of scientific rigor, market stability, and predictable transitions. Puro.earth is committed to updating methodologies conservatively, based on the latest science, while minimizing disruption to projects. The move from a 100+ to a multi-century persistence horizon reflects improved understanding of long-term biochar stability, guided by expert input. This change has been implemented with care to avoid material impacts on ongoing projects. Please also refer to the separately published transition plan outlining our approach to managing such updates responsibly.	No change

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				observations. We note that other registries, are beginning to incorporate composition-based approaches into their methodologies, reflecting a broader trend towards greater scientific depth and rigor across the carbon market. Given this context, we support and encourage Puro.earth's exploration and phased integration of composition-based models into future versions of the biochar methodology. However, to ensure a fair and successful transition, we respectfully recommend: Practical Transition Strategy Ensure that any shift toward mandatory use of composition-based models is phased and synchronized with the development of standardized, globally accessible testing protocols (e.g., adapted ISO standards, inter-lab reproducibility guidelines). Preserve Market Inclusivity Maintain flexibility during the transition to avoid penalizing early adopters or excluding smaller projects that may not immediately have access to high-cost analytical services. Transparency and Developer Collaboration Engage project developers early and openly when setting threshold values, classification methodologies, and interpretations of reflectance data. A developer-stakeholder working group could be instrumental in shaping standards that are both scientifically robust and operationally viable. Future-Proofing CORCs Ensure that credits issued under current rules are grandfathered and not subject to retroactive invalidation, even as scientific models evolve. Data Integrity and Fairness: The methodological flexibility allowing developers to optionally report random reflectance data is positive. However, if in the future such data were to influence CORC calculations or eligibility, it will be critical that:		

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				-Clear, standardized analytical protocols are available globally and affordably; -Inter-laboratory reproducibility is demonstrated; and -Projects are not penalized for historical data collected under previous versions of the methodology. Risk Management: Given the complexity of both decay-based and composition-based models, and the potential for divergent interpretations, we encourage Puro to continue promoting pragmatic, outcome-based principles: namely, using measurable, affordable, globally available methods that preserve fairness across project sizes and regions.		
BCH	6.2	p. 77	199	line 10. where it says "with particular attention to maceral content and morphotype analyses as determined by random reflectance methods". The maceral content and morphotype analysis are not determined by random reflectance methods. Sentence needs rephrasing. In principle, random reflectance is a property related to the physico-chemical properties of the biochar and therefore, its persistence in the geological time scale. Random relectance can be measured by optical microscopic techniques applying standardized practices (ISO, ASTM, DIN, Australian standards, etc.) developed for the microscopic study of coal. Maceral and morphotype content (in volume fractions) are a proxy to determine the purity, homogeneization, feedstock quality, manufacturing conditions and other aspects, and are determined applying the point cointing technique. We suggest to rephrase to "with particular attention to random reflectance and maceral or morphotype content, as determined by optical microscopy methods". Line. 11. where the references "(Petersen et al., 2023; Drobniak et al., 2024)", Is the Sanei et al. (2024) paper in the list missing?	Thank you. The suggestion was incorporated. The reference was added (it was later in the text).	Minor adjustment
BCH	6.2	p. 77	200	Text under section "Puro.earth quantification approach of biochar persistence". Typo in the reference Li et al. The H before Li should be eliminated. This typo is repeated in the first paragraph of the following page.	Thank you. This will be addressed in final copy-edit.	Minor adjustment
BCH	6.2	p. 78	95	What is the reasoning behind the 80% confidence interval? This should be explained, currently it seems like a randomly picked %.	The coverage probability of a confidence interval reflects the likelihood that the constructed interval contains the true value. Applying a discount based on an 80% confidence interval at the methodology level means that in fewer than 10% of cases, the quantification approach would result in an overestimation of	Clarification

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					carbon removal. It is important to note that this applies at the program level—across all certified projects—rather than to individual projects. A footnote was added to reflect this clarification.	
BCH	6.2	p. 78	201	Second paragraph of this page. The brackets in the Azzi reference are incorrect. It should say ïn Azzi et al. (2024)	Thank you. This will be addressed in final copy-edit.	Minor adjustment
BCH	6.2	p. 81	202	First paragraph. Line 10. See comment in page 77. This statement needs rephrasing.	Thank you. The text was edited according to the suggestion in the previous comment (line 367).	Minor adjustment
BCH	6.2	p. 81	203	Second paragraph. Line 3. Replace "gathered" by "classified"	Thank you for the comment. The suggestion was incorporated.	Clarification
BCH	6.2	p. 81	204	Second paragraph. Line 4. where it says "maceral groups", please cite ICCP's Huminite, Vitrinite, Inertinite and Liptinite group glassifications, respectively, or the ICCP Handbook.	Thank you for the comment. The suggestion was incorporated.	Clarification
BCH	6.2	p. 81	205	Second paragraph. Line 7. where it says "vitrinite, liptinite and inertinite", citation is needed. Please cite ICCP's Huminite, Vitrinite, Inertinite and Liptinite group classifications, respectively or the ICCP Handbook.	Thank you for the comment. The suggestion was incorporated.	Clarification
BCH	6.2	p. 81	206	Second paragraph. Line 10. Where it says "liptinite". We would challenge the occurrence of liptinite group macerals in biochar samples. Liptinite group of macerals are very labile and prone to decompose when heated. Liptinite macerals can only occur in "natural" chars, such as leonardites, or as residues in very low temperature biochars (<200 deg C). Unless this document covers "natural"chars as well, we would suggest to eliminate liptinite group macerals from this statement.	Thank you for the comment. The suggestion was incorporated and instead of liptinite, it only refers to inertinites and semi-inertinites as classified by Sanei et al. 2024 to emphasise that the biochar does not undergo the initial humidification process where liptinites would form.	Minor adjustment
BCH	6.2	p. 81	207	Second paragraph. Line 10. Where it says "vitrinite". Although some of the structures observed in biochar may resemble some huminite/vitrinite group macerals, particularly in the case of pyrolysis-refuse material, the concept of the vitrinite group is not particularly applicable in the case of biochars, with the exception of "natural"chars, because of the fact that the vitrinite group only includes macerals formed via the process of humification and gelification, which happen at a very slow rate and involve the activity of microorganisms during the first stages of biomass degradation.	Thank you for the comment. The suggestion was incorporated and instead of vitrinite, it only refers to inertinites and semi-inertinites as classified by Sanei et al. 2024 to emphasise that the biochar does not undergo the initial humidification process where vitrinite would form.	Minor adjustment
BCH	6.2	p. 81	208	Second paragraph. Line 10. Where it says "macerals". The maceral group concept is not directly applicable in the microscopic study of biochar as is in the microscopic study of coal because of the fact that maceral groups are defined by their relative reflectance and must all occur in the same sample in order to determine and describe them. Individual maceral terms, such as fusinite and semi-fusinite, and perhaps funginite, and in some occasions telinite and telovitrinite may apply, but the	Thank you for the comment. This paragraph describes the maceral groups used in coal petrography in general, and does not yet refer to biochar applications per se. However, we have revised the text according to the comments, and added a footnote, but left the description of the submacerals within the inertinite group as an example, to show that the group consists of various components. This does not indicate that it would be necessary to determine the	Clarification

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				determination of the composition in terms of the three maceral groups is problematic.	composition in terms of the three maceral groups within a biochar sample.	
BCH	6.2	p. 81	209	Third paragraph. Line 1. Where it says "measurement of random reflectance", ISO 7404 is the standard for the petrographic analysis of coal. Part V is the standard that describes the method for the measurement of random reflectance of vitrinite.	Thank you for the comment. Part V has been added.	Minor adjustment
BCH	6.2	p. 81	210	Third paragraph. Line 1. Where it says "main method". Except for the maceral group concept proposed by Sanei et al., a different approach to composition-based models is suggested by Drobniak et al, where the char morphotype classification is adopted. According to that, the morphotypes are distinguished into the broad categories of solid, networks and spheres based on their shape and visible porosity and further subdivided into sub-morphotypes based on wall-thickness and pore shape. We would suggest to make a brief mention to the morphotype concept as well, which, in our opinion is more appropriate to describe the petrographic composition of a biochar sample than the maceral concept.	We agree that morphotype concept is also valuable to describe the petrographic composition of a biochar sample. We have added a footnote defining it in more detail.	Minor adjustment
BCH	6.2	p. 81	211	Third paragraph. Line 4. Where it says "applications". Please list part V. Method for determining the random reflectance of vitrinite, separately.	Thank you for the comment. The suggestion was incorporated.	Clarification
BCH	6.2	p. 81	212	Starting from the end of the page, line 5. There is a typo. It says "reflance", it should say "reflectance"	Thank you for the comment. The typo has been corrected.	Clarification
BCH	6.2	p. 82	213	Paragraph starting with "Recent works (Sanei et al., 2024). Line 2. Where it mentions "aromaticity", it should say "condensed aromaticity".	Thank you for the comment. The suggestion was incorporated.	Clarification
BCH	6.2	p. 82	214	Paragraph starting with "Recent works...". Line 6. Where it says "semi-inertinite". Semi-inertinite is not an established term. We would suggest to replace with semi-fusinite, which is part of the inertinite group macerals.	Thank you for the comment. The text has been revised and edited for clarity. As semi-inertinite has been used in recent studies, we have clarified the meaning of the terms in an earlier paragraph.	Clarification
BCH	6.2	p. 82	215	Paragraph starting with "Recent works (Sanei et al., 2024). Where it says "maceral composition of biochar". The maceral group concept is problematic when applied to the petrographic study of biochar. Certain maceral terms, fusinite, semi-fusinite, funginite, can be used but not in the context of vitrinite, liptinite, inertinite groups. We suggest to replace the term maceral with "petrographic components".	Thank you for the comment. We have revised the text and used petrographic components where possible. However, in certain cases, the term maceral is still used in the text when referring individual macerals within a specific maceral group, for example.	Clarification
BCH	6.2	p. 82	216	Paragraph starting with "Recent works..". Line 12. where it says "inertinite" and "semi-inertinite", please replace with fusinite and semi-fusinite, respectively.	Thank you for the comment. The suggestion was partially incorporated in this paragraph. When citing an article using the terms inertinite and semi-inertinite, we have decided to keep their wording.	Clarification
BCH	6.2	p. 82	217	Following paragraph. Where it says "Puro.earth highlights the importance of not only measuring one maceral (inertinite), but rather the complete	Thank you for the comment. The suggestion was incorporated.	Clarification

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				maceral composition". The maceral group concept is problematic when applied to the petrographic study of biochar. Certain maceral terms, fusinite, semi-fusinite, funginite, can be used but not in the context of vitrinite, liptinite, inertinite groups. We suggest to replace the term maceral with "petrographic components".		
BCH	6.2	p. 82	218	Where it says "(volumetric requires more measurement points than average", please keep in mind that volumetric analysis requires a different approach (point counting) than just averaging the clusters of reflectance values obtained during random reflectance measurement. Random reflectance clusters have the inherent bias of the selection of measurable points by the analyst and will, in most occasions, result in a fusinite content higher than that actually contained in a sample. A combination of point counting and random reflectance measurement at the same time is suggested as the optimal approach, although this is more time-demanding than the random reflectance analysis.	Thank you for the comment. This has been further clarified in a footnote.	Clarification
BCH	6.2	p. 82	219	End of that paragraph, where it says "... other classifications of the degree of carbonization". The sentence is probably incomplete. Please add the missing verb, e.g., "must be reported"?	Thank you for the comment. The suggestion was incorporated.	Clarification
BCH	6.2	p. 82	221	Where it says "2000". The number of points counted for the determination of the volume fractions of the different components depends on how quickly the 500 mark is reached. According to the standard, 500 points on organic-based components are required. The number of pores, mineral content and grain density on the specimen are factors determining the actual number of points that need to be scanned in order to obtain 500 counts on organic matter	Thank you for the comment. The text was edited accordingly.	Minor adjustment
BCH	6.2	p. 82	222	Where it says "500". In coal samples, 100 measurements are required as per the ISO standard. The 500 mark is suggested for the determination of random reflectance in biochar samples by Sanei et al. Our convergence test suggests that the mean random reflectance is achieved between 250 and 300 points, depending on the heterogeneity of the sample. We would suggest to rephrase this part to "which is suggested to be achieved between 300-500 measurements".	Thank you for the comment. The text was edited accordingly.	Minor adjustment
BCH	6.2	p. 82.	220	Section 6.2.5. The maceral group concept is problematic when applied to the petrographic study of biochar. Certain maceral terms, fusinite, semi-fusinite, funginite, can be used"but not in the context of vitrinite, liptinite, inertinite groups. We suggest to replace the term maceral with "petrographic components".	Thank you for the comment. The suggestion was incorporated.	Minor adjustment
BCH	6.2	p.76-77	260	Carbon storage losses : We have a strong preference with the "random reflectance Ro based model" approach since the measure tackle in	Please see reply to comment #261, from the same commenter: Please see rules at the end of section 6.2 and the Remark box.	No change

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				absolute the content of the fraction of carbon that respond to a very long-lived stability configuration. Moreover, and it is scientifically proven and demonstrated in practice that this measurement is fully assessed to the temperature of the pyrolytic processing. Knowing that in a qualified production plant, this process parameter is monitored and registered continuously and on real-time, it's a perfect proxy to have a continuous estimation of Ro result (after a prior calibration) for any tons of biochar which are produced. This approach provides a valuable monitoring aiming at combining essential market and stakeholder expectations such as continuous measurement (no fraud), absolute quantification of stable carbon (no discussion), easiness and cheapness to implement for producer whatever their production capacity (after prior calibration), accuracy of the measure ... As a large producer of biochar with a strong willing to build on robust RMV, we find a lot of advantages to promote Random Reflectance as a very good industry pratice. Our first plant in [[LOCATION]] will be audited this summer 25 under the current methodology standard : nevertheless, we can offer you to use our business case by applying this new approach (Ro measurement instead of H/C) in a way that it will allow you and the biochar community at large to have an actual and proven feedback of potential benefits of this new approach. This should reassure your team that Inertinite and Semi-inertinite measurement through Ro analysis could become a serious game changer within carbon removal certification field, notably in term of traceability.	These clearly indicate that random reflectance measurements can be reported and verified, albeit not yet used in quantification. Puro is committed to contribute to scientific advances and is open to collaboration with on those matters.	
BCH	6.2	p.78	390	In paragraph Future perspectives encouraged: "Since this requires collection of new data, Puro.Earth invites suppliers to contribute to this effort by reporting additional characterisation of their biochars" Can you identify specific parameters or test methods for the properties Puro would like to collect additional data on? Would a project receive any financial support to pay for these tests if they were willing to collect the data for Puro? Mainly volumetric random reflectance measurements?	This is tackled in rules 6.2.5 and 6.2.6 already. Cross-reference to these rules was added in the paragraph. No financial compensation would be provided for delivering such data; as the purpose of delivering the data is also to get it verified during the scheduled audits, for potential future retroactive rule changes.	Clarification
BCH	6.3	6.3.1	354	It is important to highlight that if no action is taken by a biomass power plant, the ash, which typically contains only a minor fraction of carbon, is classified as a "waste material" and is not eligible for beneficial use. Without further intervention, this ash must be disposed of offering no recognized carbon storage benefit. Utilizing ash for any beneficial purpose is not automatic; it requires formal regulatory approval through state-specific beneficial use programs, and ongoing compliance testing	We agree with the commenter that diverting ash from landfill is generally valuable; however, from an additionality perspective (both financial and carbon), the distinction is necessary, to ensure high-quality carbon removal credits.	No change

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				to meet strict quality standards, and that takes time and money. Therefore, in the baseline scenario, ash should be considered a waste stream with negligible carbon storage contribution. This distinction is critical to avoid unfairly penalizing retrofit projects that are actively transforming a waste material into a durable carbon sink through biochar production.		
BCH	6.3	6.3.1	355	[6.3.1.a] Requiring an estimate of char production per year over the past five years is often unrealistic for existing biomass power plants. Historically, these facilities have focused operationally on electricity generation and regulatory compliance, not on quantifying char or ash carbon outputs. Systematic recording of char production was not standard practice. We recommend permitting the use of best available data or engineering proxies where direct five-year records are unavailable. For example, facilities should be allowed to conduct short-term sampling programs, or reference literature-based char yield factors calibrated to plant type and feedstock characteristics. It should also be clarified that engineering back-calculations, using ash production volumes and typical carbon content assumptions, are acceptable if grounded in conservative, documented methods. This approach preserves methodological rigor while acknowledging the operational realities of retrofit facilities, avoiding unnecessary project disqualification without compromising the integrity of carbon accounting.	We reckon the challenges put forward by the commenter, and highlight that the term "estimate" is used to highlight that it does not need to be actual measurements, but can also be inferred via other methods (i.e. best available data or engineering proxies). Hence, all the methods and options presented by the commenter are already encapsulated in the term "estimate".	No change
BCH	6.3	6.3.1	356	[6.3.1.b] Biomass power plants have historically focused on energy production and regulatory compliance, not on tracking the long-term fate of residual char or ash. In practice, most char is disposed of in regulated landfills or ponds, treated as waste with no further monitoring. It is also important to recognize that biomass power plants in the United States have experienced closures and operational interruptions, despite being vital infrastructure for forest management and wildfire risk reduction. The USDA Forest Service has explicitly recognized biomass facilities as key partners in reducing forest fuel loads, mitigating wildfire risks, and promoting forest health by removing diseased or excess biomass (USDA Forest Service, The Role of Biomass in America's Forests). If retrofit eligibility becomes too burdensome, it risks accelerating biomass plant closures, undermining not only an important carbon removal pathway but also broader climate resilience and forest management goals. We strongly recommend that the methodology balance rigor with practical feasibility to avoid unintended harm.	Subrule 6.3.1.b is about the fate of char prior to retrofit. This is usually known for all biomass power plants. The rule is not about "long-term fate" but the immediate, first fate of the material.	No change

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BCH	6.3	6.3.1	357	[6.3.1.c] Obtaining five separate monthly samples may delay retrofits, especially for plants with limited or seasonal operations. We recommend allowing 2–3 consistent samples, or the use of proxy data if available, to demonstrate persistence without imposing unnecessary burdens. Power plants generally operate under stable conditions.	The rule was changed to 3 analysis, here, and also in Charcoal Repurpose for consistency	Minor adjustment
BCH	6.3	6.3.1 c.	131	Needing at least 5 months of anaylses before the retrofit could greatly extend the time to commence biochar production. This seems like an unneccessary amount of time where carbon could be sequestered.	See reply to comment #357.	Minor adjustment
BCH	6.3	6.3.2	358	We recognize the importance of robust baseline removal calculations to ensure environmental integrity and uphold additionality. Establishing what carbon would have been stored without the retrofit is an essential safeguard. However, we caution that many existing biomass power plants, particularly retrofits, may not have sufficient historical data on char or ash carbon outputs. These facilities were originally designed for energy production, not carbon storage accounting. It is important to keep in mind that in the baseline scenario, the ash is generally treated as a waste material, not a valued carbon storage product. To maintain both rigor and practicality, we recommend allowing an alternate compliance pathway: where precise historical calculations are not feasible, projects should be permitted to apply a conservative default deduction. Introducing a de minimis threshold (e.g., if baseline carbon storage represents less than 5% of biomass carbon input) would also prevent the unnecessary exclusion of good projects while safeguarding environmental credibility.	We believe the suggestion is already permitted by the current rules, as 6.3.1.a refers to an "estimation" rather than "quantification" or "measurement". Various estimation approaches can be accepted, provided they are conservative.	No change
BCH	6.3	6.3.2	393	Equation for Cbaseline: The Qdiverted parameter seems slightly simplified. If the retrofit facility has made adjustments or upgrades to increase biochar production / efficiency, it is possible (or likely) that the Qdiverted in the new scenario would not even have been possible in the older scenario. I.e. that the hourly biomass consumption may fundamentally change based on the technological improvements. Would it not be better to consider it in terms of hourly operations rather than based on biomass production? Otherwise, projects that have increased their biomass intake in order to sequester additional carbon are more penalized for their improvements (which would not have happened if they weren't trying to retrofit).	There was a typo here; the equation should read Q_biomass. Thank you for the careful reading of those equations. We agree with the commenter that what is important is the operating time of the facility in relation to the baseline operations, for which biomass consumption is one possible operational proxy. Hourly operations may also have similar limitations e.g. when operations are not "at full load". The base rule 6.3.2 remains related to Q_biomass, and reckon that it could be "capped" to a maximum value, acknowledging that retrofits with capacity expansion and increased operations should not be penalized excessively. This is why the suggested text allowed for deviations from the base equations as per rule 6.3.5 (alternative methods).	Clarification
BCH	6.3	p. 85	223	In the section under "Biomass removal from biomass long-term carbon storage". We wonder how the methodology considers the situation in which the feedstock was originally left on the field, as it is the case of	The Biomass Sourcing Criteria for in-field residues (category K) require sustainable harvesting of residues, e.g. leaving a significant share of residue in the soil to preserve carbon stocks.	No change

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				sugarcane straw (and not burned), and now used as feedstock for biochar. That straw could have been contributing to soil carbon. How is this taken into account in the C-baseline?		
BCH	6.3	p. 85, "Baseline removal from biomass long-term carbon storage"	495	Quote: [entire paragraph] Comment: Rationale: - Overall the paragraph is unclear and may need to be re-written for better understanding. - The last three sentences seem contradictory - We would suggest to differentiate between native and non-native trees	Thank you for your comment. We agree with the text being unclear and causing more confusion that clarity. This paragraph was there for information only, and we removed the paragraph for clarity.	Minor adjustment
BCH	7	7.1	6	Puro should give guidance on the use of electricity emission factors datasets/emission factors, in particular if green certificates (RECs, GoOs, PPAs, etc) shall be allowed or not, as it is typically not the actual electricity delivered to the operator, but uses a mass balance system. If the methodology allows for guarantees of origins (GoOs) in the LCA, then the methodology needs to state that the electricity residual mix shall be used for non-GoO holders and not the market mix (production mix). If this is not done, renewable energy will to a large extent be double counted in the calculations done by the CO2 removal suppliers.	Thank you for your comment. We understand that this is the new approach for EPDs when Renewable European GOO credits are used there. EPD rules are well suited for products, but we feel that they are not good fit for energy systems and processes like biochar. We have aligned Puro Standard approach to RECs and GOO to the hydrogen rules of EU and US requiring temporal, spatial and volumetric matching.	Minor adjustment
BCH	7	7.1	7	Puro should give guidance on the mass balance approach for quantification of the project emissions, in particular if it is allowed in the methodology. (The mass balance appraoch being virtually attributing something within a product system, such as "virtually collecting" all recycled steel in one "green product", even if in reality, the average recycled content in the total steel output is e.g., 10%). More info on https://www.iscc-system.org/news/mass-balance-explained/ My recommendation is to only allow robust electricity cancellation systems for renewable electricity, such as member states of AIB (https://www.aib-net.org/) or similar. As supporting text, this is ECO Platforms (an organisation that consists of EPD programme operators) stance on mass balance, in summary it does not allow it until further clarification from CEN. https://www.eco-platform.org/files/download/statements/ECO_2023.12.12_revised-Statement_MBA%2BGOOs.pdf	This is not allowed in the current rules.	No change

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BCH	7.1	7.1.2	291	Specific Feedback: Rule 7.1.2 – Digital LCA Model and dMRV Tools We support the intent of Rule 7.1.2 in requiring that LCA models are transparent, verifiable, and accessible for audit purposes. Digitalization can bring important improvements in data quality and reporting efficiency. However, we would like to raise the following points: Definition of Transparency: Clear minimum criteria should be provided for what constitutes "equal or greater transparency" compared to the Puro.earth spreadsheet model. This could include requirements such as access to: - Full datasets used and generated; - Calculation formulas and emission factor sources; - Audit trails of data inputs and modifications. Cost and Vendor Lock-In: Care should be taken to ensure that projects are not effectively forced into using costly third-party dMRV platforms if simpler spreadsheet-based models suffice. Maintaining an option for self-managed, auditable models (such as the Puro spreadsheet) is important to preserve accessibility and affordability, particularly for small and medium-sized projects. dMRV Platform Approval Process: If dMRV platforms are to be used, it would be helpful for Puro.earth to publish a list of pre-approved platforms or to clearly define the approval pathway, so that developers have clarity and certainty before investing in particular tools. We appreciate the push toward digital innovation but encourage that flexibility and cost-consciousness remain embedded in the system design.	Thank you for your comment. Note also that subrule 7.1.2b only references dMRV platforms as one example of non-spreadsheet tools and that supplier can also develop their own non-spreadsheet tools. We do not to force any project to commit to any particular dMRV solutions. The specifications on dMRV solutions are outside of the scope of this Methodology. The request to clarify what is a similar level of transparency for verifications ("- Full datasets used and generated; - Calculation formulas and emission factor sources; - Audit trails of data inputs and modifications.) is deemed to be already covered rule 7.1.2. with the terms "complete and transparent verification of the calculations, from input activity data to selection of emission factors" as well as "and that data and model structure can be inspected and extracted by a third party".	No change
BCH	7.1	7.1.2	410	The new methodology clearly encourages the use of dMRV systems, especially with the added volume of information. However, for retrofit power plants which are still in operation as biomass power plants, the data security of the existing softwares is insufficient with the requirements they have, as any potential leaks could lead to catastrophic	Thank you for your comment. While we support the development of dMRV capabilities, we do not favour any particular solution. We welcome the presentation of data and evidence in any way that meets our requirements in a robust and transparent way.	No change

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				consequences. The use of such softwares can even be forbidden by national security requirements. How will Puro handle these situations?		
BCH	7.1	7.1.3	394	Will a list of information to be included in the LCA model description document be detailed if this is to replace the typical LCA report as used in the past? A template or general format would help standardize this process and facilitate auditor verification	Thank you for your comment. We will provide further guidance in supporting documentation applicable to all our methodologies.	No change
BCH	7.1	7.1.5	143	Move 'Remark' from the end of 7.1.5 to the end of 7.1.1. It informs the rest of the section and is an important point.	Thank you for your suggestion. During final layout for publication, we will place the "remarks box" in the best possible way to enhance readability.	No change
BCH	7.1	7.1.7.	147	This section is less prescriptive and more suggestive of the data requirements needed to complete the verification of LCA emissions. This may present challenges for CO2 Removal Supplier and verifiers if there is disagreement on the required documentation to verify to LCA.	Thank you for your comment. Further information and guidance are provided in section 9 (Monitoring Requirements) around the scope of the Monitoring Plan, and in section 10 (Measuring Requirements) on data collection, uncertainty management, and other requirements to facilitate the verification of LCA calculations.	No change
BCH	7.1	7.1.9	98	GWP 20 again.	Thank you for your comment. Please see our response to comment #67.	No change
BCH	7.1	7.1.10	8	If Puro will allow emission factors (pre-calculated LCIA results, in contrast to only allowing datasets from commercial databases together with the GWP 100a method) then it is very important that those emission factors have been developed using the same methdology as required by the Puro biochar standard. Examples of this are: - Factors does not contain recycling credits, - Do not include any offsetting or other credits beyound the system boundary, - Include all emissions from the initial extraction of resources, - Are geographically approapriate. - Inclusion of infrastructure (e.g., wind turbines for windpower) - Use the GWP 100a method (I agree that the 6th assessment report should not be mandatory, as it has very similar Characterization Factors for GHGs compared to the 5th assessment report, as you mention on page 87)	Thank you. We have incorporated the feedback on the type of emission factors, which was aligned with the intent of the methodology.	Minor adjustment
BCH	7.1	7.1.13	153	The standard should implement rigorous controls on co-product emission allocation. There are documented instances within the biochar industry where emissions have been disproportionately allocated to low-value co-products to artificially enhance carbon sequestration claims. We recommend either restricting allocation methodologies to	Thank you for the comments. While no changes were made to this rule based on this comment, we confirm that only energy-based allocation between biochar and its co-products is permitted, consistent with Edition 2022, as stated in section 7.5. Use of allocation must be documented and verifiable, as stated in section 7.5. From experience, the impact of allocation on CORC is	Minor adjustment

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				documented economic value or eliminating co-product allocation entirely.	typically marginal when supply chain emissions are low (<5%). Economic allocation would require price disclosures that are often sensitive, uncertain, or unavailable in advance; and potentially counter-effective when biochar is distributed for free. Puro's approach is also aligned with other frameworks, e.g. EU CRCF, relying on energy allocation. The energy allocation approach also provides an incentive to valorise the carbonization co-products (syngas and oil), without including in the allocation wood vinegar. We note also that energy allocation here, is also correlated to carbon content, hence it's relevance in the context of removals.	
BCH	7.1/7.5	7.1.13/7.5.2	27	The approach to co-product allocation could be adjusted to more closely align with economic realities of the facilities. While this would be contrary to ISO 14044's suggested co-product allocation approach, recommending economic over physical allocation could provide a distribution of emissions that more closely aligns with the industrial reality of the facility. For example, there will likely be much more value for the biochar product and the carbon removal product as opposed to bio-oil, syngas, and other co-products. Using something like energy allocation could result in allocating too much of the emissions to these co-products that are often ancillary to the overall biochar process. If the reason for running the facility is generally generating biochar and CORCs, then economic allocation seems to do a better job at reflecting this.	Thank you for your comment. Please see our response to comment #153.	No change
BCH	7.1	7.1.14	9	It should be mentioned that in the cut-off approach, exclusion of environmental burdens are only applied to post-consumer secondary material, while pre-consumer secondary material typically has emissions allocated to it (such as industrial steel or aluminium scrap)	Thank you for your comment. We have incorporated your suggestion in the rule.	Clarification
BCH	7.1	7.1.14	10	It can be mentioned that the "supply, transformation and handling of the secondary resources " shall start at the End-of-Waste point for the previous product system, which e.g., is stated in the EU Article 6 (1) and (2) of the Waste Framework Directive: -the substance or object is commonly used for specific purposes -there is an existing market or demand for the substance or object -the use is lawful (substance or object fulfils the technical requirements for the specific purposes and meets the existing legislation and standards applicable to products) -the use will not lead to overall adverse environmental or human health impacts	Thank you for your comment. We have incorporated your suggestion in the rule.	Clarification

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BCH	7.2	7.2.5	269	LCA does not consider transport emissions of biochar in mixed products (<50% biochar), nor if there a limit to how far these products can travel. It is possible that these products could therefore travel long distances and result in non-negligible carbon impacts over the entire project/supply chain. It is an oversight to not limit transport emissions of mixed products somehow, or include some factor for untraced transport.	Thank you for your comment. As per the methodology's principles, emissions occurring beyond the point of secure carbon storage are not attributed to the removal claim, but to the other functions of the biochar. This applies in a similar manner to biochar mixed into products, as well as for eligible situations of cascading use (e.g. if biochar-containing concrete is in a building for 50 years, and then sent for recycling, those emissions are not either attributed to the CORCs). This approach aims to ensure a clear separation between the removal function and subsequent product-related functions, while also supporting the development of biochar-based materials or products. We recognize that very long-distance or international transport of biochar-containing products may raise concerns, but current market dynamics suggest such cases are not the norm. For pure biochar, transport emissions are fully accounted for.	No change
BCH	7.3	7.3.8	99	Should use a factor of 1.5 to account for half-empty return trips as well.	Thank you for your comment. We have clarified that empty return trips or backhaul need to be accounted for, when they are applicable i.e. attributable to the activity. We have clarified different approaches on how to do this, the 1.5 multiplier being one possible approach.	Minor adjustment
BCH	7.3	7.3.8	132	Does transport need to be calculated one-way or both? Please clarify here.	Thank you for your comment. We have clarified that empty return trips or backhaul need to be accounted for, when they are applicable i.e. attributable to the activity. We have clarified different approaches on how to do this, the 1.5 multiplier being one possible approach.	Minor adjustment
BCH	7.4	7.4.3	12	It currently says "if land use has been changed for the construction of the Production Facility or any supporting infrastructure necessary for the operation of the carbon removal activity." Should it not also included dLUC from biomass sourcing of grown feedstock if it's under operational control of the CO2 removal supplier?	Thank you for the comment. In principle, you're right—land use change from biomass production can be relevant. However, such risks are addressed separately through biomass eligibility criteria, which require the absence of negative dLUC. The referenced rule is specific to infrastructure-related land use change.	No change
BCH	7.4	7.4.2	226	Emissions from Modular and Mobile Biochar Plants We recommend that the methodology include specific guidance on accounting for emissions associated with the commissioning, decommissioning, and transportation of modular and mobile biochar production units. Justification: Projects utilizing mobile or containerized pyrolysis units that are relocated based on biomass availability need clear instructions on how to incorporate these emissions into their Life Cycle Assessment (LCA).	Thank you for your comment. Rule 7.3.12 addresses the transportation (relocation) emissions associated with mobile biochar facilities as part of Project Emissions. Furthermore, we expanded the guidance on transport emissions calculation in rule 7.4.3.	No change

Document	Section	Rule	ID	Comment	Reply	Action
				Guidance should address: • Whether such emissions fall under project emissions (Eproject) or indirect emissions (Eindirect) • Methods for calculating emissions from transportation and setup activities • Allocation of emissions when units serve multiple project sites Providing detailed instructions will ensure consistency and accuracy in LCA calculations across projects employing mobile biochar production technologies.		
BCH	7.4	7.4.3	11	Puro should include a definition of the term "pre-existing facility", as you can get around the embodied emissions in this case by having a "middleman" to own the facility initially and then resell it to the CO2 removal supplier	Thank you for your comment. Have adjusted the rule to reflect this and avoid a by-pass in accounting those emissions.	Minor adjustment
BCH	7.4	7.4.3	32	More guidance should be required about the estimation or lack thereof of embodied emissions from used/recycled equipment. Similar to the methodology's treatment of waste feedstocks, used/recycled equipment should enjoy a cut-off approach to emissions estimation. Emissions estimates in such cases should only focus on the transportation, installation, upgrading, and decommissioning of such equipment but not initial manufacturing.	Thank you for your comment. Please see the response to comment #11 that provides a different perspective. We have clarified the rule accordingly.	Minor adjustment
BCH	7.4	7.4.3	33	Economic input–output proxy factors are exceptionally useful for estimating what are often negligible CapEx-related emissions, but they may not be available in every country. The guidance should be expanded to provide practitioners more judgment in applying these factors even across national borders. https://catalog.data.gov/dataset/supply-chain-greenhouse-gas-emission-factors-v1-2-by-naics-6 could be provided as an example as well.	Thank you. We have relaxed 7.4.3.b to allow for use of these economic factors as proxy for other countries, if conservative (e.g. typically both countries have similar energy mixes). We also plan to provide additional guidance for LCAs.	Minor adjustment
BCH	7.4	7.4.5	116	what is the rationale for amortising embedded emissions within the first 5 years of operation or less? This will lead to much smaller issuances at the beginnings of operations. Crucially, this limits the support of CORCs in covering initial high costs and supporting the scale up of the operation. This is at odds with the reasons to generate CORCs. Proposed change: Amoritisation over the lifetime of the project instead (e.g. 25 years).	Please note that the crediting period has been revised to 10 years and now also serves as the amortization period for embodied emissions. The rationale for requiring amortization over the first crediting period—or sooner, if the project lifetime is shorter—is to ensure a consistent treatment of embodied emissions across projects, particularly given the uncertainty around actual project durations. Additionally, CORC buyers have expressed a clear preference for faster amortization to mitigate the risk of unamortized emissions in the event of project interruption. This is also reflected in changes to Rule 7.4.5, which now allows for upfront amortization and treats unamortized emissions as reversals.	Minor adjustment

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BCH	7.4	7.4.5	163	7.4.5. Embodied emissions shall be amortized Q: do you mean that it should be amortized using the amortized value as for financial calculation?	Thank you for your comment. The amortisation of embodied emissions follows the recommended practices in the GHG Protocols accounting guidelines. Specifically, amortisation is equivalent to the concept of "linear discounting approach".	No change
BCH	7.5	7.5.2	13	For allocation purposes, EN 15804+A2 gives guidance that if the mass-based price differs more than 25% between the outputs, then economic allocation shall be applied. I think this is appropriate for Puro to apply as well, for e.g., outputs of agricultural residues that still has a price, but much lower compared to the main grown product (where mass allocation would be unfair to the residue user in my opinion).	We have added reference to EN15804+A2 in rule 7.1.14, for allocation situations not foreseen or required to be handled in a given manner by the methodology. Here for carbonization co-products, we maintain requirement for energy allocation. For other stages, in particular biomass sourcing, other approaches can be used, albeit not required by the methodology.	Minor adjustment
BCH	7.5	7.5.2	26	The approach to co-product allocation could be adjusted to provide practitioners with a more conservative option. Co-product guidance should also include an optional approach of allocating 100% of the process's emissions to the biochar/carbon removal product. This would be more compatible with net zero as then co-products wouldn't have allocated emissions that might be hard to address otherwise.	The rules are flexible to this situation. A supplier can decide to attribute all emissions to its biochar carbon removal. See also reply to comment #13 and #153.	Clarification
BCH	7.6	7.6. introduction paragraph	496	Quote: "[...] Here, this threshold for project emissions is set to 5%, which corresponds to less than 1% of the gross removal achieved in typical biochar projects." Comment: Rationale: - Unclear what is the reference of the percentage - 5% seems inconsistent with the 0.5% mentioned lower in rule 7.6.1	See reply to comment #14.	Major change
BCH	7.6	7.6.2	14	Using cut-off based on LCIA results (estimated project emissions) is to me a bit counter-intuitive for cut-offs, as you must still spend time and effort to quantify the flows to prove that you can exclude them. I recommend to use the same approach as EN 15804+A2, adjusting the level from 1% to 5%, which would become: The following procedure shall be followed for the exclusion of inputs and outputs: — All inputs and outputs to a (unit) process shall be included in the calculation, for which data are available. Data gaps may be filled by conservative assumptions with average or generic data. Any assumptions for such choices shall be documented; — In case of insufficient input data or data gaps for a unit process, the cut-off criteria shall be 5 % of renewable and non-renewable primary energy usage and 5 % of the total mass input of that unit process. — Particular care should be taken to include material and energy flows known to have the potential to cause significant global warming	Thank you for the feedback. We have implemented a similar approach, based on the suggestion.	Major change

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				potential. Conservative assumptions in combination with plausibility considerations and expert judgement can be used to demonstrate compliance with these criteria.		
BCH	7.6	7.6.2	15	I think the 10 individual activities rule should be removed, as it punishes those that are thorough in their LCI data collection. When using the 5% energy/mass rule as suggested above, it should not matter.	This has been removed as per suggestion and other suggestions.	Major change
BCH	7.6	7.6.2	100	Maybe additionally add a buffer for the cut-off tons here?	Thank you for your comment. At this point, we will not require a buffer to address measurement uncertainty associated with this cut-off criteria.	No change
BCH	7.6	7.6.3	31	Many LCA practitioners realistically do not estimate certain emissions drivers known to be negligible before excluding them via cut-off criteria. Expand the list in 7.6.3 of items not to include in the LCA to cover non-recurring/R&D activities, corporate-level emissions, office supplies, basic cleaning supplies, and other negligible emissions drivers for such facilities.	Thank you for your comment. We incorporated your suggestion into the rule	Minor adjustment
BCH	7.6.3.	7.6.3.	268	Not considering MRV emissions and business travel in the LCA and carbon crediting calculations is counterintuitive to the spirit of carbon removals and the VCM. Given these credits will be used to offset aspects such as business travel for other businesses. A alternative solution could be to require biochar projects to be net-zero.	Thank you for your comment. While we agree on accounting for all project emissions, we want to strike a balance between effort and precision in the accounting process, and hence the need for cut-off criteria. Further, the attribution of those emissions may not be as straightforward as it seems: e.g. within a company with multiple facilities or services, travel emissions are not necessarily related to the removal activity of a given facility. Likewise, these exclusions are common in LCA, as one could otherwise consider that the food provided to workers and the housing needs would also need to be accounted for.	No change
BCH	8	8	30	Only negative leakage effects are considered. While positive climate-related leakage effects, such as CH4 emissions avoidance or an uptake in soil carbon, should most certainly not be accounted for as CORCs, users should be able to separately report such consequences as co-benefits of their process.	Thank you for your comment. Puro encourages reporting additional benefits through other means, like SDG Reporting.	No change
BCH	8	8.3	35	Section 8 on leakage/indirect emissions estimation is fairly complicated and may be difficult to decipher. The difference between the different Level 2 contributors is also not entirely clear. Additional clarification of this section and distinction between the types of leakage would be helpful.	Thank you for your comment. We have revised the entire chapter based on the feedback from you and other stakeholders.	Major change
BCH	8.1	0,3340625	359	The language currently used, particularly "competing with other recognized uses", is vague and risks mischaracterizing biomass residue feedstocks. In retrofit biomass power projects, the feedstock (e.g., forest	Section 8 of the draft methodology received numerous comments (about 40), highlighting that the text was either confusing or not suitable for many local situations or difficult to implement. As a	Major change

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				or mill residues) is indeed used for energy today, but often only because it was otherwise a waste material with no viable market. Treating this as "competing use" could incorrectly imply that retrofitting diverts valuable biomass, when in fact it upgrades a low-value or disposal-bound resource. Many biomass plants process residues that would otherwise be left to decompose, burned openly, or become wildfire fuel. Labeling such usage as "competing" misrepresents the environmental and economic baseline and could set an unnecessarily high burden for project eligibility. We recommend that "competing use" be explicitly defined as a significant, demonstrable alternate use of the biomass beyond its baseline fate. In other words, indirect effects should only be considered when a project is reasonably likely to cause material displacement of critical ecosystem services or large-scale industrial feedstocks, not when using residues or wastes. Suggested revision to the methodology "The CO_2 Removal Supplier shall identify which of the following indirect emission sources are applicable, based on the project's context and scale. An indirect source is considered applicable only if the project's feedstock or operations are reasonably likely to cause significant emissions or loss of carbon storage outside the project boundary." This would avoid forcing every project to prove a negative ("no indirect impacts") and instead focus on material, meaningful risks. As a safeguard, the methodology could require a brief justification for each category assessed (e.g., "Feedstock X is sawmill waste with no significant market value; thus, market-driven iLUC is not expected").	result, and to improve implementability, we have decided to re-write Section 8, based on an earlier draft and similar to our other methodology Geologically Stored Carbon, where similar rules have been presented and for which an easy-to-use template has already been provided. This said, we have also added leakage mitigation options that are specific to biochar projects.	
BCH	8.1	0,33407407	360	The clause as currently written does not distinguish between new-build projects involving significant new land disturbance and retrofit projects occurring entirely within existing facilities. Requiring a full EIA-type analysis for every project, even simple retrofits at existing biomass plants, is disproportionate. Most retrofit projects make use of pre-existing infrastructure (e.g., fuel yards, roads, drainage systems), where no new impacts on local hydrology, soil types, or land cover would occur. As written, the rule risks imposing unnecessary procedural burdens on low-impact projects, diverting resources without meaningfully improving environmental outcomes. We recommend clarifying that if a project is a retrofit using existing disturbed areas and does not involve significant new land clearing or major construction works, then the iLUC assessment can be exempted. A short justification (e.g., "No new land disturbance beyond existing facility footprint") should suffice to demonstrate that no material indirect ecological impacts are expected.	See reply to comment #359 above (joint reply to all comments on section 8).	Major change

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BCH	8.1	0,33408565	361	We caution that this clause risks placing a quasi-analytical, quasi-predictive burden on the project, essentially requiring it to forecast hypothetical market responses. Without clear, quantitative benchmarks or default assumptions, different auditors could reach inconsistent conclusions based on the same facts, undermining fairness and predictability. In the U.S., biomass power plants typically rely on low-value wood residues such as forest slash, sawmill waste, and non-merchantable trees, materials that have little or no active competing markets. Biomass facilities create a "market of last resort" for this wood, which otherwise would be left to decay or burned without energy recovery. We recommend that Section 8.1.5 explicitly distinguish true market displacement risks from benign, residue-based situations. The term “competing use” should be refined to mean significant competing use i.e. the biomass feedstock must already be actively used at significant scale in other markets. Furthermore, evaluations should be limited geographically to the relevant local supply shed, not global markets. It would be inappropriate and overly burdensome to analyze international market dynamics for a regional forest residue utilization project.	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.1	0,3341088	362	We recommend refining the language for category B2 to read: "Biomass residues with no current use (dumped, left to decay, or openly burned without energy recovery); this is not a competing use."	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.1	0,3341088	363	Removing the word “potentially” would provide necessary clarity — whether a material is waste or not should be decided based on clear conditions, not left ambiguous. Section 8.1.9 already introduces surplus tests to validate this status, so initial classification should be firm. In U.S. practice, the biomass used by power plants, forest residues, slash piles, mill waste , typically fits this definition: it is low-value material otherwise destined for decay or uncontrolled burning, with no viable market use. Biomass facilities provide a critical environmental service by creating a use for these residues, reducing wildfire risks and improving forest health. Keeping B2 decisively "not a competing use" avoids penalizing waste-based projects and ensures the methodology reflects actual field conditions.	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.1	0,3341088	364	Category B3 risks misclassifying waste biomass used for energy at minimal or negative value as a "competing use." In the U.S., residues like forest slash and mill waste often enter biomass plants not because they have valuable alternative uses, but because disposal via combustion is the most environmentally sound option. Treating such low-value energy	See reply to comment #359 above (joint reply to all comments on section 8).	Major change

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				uses as competing would wrongly penalize facilities that are performing a necessary waste management and forest stewardship role. We recommend clarifying that only feedstocks with significant economic value in existing energy or non-energy markets should be considered under B3 as a "competing use." Residual uses purely for waste disposal should be excluded to align the methodology with actual industry practices and environmental objectives.		
BCH	8.1	0,33413194	365	We recommend revising the surplus test to introduce more flexibility. Requiring a strict 25% surplus risks unfairly penalizing projects using genuine waste wood, particularly in rural U.S. regions where residues are efficiently collected but still have no meaningful competing market. For example, sawmill residues might be largely used, yet leftover tops, branches, or diseased wood are discarded — and under a rigid 25% test, this could mistakenly be treated as "competing." We suggest that a 25% surplus be kept as an indicative benchmark, but allow lower surpluses to qualify with supporting local evidence such as pricing data, forestry reports, or letters from local industry. This would reflect operational reality, avoid punishing real waste projects, and still protect environmental integrity.	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.1	0,33413194	396	"The CO2 removal supplier shall demonstrate that the competing use does not represent a significant source of indirect emissions by providing evidence that there is a surplus of biomass residue in the project region of at least 25% larger than the quantity of biomass residues which is utilized annually in the project region" --> What kind of format is Puro expecting to prove this? Understandable in theory, difficult in reality.	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.1	0,33414352	366	The current methodological framing assumes a level of measurement precision that is often not practical for many retrofit biomass power plants. Most existing plants, especially those processing heterogeneous or variable-moisture feedstocks, do not have direct weighing systems at the point of input. Instead, operators typically back-calculate feedstock input based on known outputs and conversion efficiencies, using continuous emissions monitoring systems, turbine performance data, and moisture-adjusted energy yields. This is the accepted way by EPA and other regulatory agencies in the US. This is the industry norm for regulatory and internal reporting. Requiring mass and energy balances “scaled to the same amount of input feedstock” imposes a burdensome and often unmeasurable standard, particularly for facilities without real-time weighing or flow systems. If the standard is to be implementable across retrofit contexts, it must allow output-based estimation methods,	See reply to comment #359 above (joint reply to all comments on section 8).	Major change

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				supported by engineering assumptions, manufacturer data, or historical averages. For example, operators could reasonably use recorded electricity output and historical heat rates to estimate biomass consumption, rather than being forced to install new feedstock flow meters. Similarly, for energy streams not metered (such as pyrolysis gas heat), sound engineering calculations or design specifications should be accepted. Moreover, it is crucial that normal operational variability be explicitly recognized in the mass and energy balance evaluation. Biomass plants are inherently subject to seasonal and operational fluctuations. The methodology should tolerate reasonable deviations between pre- and post-retrofit operations. We recommend introducing a de minimis threshold (e.g., changes under 5% of energy output are deemed negligible) to avoid penalizing projects for minor efficiency losses that do not materially undermine carbon removal outcomes. Small efficiency impacts are often unavoidable when prioritizing char production, and the climate benefit of creating a long-term carbon sink far outweighs such minor changes.		
BCH	8.1	0,33414352	367	[8.1.10.b] Clause B., on paper a retrofit might show a small drop in energy production per feedstock, but over a full year, normal operations stabilize, and total output remains consistent. Output variability is normal in biomass power plants due to variability in feedstock. To avoid over-penalizing projects for these non-material shifts, we recommend specifying that only significant changes, such as output reductions exceeding 10% compared to pre-retrofit averages, should trigger leakage accounting. This ensures real environmental risks are captured without unfairly disqualifying retrofits that preserve normal system performance. In practice, small apparent reductions in output can simply reflect normal operational variability in biomass plants, not real leakage. Minor changes are often due to seasonal feedstock moisture, load shifts, or process tuning, and can easily be offset by modest increases in feedstock use without affecting long-term output.	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.1	0,33414352	395	Unsure what the competing use of renewable energy or biomaterial output signifies. This is also expanded upon in 8.2.5 This is to consider additional emissions if previously exported renewable energy generated by the facility is no longer available? Emissions are to be considered if this energy source is replaced by non-renewable energy sources	See reply to comment #359 above (joint reply to all comments on section 8).	Major change

Document	Section	Rule	ID	Comment	Reply	Action
BCH	8.1	0,33415509	368	This clause should be clarified to recognize that, for biomass power plants, the material being retrofitted, ash, is typically a regulated waste, not an economic product. In most cases, ash is landfilled or managed under environmental compliance requirements, with no market value. Therefore, the retrofit to biochar is not diverting an existing commercial stream. We suggest clarifying that if the prior material was a waste with no market use, this rule does not require further demonstration. Also, it is important to note that electricity production is not being displaced by the retrofit; the core energy function of the plant continues, and should not be treated as a competing use	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.1	8.1.10,11	386	Overarching comment is that the quantification required for retrofits and charcoal repurpose creates complexities. Consider limiting eligibility to greenfield (new) facilities only to reduce verification risks and integrity issues introduced by complexities and evidence requirements. The impact to widescale biochar deployment is likely not material and the risk introduced is significant.	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.1	8.1.14	406	The methodology describes in 4.3.2 an EIA as "best practice but not a prerequisite". However in 8.1.14, the iLUC require an EIA or "similar studies". Considering an EIA takes an average 6-12months to be realized, and that this will have to be done prior to the production period submitted to audit, this means projects will only receive credits 12-18months at best after starting the project. How will it impact Puro's communication with new project developpers?	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.1	8.1.14	407	Will Puro be providing a template for EIAs if not required by national regulations? How frequently should an EIA take place?	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.1	8.1.3	101	c. ii. How about reduce bioenergy due to diversion of feedstock away from combustion? This case needs to be mentioned/discussed.	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.1	8.1.3	292	Specific Feedback: Rule 8.1.3 – Indirect Land Use Change and Indirect Emissions We support Puro.earth's commitment to ensuring comprehensive, high-integrity carbon accounting, including consideration of indirect impacts. However, we have significant concerns about the practical feasibility and operational clarity of the requirements proposed in Rule 8.1.3. Specifically: Excessive Complexity: The analysis of indirect land use change (iLUC) and other indirect effects (market-driven, ecological, competition for biomass, service diversion)	See reply to comment #359 above (joint reply to all comments on section 8).	Major change

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				requires macro-level systems modeling, typically performed by academic institutions or national-level GHG inventory teams. Requiring project developers to independently perform such analyses at the project level is disproportionate to the capabilities and resources of most carbon removal developers. Risk of Subjectivity and Inconsistency: Without standardized assessment tools or accepted default factors, different developers are likely to interpret and report indirect impacts inconsistently, leading to audit disputes and project approval delays. Overlap with LCA Requirements: Many potential indirect impacts, particularly those related to competition for biomass or energy, are already addressed in the LCA boundary definitions under Section 7. Adding separate indirect analyses risks duplication of effort without corresponding environmental benefits. Recommendation for Pragmatic Implementation: We respectfully recommend that Puro: -Define clear and limited circumstances under which indirect emissions assessments are mandatory (e.g., only if specific biomass types or supply chains known to have high iLUC risks are involved); -Provide standardized default factors or qualitative checklists rather than requiring detailed modeling from each project; -Allow projects operating under low-risk feedstocks and sourcing practices to self-declare low risk, subject to audit review rather than mandatory full analysis. This approach would maintain high environmental standards while ensuring that the methodology remains practical, accessible, and scalable.		
BCH	8.1	8.1.7 - Table 8.2	262	B3 / Use of biomass residues for bio-energy purpose rather than biochar (carbon sink) is not anymore a competing issue regarding the new RED III merit order. This alternative use scenario deserves to be revised al teast for European locations where the RED III will be in force.	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.1	8.1.7 Table 8.2	236	B2 and B3 refer to "Biomass residues" and they both include Biomass feedstock category G. On the other hand the G category is described on	See reply to comment #359 above (joint reply to all comments on section 8).	Major change

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				page 21 as "Forest biomass maintaining long-term carbon stocks, including any primary (harvested from forest land) or secondary feedstock (generated during processing of primary feedstock)." This description means that category G included both "Non-residue biomass" (primary) and "residue biomass" (secondary) feedstocks. Suggestion: B3 should refer to "Non-residue biomass".		
BCH	8.1	8.1.9	102	A definition of "project region" needs to be given here, this is very vague.	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.1	8.1.9	227	Definition of Surplus and Leakage Calculation We suggest revising the requirement that the surplus of biomass residues in the project region be calculated including the project facility's consumption. Specifically, we propose changing the term "including" to "excluding" in the following sentence: "...there is a surplus of biomass residue in the project region of at least 25 percent larger than the quantity of biomass residues which is utilized annually in the project region (e.g., for energy generation or as feedstock), including the project facility..." Additionally, provide detail how to define the project region boundary for leakage framing. Justification: Including the project's own biomass consumption in the regional demand calculation may inadvertently penalize projects that aim to provide sustainable solutions for underutilized biomass residues. As projects expand, they contribute positively by diverting more residues from potentially harmful disposal methods, thereby enhancing carbon removal efforts. Excluding the project's consumption from the regional demand ensures that the methodology supports and encourages the growth of such beneficial initiatives.	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.2	8.2.2c	397	How precise does quantification need to be so that the project could be deemed eligible? Precise quantification seems very challenging, conservative estimates may be possible?	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.2	0	333	While we agree that land use change (LUC) and competing use of biomass is a leakage risk, we feel that the detail included in proving the avoidance/mitigation of potential emissions is excessive and outside the boundary of the project. This should only be required for feedstocks that fall under category I (which is generally described in 8.2.3.). While we agree that there is a concern for leakage, most biochar methodologies (and carbon credit methodologies in general) account for a degree of both conservative assumptions, and assumptions that generally these	See reply to comment #359 above (joint reply to all comments on section 8).	Major change

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				risks are negligible. It is extremely hard to discern and follow the requirements in the leakage section, and we feel that if these procedures are in place specifically for certain end uses or feedstock types, that they should only be for those types, and explained more clearly.		
BCH	8.3	8,3	387	The guidance and evidence required is subjective which introduces verification risk. VBB need a clear guidance to ensure all projects are assessed equitably.	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.3	8.3.	237	Determination of Indirect emissions: in case of first harvest wood in pulp and paper dominated countries all of it (first harvest wood) will be consumed in any case and the demand will not affect the harvesting amount (as the harvesting is done in planned manner as a part of the managed natural forest growing cycle). Business paying the highest price receives the amount it requires and the business paying the lowest price curtails its production. Biochar production is the hightes paying operation and chemical pulp production is they lowest paying. In chemical pulp production only 40 - 45 % of the wood (cellulose) will be produced as short life time product and 55 - 60 % of the wood (lignin and hemicelluloses) are burned during the production recovery boiler for process heat. Thus biochar production diverts feedstock from burning and short lifetime products to long lifetime carbon capture product. Suggestion: In the chapter 8.3 the possiblity of decreasing of indirect emissions needs to be acknowledged. In other words it needs to be possible have the "indirect emissions" as zero by showing local feedstock market information.	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.3	8.3.2	29	Most developers will not have the sophistication to assess ecologically driven indirect land use change emissions. Most will likely simply say “no impact expected” to avoid extra analysis or reporting here. Loosen the guidance around this or state that this is an area where Puro is specifically just trying to reserve the right to request more information if there are concerns about such impacts.	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.3	8.3.2	166	ECOiLUC is it correlated with3.2.3 as mentioned above? if our feedstock come from plantation biomass waste, does it rule apply? Is the calculation based only on the area covered by the biochar plant or the entire area included in the permit? This point refer to calculation if land use change only from prior year before biochar plant build?	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.3	8.3.2a	398	What could count as a similar assessment?	See reply to comment #359 above (joint reply to all comments on section 8).	Major change

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BCH	8.3	8.3.3 - 8.3.6	167	MASiLUC + MASCUB + MASCUE + MASDIV Is it applicable for biochar sourcing from plantation biomass waste?	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.3	8.3.4.a	20	Table 8.3 lists iLUC factors for different crop types. These values are taken from the EU RED II, Annex VIII and represent a weighted average of individually modelled feedstock values. At least in the case of sugar crops, the actual carbon value of land used for sugarcane production (i.e. the carbon value of the ecosystem present before the installation of a sugarcane plantation) can vary widely. Instead of using average global values for a category of crops (e.g. sugar crops), the standard should allow for a case-by-case evaluation of the impact of indirect land use change. If the operator can convincingly demonstrate that the indirect land use emissions are low or non-existent, the formula should allow for an attribution factor of 0%, or a deviation from the average values provided in Table 8.3.	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.3	8.3.5	28	Accounting for indirect emissions from market-driven competing uses would result in double counting of emissions between the biochar process and the other process that must use an alternative feedstock/product due to diversion by the biochar process. While it is reasonable to account for this source of emissions in the biochar LCA as it is consequentially driven/induced by the biochar process, it may be useful to note this double-counting dynamic and perhaps ask the biochar developers to optionally inform the other process that the emissions for their alternative input are now being accounted for in this process.	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.3	8.3.5	103	c. i. Rule 8.3.7 does not exist, this link leads to nowhere.	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.3	8.3.5	104	d. How about electricity?	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.3	8.3.5	105	d. ii. Why is a similar fuel mentioned here and further below the worst fossil fuel energy source is mentioned?	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.3	8.3.6	228	Calculation of Indirect Emissions for Non-Energy Uses We recommend reconsidering the current approach to calculating indirect emissions (leakage) for alternative uses of biomass residues, particularly when these uses are non-energy related, such as animal feed. Justification: The existing methodology assumes that diverted biomass residues will be replaced by the most carbon-intensive fossil fuel, which may not accurately reflect the reality for non-energy applications. For instance, if	See reply to comment #359 above (joint reply to all comments on section 8).	Major change

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				biomass residues are diverted from animal feed, the replacement is unlikely to be a fossil fuel but rather another type of feedstock. This assumption could lead to an overestimation of indirect emissions, potentially rendering environmentally beneficial projects non-viable. We propose allowing for a more nuanced calculation of indirect emissions that considers the specific alternative uses of biomass residues, provided that accurate and verifiable data are available. Additionally, we note that in the methodology's table under section 8.3, the alternative use scenario for biomass residue category "n" is labeled as B4. We believe this should be corrected to B3 to accurately represent non-energy alternative uses.		
BCH	8.3	8.3.6	238	In cold regions harvested wood is used to generate district heat in heat only or combined heat and power (CHP) installations. At the same time the heat and power demand depends heavily on the ambient temperatures and the highest "peak demand" hours per year are low. Thus the high investment in wood burning CHP and heat only plants is made to cover only the base load and medium to high yearly operating hour demand. As the decreased moisture content of the fuel mix increases the heat generating capability of a boiler, peat is used during winter time to offset the high moisture content of the wood fuel. For the peak demand low investment cost oil and gas burning plants are used. The reported use of coal in Finland comes mostly from steel production as coke and coking oven gas are reported in this category. Wood chips can not be used instead of coke or coking oven gas. Thus " the most carbon intensive fossil fuel used in the country" is not the correct comparison point for the equation 8.3.6 as the high emission factor fuels (coal, oil, gas, peat) usage is not connected to energy wood usage. Currently high and increasing wind power production is leading to increased use of electrical boilers, heat pumps and district heat storage DH production, decreasing the wood fuel demand. See statistics from "Finnish Energy" https://energia.fi/en/statistics/statistics-on-district-heating/ and https://energia.fi/en/statistics/statistics-on-electricity/ Suggestion: The Description for the term EFCO2,Ei to be changed as "CO2 emission factor of the fuel mix or electricity used instead of wood fuel t-CO2/GJ."	See reply to comment #359 above (joint reply to all comments on section 8).	Major change
BCH	8.3	0	165	E-indirect = ECOiLUC + MASiLUC + MASCUB + MASCUE + MASDIV Based on the formula, if our facility is new and the feedstock comes from plantation biomass waste, 1) Does this formula applicable for new facility using feedstock	See reply to comment #359 above (joint reply to all comments on section 8).	Major change

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				plantation biomass waste?		
BCH	8.3	0	399	For all calculations in this section, do you have an example scenario or realistic use-case where you see all this being applied?	Yes, we will provide templates to facilitate the determination of leakage, calculations if necessary, and reporting of CORCs.	No change
BCH	9	p113	318	Recommend introducing a tiered MRV framework that simplifies monitoring and reporting requirements for small-scale producers. Lowering compliance burdens for smaller actors will enable broader adoption and innovation while preserving environmental integrity.	Thank you for your comment. We are considering your suggestion for future updates of our Standard and templates.	No change
BCH	9	0	154	We recommend requiring submission of annual emission reports to Puro. Given evidence of some polluting practices within the biochar industry, Puro should establish more stringent emission standards than those currently required in regions with insufficient regulatory frameworks. This would ensure biochar facilities implement appropriate measures to maximize their climate and environmental benefits.	Thank you for your comment. We do require reporting of Greenhouse Gas emissions. For other air pollutants and emissions to air we require to follow the local regulation and permits.	No change
BCH	9	0	155	We recommend that Puro consider restricting CORC issuance eligibility to projects implementing digital Monitoring, Reporting, and Verification (dMRV) systems. Projects lacking dMRV capabilities rely primarily on self-reported data that is difficult to independently verify. At minimum, dMRV should be required for the production process, which presents fewer implementation challenges due to the existing infrastructure of sensors, scales, and other monitoring equipment.	Thank you for your comment. While we strongly believe in developing dMRV capabilities and are actively working in this area, our procedures are designed to facilitate the data collection and verification of project performance in a technology-agnostic way. We do not want to limit suppliers' eligibility to participate in the development of the CDR industry while the technology evolves to allow for a mature and robust dMRV.	No change
BCH	9.2	9,2	39	Puro should provide a template or checklist for the Monitoring Plan to ensure developers know from early on exactly what needs to be tracked in their projects to comply with MRV expectations.	Thank you for your comment. Puro will continue to provide additional guidance to assist Suppliers in meeting their reporting requirements. This methodology defines the scope of work as listed in rule 9.2.3. and other sections like 10.2 Data Collection provide further guidance. These rules are the foundation of the MRV solution.	No change
BCH	9.2	9.2.4	401	Would an updated P&ID including control loops be sufficient proof for the diagrams?	Thank you for your comment. A Piping and Instrumentation Diagram (P&ID) could define the measurement points in the biochar production process. However, please consider that there are other points of monitoring and measurement for the project that could be identified with other process diagrams.	No change
BCH	9.2	9.2.5	106	Table 9.1 Permanence - the H/C element from biochar production should also be monitored, hence the biochar production field in this table should not be grey and empty.	Thank you for your comment. The components of the term H/C are monitored as part of the data collection for the GHG quantification process. As defined in this methodology, "...the term reversals refers to an event that cancels, entirely or in part, the effects of an already issued CORC", and credit issuance depends on applying biochar	No change

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					to an eligible end-use. Thus, the process of monitoring a reversal event is intrinsically linked to its actual end-use application.	
BCH	9.2	0	400	Will Puro be providing a template for a typical monitoring plan? Is there a way to standardize and facilitate this process for projects?	Thank you for your comment. Puro will continue to provide additional guidance to assist Suppliers in meeting their reporting requirements. This methodology defines the scope of work as listed in rule 9.2.3. and other sections like 10.2 Data Collection provide further guidance. These rules are the foundation of the MRV solution.	No change
BCH	9.3	9.3.4	402	Keeping the records for 2 years after the end of the crediting period --> If there are changes in calculations to increase or reduce credits based on methodology changes will these backtrack to the previous 2 years of production as well? Otherwise, what is the purpose of this requirement?	Thank you for your comment. Methodology changes will not back track. Record keeping and archiving aim to ensure the integrity of the process by allowing third parties to access and the data collected and replicate calculations and check information, if there is a need or suspicion afterwards.	No change
BCH	9.3	9.3.4	413	Please define "information system" - is a third party platform now required? At whose expense?	Thank you for your comment. The term “information system” refers to collecting and managing project information. This can take many forms and does not mean requiring third part platform. The aim is to ensure that projects can properly manage their information needs.	No change
BCH	9.3	9.3.4 d	388	The record retention period specified is quite short. The data retention period should persist for at least as long as the liability for reversal after the crediting period. If post crediting period monitoring of the end use biochar have not been fully describes consider adding section to specify monitoring plan during the post crediting period.	Thank you for your comment. Post crediting period: No further monitoring is required after the end of the year following the crediting period during which biochar is demonstrated to have been applied to the soil or other permitted uses.	No change
BCH	9.3	p. 116	142	Consider placing recordkeeping expectations in a checklist format which would help users quickly see what must be documented daily, monthly, and annually.	Thank you for your comment. Puro will continue to provide additional guidance to assist Suppliers in meeting their reporting requirements. This methodology defines the scope of work as listed in rule 9.2.3. and other sections like 10.2 Data Collection provide further guidance. These rules are the foundation of the MRV solution.	No change
BCH	10.3	10.3	414	Calculating uncertainty requirement described here is a heavy lift. Will Puro help us do this? Provide a calculator tool? Otherwise do we have to pay another consultant to calculate and validate?	Thank you for your comment. We will provide further guidance in supporting documentation and tools applicable to all our methodologies. We want to reassure you that calculating uncertainty is a perfectly manageable process, and we will work to support you doing that.	No change
BCH	10.3	10.3.4	293	Specific Feedback: Rules 10.3.4 and 10.3.5 – Uncertainty Quantification and Reporting We strongly support the principle of transparency in reporting carbon removal outcomes, including acknowledgment of uncertainty. However, we have significant concerns about the practical feasibility and	Thank you for your comment. We will provide further guidance in supporting documentation and tools applicable to all our methodologies. We want to reassure you that calculating uncertainty is a perfectly manageable process, and we will work to support you doing that.	No change

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				proportionality of the uncertainty quantification requirements introduced in Rules 10.3.4 and 10.3.5. Specifically: Excessive Complexity: The expectation for project developers to apply advanced statistical methods (e.g., propagation of uncertainty, Monte Carlo simulations) is disproportionate to the typical expertise and resources available to most carbon removal projects. This requirement risks necessitating specialist consultancy support, raising costs, and slowing project deployment. Risk of Inconsistency: Without standardized tools, templates, or detailed calculation examples provided by Puro.earth, different developers may apply uncertainty methods inconsistently, reducing the comparability and auditability of CORC results. Recommendation for Pragmatic Implementation: We respectfully suggest that Puro: - Provide default uncertainty values and pre-calculated uncertainty templates for common parameters (e.g., moisture measurement, scale accuracy, carbon content testing); - Allow a tiered approach, where full uncertainty propagation is only required if project-level materiality thresholds are exceeded (e.g., if overall uncertainty risk is estimated above a certain %); - Offer simplified guidance or training resources for developers less familiar with advanced statistical methods; - Ensure that the emphasis remains on material impacts on CORC quantification, rather than procedural perfection for minor uncertainties. This would help ensure that uncertainty reporting enhances transparency without becoming an operational barrier to project development.		
BCH	10.3	10.3.5	107	Why not use the uncertainty as a buffer? This should be the case, any uncertainty should be used as a buffer.	Thank you for your comment. We agree that disclosing the project's measurement uncertainty is essential for understanding the accounting of the net removal achieved. Moreover, the % uncertainty of the overall activity provides a transparent measure of the effectiveness of the measurement and accounting of carbon removal activity. Buffers are more often tools used in the market to handle potential reversal events. In Puro Standard	No change

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					reversals are fully compensated by the Supplier according to clause 6.7.4 in Puro Standard General Rules.	
BCH	10.4	10.4.1	403	In which scenario would Puro need a biomass feedstock sample? For facilities like biomass power plants handling a large variety of waste biomass, how would this work?	Thank you for your comment. Biomass feedstock sampling is particularly relevant to determine the eligible properties of the feedstock from mixed sources as enumerated under rule 3.4.7. and the precautionary management of impurities as defined in rules 3.4.13 through 3.4.26.	No change
BCH	10.4.2.	Footnote 40	44	Please use the correct link: https://www.carbon-standards.com/en/standards/service-492~production-of-biochar.html	Thank you for your feedback. The suggested link to the EBC guidelines has been added.	Minor adjustment
BSC	Whole document	Whole document	41	Certain feedstocks, like post-consumer end-of-life paper and end-of-life wood materials, may have been made with biomass that captured CO2 up to decades ago. Transforming such feedstocks into biochar seems to generate a distinct climate benefit, perhaps more akin to emissions reduction, relative to doing so for fast-growing feedstocks, like corn stover or nut shells that pull CO2 from the atmosphere on a more recent and continuing basis. Additional explanations should be provided on how stakeholders should think about and quantify the climate benefits and associated credits from such processes.	Thank you for the comment. We agree that different biomass feedstocks involve biogenic CO_2 captured at different points in time. However, all such streams—including post-consumer paper and end-of-life wood—are considered renewable and part of the short-term carbon cycle. For waste-derived biomass in particular, these materials are produced and disposed of continuously, allowing them to be treated as part of an ongoing, renewable cycle. In most LCA approaches, the timing of biogenic fluxes is treated implicitly, with emissions and removals aggregated irrespective of the exact timing.	No change
BSC	Whole document	Whole document	335	Support the clarifications to the biomass criteria document, particularly clarification around the use of municipal solid waste needing separation.	Thank you for your comment. We are not sure how to interpret it: MSW is not allowed for biochar production, neither organic fractions recovered post mixed collection.	No change
BSC	Table 1 and section 2.B	p.4 - 5	239	In its current form, a biomass feedstock that would be prepared by sorting the food fraction of mixed solid waste doesn't explicitly fall in any category, as Category A only refers to un-sorted MSW and Category B doesn't explicitly include "Sorted-food fraction of MSW" in its description. We recommend explicitly adding "Sorted-food fraction of MSW" in the description column of category B as an eligible biomass feedstock, as it seems to be the most directly applicable category.	We have clarified in the methodology text, in rule 3.4.5, as part of category A, that post-collection sorting of MSW to extract an organic fraction feedstock is also not deemed eligible for biochar due to potential low product quality and higher risks of contamination (similar to compost made from such feedstocks). As per our knowledge, this has not been a common proposal for biochar projects; however, we may consider it in the future, were this to change. No change were made to the Biomass Sourcing Criteria for this comment.	Clarification
BSC	2.B-F	0	265	General recommendation to consider including an fossil carbon or other contaminant fraction limit for sorted waste streams that may include contaminants (or to have this in the relevant sections of the biochar methodology).	Introducing a limit may not be necessary in the Biomass Sourcing Criteria, as it applies also to waste-to-energy with CCS, but can be relevant for biochar projects. As per other comments, we have introduced additional text regarding plastic impurities and a limit for intentionally added impurities (in section 3.4). An absolute limit is not deemed necessary, for two reasons: 1. Inclusion of any fossil carbon from impurities in the accounting, as project emissions, creates an incentive to sort out or minimize	No change

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					the presence of impurities. 2. Biochar quality thresholds for various applications, as impurities may affect the quality of the material.	
BSC	Section F	p.7	240	Item FEEDSTOCK : We suggest to define more precisely the targeted products as follows : "Sewage sludge, digested or not, and biosolids from municipal wastewater treatment plants"	Thank you for your comment. We have incorporated your suggestion.	Clarification
BSC	2.G	p. 7	51	1. How is it proven that forest operations along the entire value chain are contributing to long-term maintenance or increase of carbon stocks in the forest?	Thank you for your comment. There are several ways a Supplier may demonstrate long-term maintenance or increase of carbon stocks in a forest and these include the proof of forest management, certification and compliance with regulatory schemes like RED III through compatible certifications like ISCC-EU.	No change
BSC	2.G	p. 8	52	ad. Material use: Biomass damaged by insects, fire, or other environmental factors no longer qualifies as suitable for use in long-lived wood products is allowed in CDR pathways. What about the use of this biomass for the production of pressed wood boards etc. the biomass can still be used for this case and it is still a long-lived construction material? How can this be proven that it is not useable anymore and the use-case of pressed wood boards etc. should excplicitly be mentioned somewhere	Thank you for the question. The intention of the rule is to ensure that biomass suitable for high-value, long-lived wood products is not diverted to carbon removal pathways. However, lower-grade fractions—such as damaged wood, insect-affected biomass, but also woodchips or sawdust of non-damaged wood — are commonly used for a combination of uses, including material uses (pressed boards) and energy uses (heat and power). Due to this existing multiplicity of uses for those fractions, adding removal pathways to the mix of applications (often in combination with energy, like in the case of BECCS or Biochar) is deemed acceptable (but may be subject to leakage or other restrictions, in the methodology, see section 8).	No change
BSC	Forest Biomass	p.08	370	In much of rural America, biomass plants rely on dozens of small independent suppliers , often dozens or more, each bringing a few truckloads of low-grade wood (e.g. land-clearing debris, thinnings, storm-damaged trees, or tree-service wood). These suppliers generally haul wood from within the plant's local "fiber basket" (often on the order of 50–100 miles), so true market displacement is minimal. Importantly, most of this material is waste residue whose removal actually benefits forest health (by reducing fuel loads and avoiding unplanned burning) and provides scarce income to rural landowners. The flip side is that fragmented chains make strict traceability difficult. Many private forests (especially in the Northeast) are held by families with only ~20 acres on average, and very few can afford the time or cost of formal FSC/SFI/ATFS certification on each parcel. Requiring a small owner to certify an entire forest just to sell a few loads of wood is an "unsustainable burden". In effect, overly rigid requirements could shut out exactly the kind of local,	We are familiar with the situation described by the commenter. The current rules already allow for category G the supply of wood biomass from small independent suppliers, under certain conditions to demonstrate sustainability criteria: namely "- Existence and enforcement of local forest management plans or policies, whether emanating from governmental, regional, or local authorities. This is only applicable in jurisdictions with a Corruption Perception Index (CPI) above or equal to 50. ". Note also that the rules specify that the level of traceability can be adjusted to the level needed to evidence the criteria ("Note: the geographical area of sourcing shall be as precise as needed to evidence the sustainability criteria, but at minima shall refer to the region of sourcing within the country of origin."). In the example described, the proof of origin suggested falls within this scope.	No change

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				high-integrity biomass projects (for example, boiler retrofits at small mills) that Puro should encourage for genuine carbon benefit. Recomendation: Accept practical proof of origin (supplier declarations, haul tickets or procurement logs, local wood receipts) instead of demanding formal chain-of-custody for every load. Allow use of documented regional or state biomass studies, forest inventories or GIS surveys as supporting evidence that wood is sourced from local low-value residues. (This recognizes that, e.g., most wood comes from nearby thinnings and "waste" material. Don't turn certification into a barrier. Requiring formal certification on every small landowner or woodlot – on top of record-keeping – could shrink the eligible supply and even encourage landowners to exit forestry. A more pragmatic approach (recognizing that most feedstock is waste wood and very local) will help enable high-integrity biomass retrofits rather than excluding them.		
BSC	Section G	p.6	241	Item FEEDSTOCK DESCRIPTION : We suggest to be more precise as follows : Forest biomass maintaining long-term carbon stocks, including any primary feedstock (harvested from forest land provided it aims at supporting growth and/or health dynamic of the forest) or secondary feedstock (generated during processing of primary feedstock) *Note that material suitable for use in long-lived construction material is normally not allowed for use in CDR pathways (see Sustainability criteria for Material use).	Thank you for your comment. Following discussions with Puro's Advisory Board, the category name was reverted to "Forest biomass" (for simplicity) and the category description was re-written as follow, with two clarification notes: "*Forest biomass, including any primary feedstock (harvested from forest land) or secondary feedstock (generated during processing of primary feedstock). For clarity, note that a biomass feedstock belonging to this category is only eligible if it meets all the traceability and sustainability criteria. In particular, harvesting of forest biomass in a manner that does not support forest growth and health is not eligible, as per criteria Regeneration, Carbon stocks, Soil quality. Likewise, use of high-quality timber in a CDR pathway is not eligible, as per criteria Material use*". The reason for this writing style is that we want the category description to correspond to any biomass coming from forests (general), and to then determine eligibility of that biomass based on the criteria.	Clarification
BSC	Section G	p.7	242	Item CARBON STOCKS : This paragraph should specify that it is not applicable to cases of clear-cutting, necessary for health reasons (to avoid the spread of diseases) and which generally lead to a release of carbon from the soil, which are an exception. Same comment for Soil Quality, Water resources and Biodiversity items.	The criteria "carbon stocks" (and the other cited criteria) is focused on the management of a forest, at the landscape level, rather than at the stand or plot level. Hence, a case of clear-cutting as described in the comment, e.g. necessary for health reasons, shall be part of an overall sustainable management strategy and can be allowed. The clarification was deemed not	Minor adjustment

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					necessary to add. This said, following discussions with Puro's Advisory Board, the criteria Carbon stocks was reworded to "1. In the sourcing area: forest operations along the entire value chain are contributing to long-term maintenance **and** increase of carbon stocks in the forest**, consistent with the objective of global net zero anthropogenic carbon dioxide emissions.**".	
BSC	Section G	p.8	243	Item LOCAL NEEDS : This paragraph seems to give top priority to the energy-from-wood usage. Whereas, it is clear, at least for the UE members, that the energy-from-wood usage is one of the last priorities, far away after carbon sinks. I suggest deleting this mention to heating which obviously should stay as quite marginal in term of volumes.	The criteria "local needs" is focused on local needs, as opposed to biomass demand created by global markets, recognising that the essential needs of the local population must be met prior to the needs of remote users. The case of heating need is just given as an example, without giving it "top priority" as suggested by the comment. The clarification was deemed not necessary to add.	No change
BSC	Section K	p.11	244	Item FEEDSTOCK DESCRIPTION : We suggest to be more precise as follows : In-field agricultural residues, originating from the cultivation of a food or feed crop, e.g. cereal straw, rice straw, maize straw, stalks, pruning residues, leaves (i.e. palm tree), ... (trees, bushes)	Thank you for your comment. It is not possible to be exhaustive in the list of example given in the description. This said, please see category M. Palm oil biomass and derivatives, for which special rules apply due to the associated risks of land use change. The clarification was deemed not necessary to add.	No change
BSC	Section L	p.11	245	Item FEEDSTOCK DESCRIPTION : We suggest to be more precise as follows : Non-field agricultural residues, originating from the primary processing of a food crop in a factory, e.g., rice husk, maize cob, nutshell and husk, peels, fruit seeds/peats, bagasse, coffee husk, cocoa pods, spent grain. (trees, bushes).	Thank you for your comment. We have incorporated your suggestion (pits).	Clarification
BSC	Section N	p.14	246	Item ENVIRONMENTAL CONDITIONS : We suggest to specify that the native biomass is not eligible under the framework of Conservation landscape management but can be eligible under another framework, such as Forest for example.	We note that this category is not limited to invasive species, but also includes sourcing of biomass from other types of landscape management for conservation purposes. This can include collection of native species under special circumstances. Two examples can be: the harvesting of encroachment bushes (which are deemed undesirable, but often native), the harvesting of excess wood fuel in forests as part of forest wildfire mitigation activities. We have rephrased the criteria Environmental conditions to be less specific about invasive species, and focus on targeted vs non-targeted species per the authorisation required.	Clarification
BSC	2.P	Feedstock Description	324	Feedstock description should expand on the definition of "state-authorized". Does the activity need to be completed or overseen by a municipality/utility company, or does the activity just need to have the adequate permits and approval from relevant authorities?	Following discussion with Puro's Advisory Board, the biomass category P has now been changed to "allowed for processing" but not resulting in CORCs for a more conservative outcome. Revisions in the category name and description, made in the	Clarification

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					Biomass Sourcing Criteria (BSC), were reproduced in the methodology text as well. A explanatory note is also made in the Biomass Sourcing Criteria (section 3.2). Beside changing the status of this category, the following changes or clarifications are made as per the commenters' input: 1.Definition of "state authorized" is further specified in the criteria "Clearing authorisation". Having the adequate permits and approval is deemed sufficient here, with clear identification of the site cleared and the reason of the clearing. We have clarified that clearing for agriculture or plantations is not allowed (as they are the primary driver of deforestation). 2. We have included a requirement to exclude high-value ecosystems from serving as sources of biomass feedstock, as required by the evidence option. We agree that due diligence and scrutiny is necessary. We also reckon that this category of biomass, often demanded by projects to be allowed for biochar production as well as for bio-CCS projects, is often a marginal stream, complementary to other biomass sources. 3. Regarding material use: we let market demand settle the most valuable use of the clearing biomass, depending on the local context. This is deemed acceptable for this category, as it represents a marginal stream. Overall, it is worth highlighting that this feedstock category is a special situation, that does not necessarily have "high scalability", but can be one seasonal or temporary feedstock processed by a biochar plant (or a bioenergy plan with carbon capture and storage). We believe the category is now sufficiently limited to specific types of expansions, explicitly excluding agricultural expansion, and excluding sourcing from high-value ecosystems. The main use case of this category would be e.g. the construction of new buildings in a city entailing the cutting of a limited number of trees on land that is not a high-value ecosystems, which can be allowed for processing but not resulting in CORCs.	
BSC	2.P	p 15	264	Use of land clearance biomass for biochar as described allows for avoidance credits to be issued under this protocol. Though the land clearance emission is assigned to the land development activity, this emission would still have occurred without the intervention. In the case	See joint reply for Category P, in comment #324 above.	Major change

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				that the land clearance is of non-recent growth, and the land is not returning to a carbon sink, the the net atmospheric CO2 remains the same over a short term carbon cycle of years to decades. This is especially important for secondary forests which may provide a significant carbon sink. Suggested improvements: Where the feedstock is land clearance from secondary forests, restrict the use of biomass from land clearance of secondary forests to those established within 20 years of removal, unless the land clearance allows for regrowth/natural regeneration or for the rehabilitation of the natural carbon sinks.		
BSC	2.P	p 15	270	The current wording assumes that competent authorities will always make ecologically sound decisions when authorizing biomass clearance. However, this assumption does not reflect the reality that poor decision-making and short-term political priorities can—and do—occur. Recent cases have involved governments authorizing the clearance of high-value ecosystems, including primary forests, for mining and infrastructure projects, such as the mining approvals granted in Cambodia. As biochar projects scale up production and source new feedstocks, relying solely on the legality of land clearance is insufficient to safeguard ecological integrity. Feedstock sourcing teams should implement advanced, independent checks on the historical and environmental status of sites approved by competent authorities for deforestation, to ensure that areas of significant ecological value are not inadvertently incorporated into biochar crediting.	See joint reply for Category P, in comment #324 above.	Major change
BSC	2.P	p. 14	53	Land clearing biomass - how can this be a sustainable business? How can this source of biomass have high scalability and how is it ensured 100% that additionality is given and there are no cases where fraud leads to expansion of "land-clearing" which will lead to major land-use changes.	See joint reply for Category P, in comment #324 above.	No change
BSC	2.P	p. 15	54	Criteria to be evidenced: What about the material use? There needs to be a section mentioning that any biomass resulting from land clearing is not eligible for any sort of material use or that the biomass has absolutely no other use-case.	See joint reply for Category P, in comment #324 above.	No change
TP	Certified Facilities	Normal Course	322	We are highly supportive of certified facilities being able to use Edition 2022 until the end of the crediting period, as we feel that there is the potential that existing projects that have already issued under a prior version of Puro's methodology may be unable to meet the expectations of	We thank you for the support for the transition plan.	No change

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				the draft version currently proposed, but that they are not necessarily inadequate or unworthy of generating CORCs.		
TP	n/a	n/a	384	The PuroEarth Methodology Transition Plan for Biochar Edition 2025 ("the Transition Plan") outlines the requirements for transitioning from Edition 2022 of the PuroEarth Biochar Methodology for CO2 Removal (the "Biochar Methodology") to Edition 2025. The transition requirements will result in a mix of CORC100 credits (under Version 2022 of the Biochar Methodology) and CORC200+ credits (under Version 2025 of the Biochar Methodology) being generated over the coming five years. The difference in durability claims associated with CORC's generated under the two methodologies (i.e., CORC100 versus CORC200+) has the potential to erode CORC100 credit demand and value (with market participants preferring CORC200+). This demand destruction would adversely impact project developers currently operating under Version 2022 of the Biochar Methodology (for the remainder of the active crediting period). We recommend PuroEarth consider how to ensure equitable market treatment of credits generated during the transition period (i.e., CORC100 and CORC200+), given that the physical climate benefit achieved under both methodologies is equivalent and to avoid adversely impacting active Version 2022 CORC100 project developers. Consider requiring existing projects to revise project plans and quantification to prevent two TIERS of biochar credits available to buyers.	Thank you for the comment. We understand your concern and reconfirm that both methodologies generate climate-relevant CORCs for durable carbon removal. We have decided not to require existing projects to use the edition 2025, but we are recommending and supporting them to revise the project plans and upgrade to edition 2025 during the ongoing crediting period. Evolution of standards and methodologies is a universal problem and overlapping transition times give flexibility to project developers to adjust.	No change
TP	timeline	p.01	369	We appreciate the effort to upgrade the biochar methodology and strongly support the move toward greater rigor and long-term durability. However, we find the proposed transition timeline quite tight, especially for facilities that have already invested time and effort in preparing under Edition 2022. While we would prefer to certify under the 2025 Edition, which promises better alignment with future carbon market expectations , it is difficult to commit to this path without knowing the final structure and requirements of the new methodology. As of today, the full content and potential implications remain unclear, creating operational uncertainty for facilities nearing audit readiness. We encourage Puro to engage more broadly with a larger group of developers, not just a few, to ensure that the final 2025 Edition reflects the operational realities of diverse facilities (e.g., retrofitted biomass plants, new pyrolysis systems, etc.). A more extensive dialogue would help ensure that the timeline and transition process are realistic, balanced, and do not unintentionally disrupt high-quality carbon removal projects already underway.	Thank you for the comment. We have had quite extensive dialogue with large group of developers. In this public consultation more than 40 organisations gave their input, and during the drafting over 50 organisations were collaborating in the working groups.	No change

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TP	Overall	Overall	316	It's important that credits issued under the older methodology are still seen as being valid (even if 100+, rather than 200+). We appreciate that a facility that has been certified against the 2022 methodology will still be able to receive CORC 100+ credits until next facility audit, potentially 3-4 years from now. We think that there is potential for market confusion when 1st December 25 is highlighted as "Termination Date" as it may be misinterpreted.	Thank you for the comment. We have revised the terminology Termination Date to End of Transition Period.	Minor adjustment

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