

Biogenic Carbon Capture and Storage Protocol 1.3

Public Consultation Summary

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Context

Isometric held a public consultation on its Biogenic Carbon Capture and Storage 1.3 Protocol to receive stakeholder input on this protocol and associated modules.

The public consultation was announced on Isometric's Registry on November 11th, 2025. The period of consultation lasted 30 days, with the final day as December 11th, 2025.

After the public consultation, the feedback received was considered for incorporation into the protocol and associated modules. All stakeholders have received responses to the submitted feedback.

This document summarizes the feedback received during the public consultation and the revisions included as a result of the comments.

We thank all participants for their time.

Summary of feedback received

Theme	Section	Comment	Resolution
Scope	All	Reviewers suggested the protocol focuses on combustion, to the exclusion of other key Bio-CCS pathways (e.g. fermentation, anaerobic digestion), which would also benefit from more specific requirements.	<p>The Bio-CCS Protocol covers all Bio-CCS project types.</p> <p>In some instances, it includes additional guidance relevant to specific circumstances (such as incineration), where clarification is required by stakeholders.</p> <p>Future updates to the protocol will consider additional guidance for a fuller range of processes, but until that time, such processes are sufficiently recovered by existing requirements.</p> <p>Change: The following text has been added to the Applicability section to clarify the scope of the Protocol: <i>Examples of applicable point-sources include, but are not limited to, biomass-fired power plants, biomass-fired combined heat and power (CHP) facilities, biohydrogen production, biogas plants, and Energy-from-Waste (EfW) facilities.</i></p>

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Document structure	All	Reviewers noted that the integration of requirements for Energy-from-Waste (EfW) facilities into the Bio-CCS Protocol introduces complexity for non-EfW facilities, and suggested that the protocol should more clearly differentiate between requirements for different facility types.	Change: Many of the updates to the protocol are also relevant to a range of Bio-CCS types (for example, any process where a fraction of non-biogenic carbon is used). There are a couple of instances which are specific only to EfW (relating to incineration residues), and these have been clarified within the text.
Document structure	All	Reviewers noted the absence of a table showing Net CDR Calculation Requirements, as included in the DAC protocol.	Future change: The table is an optional Appendix which summarises existing monitoring plan requirements in a clear format. Isometric will include this for the Bio-CCS protocol in a future patch to this Protocol.
Incineration residues	5.1	Reviewers highlighted that the requirement to comply with EU regulations may create challenges when integrating CDR into any industrial processes outside of the EU - particularly if the scope includes all processes which are 'part of the CDR process' and therefore may include parts of a facility which are already in operation (i.e. not only the new-build aspects of the project).	Change: The section on residues has been adjusted to clarify that the scope is limited to incineration facilities. Within this section, the text has been amended to provide more flexibility for non-EU suppliers.
Additionality	6.4	There was a proposal to reduce financial additionality standards (while maintaining all other additionality requirements), due to a number of market considerations.	No change: The CDR market currently sees financial additionality as an important consideration, to ensure that Credit purchases are making carbon removal happen.
Emissions factors	6.5 + 6.6	Reviewers suggested the need for clearer definition of which data sources should be prioritized, to better enable standardization and comparability between different projects. Specifically, the need to prioritise public and scientifically accepted data.	No change: Isometric's GHG Accounting module has further guidance on selection of emission factors, and Isometric has an Emission Factor Library available in Certify's LCA builder for all Projects. While as a general principle Isometric prefers all data utilised to be public, sometimes non-public commercial emission factor databases offer the highest quality emission factor for a certain scenario with consideration of geography, age, completeness and reliability. We require all emission factors selected to comply with our data quality hierarchy (Table A2).

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LCA system boundary	7.1	Reviewers requested clarification on the LCA treatment of biomass feedstock used as fuel, from which there is no capture. Specifically, which accounting module applies to this feedstock (Biomass Feedstock Accounting, or Energy Use Accounting).	No change: Biomass used exclusively for the production of energy does not currently fall under the biomass feedstock accounting framework directly, but must be accounted for within the LCA as an energy use. These requirements are set out in the respective modules.
LCA system boundary	7.1	A respondent queried how system boundary determinations interact with financial additionality determinations, and the need for consistency. For example, if carbon finance revenues allow the entire facility to move forward when it wouldn't have otherwise, then this circumstance could require a wider system boundary as the CDR is "inducing" or enabling the larger facility to exist.	No change: For a narrow system boundary/retrofit scenario, the bioenergy revenues would be excluded as they are in the baseline and not directly relevant to the carbon removal activities. If the CDR revenues are propping up a facility which would not otherwise be in operation, that would be a market leakage risk and this scenario is covered by our Biomass Feedstock Accounting module .
LCA system boundary	7.1	Regarding the comment: "If any GHG SSRs within Table 1 are deemed not appropriate to include in the system boundary, they may be excluded...", reviewers noted this was a change from the previous version, where situations for narrow project boundaries were described. They preferred the previous method, as it reduced undercertainty.	No change: This update supports the new GHG Accounting module. The content on narrow system boundaries has been moved to the new module so it can be applicable to all CDR projects. See Section 6.1 on Co-product Emissions Allocation , Procedure 2.
LCA system boundary	Appendix 2	Where the Appendix refers to the Biomass Feedstock Accounting module, a reviewer commented that the referenced section of the module does not give clear guidance in relation to drawing a narrow system boundary.	Change: the link previously took the reader to the wrong section of the Biomass Feedstock Accounting Module. The link has been updated to the correct section (Appendix D: Baselines), where there is detailed guidance on project baselines and narrow system boundaries.
LCA system boundary	7.1	Reviewers commented that Isometric should consider removing staff travel, as the burden of data collection is not commensurate with its expected impacts.	No change: Isometric allows exclusion of emissions sources which are immaterial through our materiality rules . While this does require robust estimation of emissions sources such as staff travel to demonstrate they are immaterial, this ensures that material emissions sources are accounted for by a project and overcrediting does not occur.

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LCA system boundary	8.2.4	In reference to accounting for reductions in efficiency or energy production, one reviewer suggested that the protocol should also explicitly refer to cases where CDR processes require external energy (and that these should be subject to the same assessment of leakage and accounting).	No change: This paragraph refers to 'fractional differences in inputs', which includes increases in external energy. Section 8.2.4.5 on Energy Use Accounting includes detailed guidance on accounting for energy inputs, including external sources of energy.
Calculation of CO _{2e, leakage}	8.2.3	A reviewer suggested that the identification of leakage emissions should not solely be the responsibility of a Project Proponent, but should also be independently verified.	No change: The intent of this wording is to identify a requirement for the Project Proponent to identify market leakage considerations within its submissions. Independent verification by Isometric and the VVB will occur through the validation and verification process.
Co-product allocation	8.2.4	In reference to demonstrating that CCS of the fossil emissions would not happen without CDR revenue (EC4), a reviewer queried whether the implication was that fossil fuel CCS became a co-benefit of the CDR project.	No change: In this instance, additional CCS that results from the CDR project, which would not have otherwise occurred, could be considered a co-benefit of CDR.
Co-product allocation	8.2.4	Reviewers suggested that Bio-CCS facilities should have the flexibility to conservatively allocate all emissions to the CDR process, thereby allowing them to sell burden-free energy together with reduced levels of CDR credits.	No change: Emissions allocation is described within the GHG Accounting module , in which projects may opt for Procedure 1: Allocate all emissions to the CDR.
Biomass feedstock accounting	7.2	Reviewers requested clarification on how the counterfactual would apply to waste-to-energy feedstock that would be incinerated in the absence of the project, and how can this be demonstrated so it is included as eligible feedstock.	No change: This is detailed in the Biomass Feedstock Accounting module , referenced within the protocol. For a waste-to-energy Project with a clear counterfactual of incineration, it can be demonstrated with historical evidence of the counterfactual fate of the feedstock (for example, evidence of the baseline feedstock consumption rate of the plant for the last 5 years).

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Transport emissions accounting	8.2.4	On the transport of biomass feedstock, reviewers noted that emissions for two-way distances should be included.	No change: The GHG Accounting Module , referenced within the text, gives details on transportation-related emissions, including the requirement to factor in the full round trip distance of a vehicle when returning to the origination site unloaded, or otherwise the distance to the next destination.
Determination of biogenic fraction	8.2.1	Reviewers suggested that an additional data point could include proof with operational records that there is no fossil fuel firing at the time of capture, noting that this may not need to be explicit within the protocol, as it falls under Method B (Mass Balance Determination). In particular, they noted this would cover certain transient operational scenarios, such as the use of fossil fuels during start-up and shut-down, when the carbon capture plant is not in operation.	<p>No change: As mentioned in the comment, this is implicit within Method B. Calculations should include all applicable fossil fuel use during a given reporting period, including transient operations when the capture plant is not in operation..</p> <p>For a retrofit with a narrow system boundary, fossil fuel use during start-up/shut-downs would be within the baseline. The only scenario where these emissions would be included was if the CDR project was known to cause more frequent start-ups/shut-downs, in which case the incremental increase in fossil fuel use would be accounted for.</p> <p>For a new-build project, it would be expected that all relevant fossil fuel combustion emissions are accounted for within each reporting period.</p>
Determination of biogenic fraction	8.2.1	Reviewers suggested that one important consideration is the need to prioritize direct Carbon-14 testing requirements following internationally recognized standards like ASTM D6866, over calculation-based methods like mass balance calculations to quantify the biogenic portion of the CO ₂ captured., as the latter consistently overestimate renewable content.	No change: Carbon-14 testing would not be reasonable to require where small amounts of fossil fuels are used. In these scenarios, where the mass of fossil fuel used is known to a high degree of accuracy, it is acceptable to conservatively determine the fossil component of captured and emitted CO ₂ using the mass balance and emission factor.

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Sampling	7.1	On references to sampling, reviewers suggested that sampling is not relevant to Bio-CCS processes.	No change: the protocol covers a broad range of projects for which sampling can be relevant. For example, sampling of flue gas for environmental pollutants is common practice for determining compliance with environmental regulations.
Measurement of direct emissions	8.2.3	On acceptable methods of measurement, reviewers suggested that the frequency on non-continuous measurements could be specified.	No change: As the Bio-CCS protocol covers a variety of bioenergy processes, the frequency and exact method is flexible. Suppliers must justify how the chosen method and frequency ensures all direct emissions are accurately quantified.
Measurement of direct emissions	8.2.3	Reviewers requested clarification that the concentration of GHGs in direct emissions does not need to be measured directly where it is inappropriate to do so (e.g. pressure relief valve activation), provided documentation of the release is provided and the release amount is quantified based on the duration of the release.	Change: It is expected that in the event of a process malfunction, measurement will not be possible and direct emissions through these routes will need to be documented and reported with best possible estimations. We have added guidance to the protocol to clarify this: <i>"In the event of a process malfunction (such as mechanical failure, gas leaks and/or PRV actuation events), direct measurement will sometimes not be possible and direct emissions through these routes must need to be documented and reported in the Reporting Period in which they occur, with best possible conservative estimations of emissions, in agreement with Isometric".</i>
Measurement of direct emissions	8.2.3	Regarding on-line analyzer measurement of GHG concentration, a reviewer noted that +/- 30% is a large variation, and suggested reducing this.	No change: It is expected that both flue/tail gas compositions can be variable over time, depending on feedstocks and process parameters, and so we have set the bounds to acceptable calibration standards to accommodate this.

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Post-capture emissions	8.2.3	Regarding Equation 7, a reviewer suggested setting a maximum time interval over which the calculation can be averaged.	No change: We considered this, but ultimately concluded it did not impact the integrity of the credits as long as existing requirements are followed. Projects are incentivised to average over shorter intervals to credit more frequently, while the upper limit is determined by the maximum reporting period (annually).