

October 1, 2024

Public Comment: SBM 014 annotated agenda and related annexes

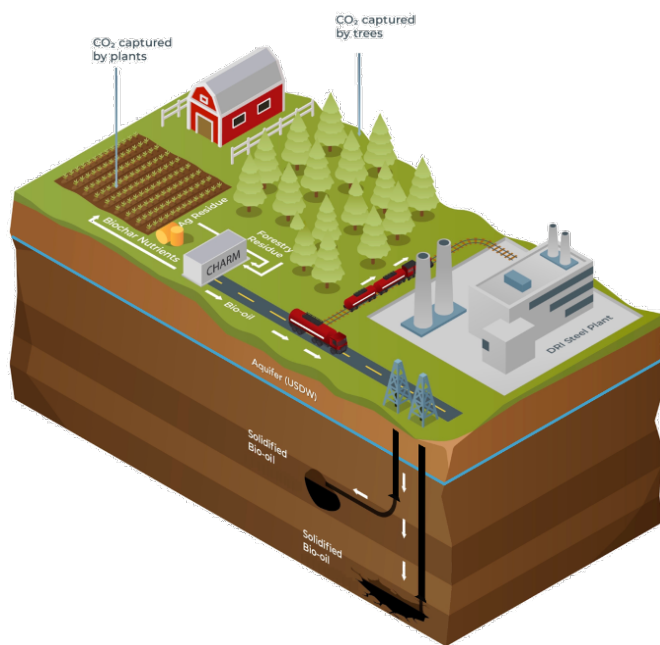
To: Supervisory Body of the Article 6.4 mechanism

Submitted by: Charm Industrial | 2575 Marin St., San Francisco, CA 94124

Introduction

Charm Industrial (Charm) is one of the world's leaders in delivered tons of permanent carbon dioxide removal (CDR) and strongly supports the inclusion of high-quality engineered carbon removal within the Article 6.4 mechanism. Charm supports A6.4-SBM014-AA-A08 and A6.4-SBM014-AA-A09 with suggested edits below.

Background on Charm



Charm Industrial removes carbon from the atmosphere by capturing carbon dioxide in plants, converting plant biomass into an injectable bio-oil and biochar, and permanently sequestering this bio-oil underground in geological storage. The agricultural biomass residues (e.g., corn stover, wheat straw) and forestry residues that Charm uses would otherwise decompose or burn, releasing the embodied carbon dioxide into the atmosphere. Charm uses fast pyrolysis to quickly heat the biomass to 500°C, breaking down the biomass into a carbon-rich bio-oil that can be easily transported, quantified, and injected for permanent sequestration. The produced

biochar can then be used as an agricultural amendment or sequestered as carbon removal.

Charm's key technology is a custom-built, mobile pyrolyzer that moves to each farm or forest to process excess biomass into bio-oil. The produced bio-oil is transported to a network of existing EPA- and state-regulated injection wells, where the bio-oil is pumped underground for permanent storage. Bio-oil is denser than most subsurface fluids, including brine and hydrocarbons, so it sinks within the reservoir. A chemical reaction called auto-polymerization solidifies the bio-oil, locking it in place for a certified period of at least 1,000 years. The net effect is permanent sequestration of the CO₂ captured from the atmosphere by the plants.

The image above is a concept drawing of Charm's bio-oil sequestration process. This new, patented method effectively captures atmospheric CO₂ in biomass and sequesters it in formations that have stored oil and gas for hundreds of millions of years. Charm has delivered over 7,000 tonnes, accounting for a large portion of the permanent carbon removal to date.

Comments

Charm appreciates the opportunity to comment on annotated agenda and related annexes of the fourteenth meeting of the Article 6.4 Supervisory Body. In particular, Charm supports the inclusion of high-quality engineered carbon removal within the Article 6.4 mechanism. Engineered carbon removal has the potential to provide crucial mitigation benefits when carried out with strict standards for additionality; permanence; environmental and public health; and monitoring, reporting, and verification. This means that the specific methodologies and requirements for carbon removals within the mechanism are critically important.

A6.4-SBM014-AA-A08 - Draft standard: Requirements for activities involving removals under the Article 6.4 mechanism

Charm supports this document and appreciates the Supervisory Body's efforts to ensure removals are additional above baseline scenarios and are strictly monitored and reported. Charm makes the following comments on individual sections of A6.4-SBM014-AA-A08.

Paragraph 30

Charm strongly supports allowing projects to terminate post-crediting monitoring if the data demonstrates negligible risk of reversal. For Charm's projects, by the end of the crediting period bio-oil will be sequestered thousands of feet underground, sunk to the bottom of the reservoir, and solidified. Engineering studies certify there is extremely low reversal risk over a 1,000 year period. The Supervisory Body should allow projects like this end monitoring once the crediting period has ended.

Paragraph 32

Option 1 states that "Removals eligible for crediting shall exceed the applicable baseline determined in accordance with requirements for the development and assessment of Article 6.4 mechanism methodologies and are calculated for each year in the crediting period." However, for some projects, calculating the baseline annually is an inaccurate cadence. For example, each of Charm's projects (whether lasting more than, equal to, or less than one year) receive individual baselines based on biomass sourcing, project-specific emissions, etc. Charm suggests editing the sentence above to read "Removals eligible for crediting shall exceed the applicable baseline determined in accordance with requirements for the development and assessment of Article 6.4 mechanism methodologies and are calculated for each year in the crediting period or on a project specific basis as approved by the Supervisory Body."

Option 1A(iii)b. states that “The total GHG mass injected into the storage reservoir minus the GHG mass that was released from the reservoir into the atmosphere [plus the GHG mass that was destroyed] during the period covered by the monitoring report.” Charm supports this and recommends clarifying that “GHG mass” means the carbon dioxide equivalent (CO₂e) of the GHG stored.

Paragraphs 39 and 40

Charm supports directly linking the percentage of A6.4ERs that are transferred to a buffer pool to the reversal risk for a specific project.

Paragraph 61(b)

Charm is interested in the Supervisory Body’s efforts to develop future guidance on buffer pool composition, including the percentage of A6.4ERs that are transferred to a buffer pool from any given project. While Paragraphs 39 and 40 discuss one piece of this, Charm is interested in engaging more with the Supervisory Body as it creates additional guidance on this.

In particular, in this future guidance Charm recommends the Supervisory Body allows uncanceled Buffer 6.4ERs to be transferred out of the buffer pool and sold in the market, once the Supervisory Body has allowed for the termination of post-crediting monitoring (as discussed in paragraph 30).

A6.4-SBM014-AA-A09 - Draft standard: Application of the requirements of Chapter V.B (Methodologies) for the development and assessment of Article 6.4 mechanism methodologies
Charm supports this document and the key principles of methodologies being real, transparent, conservative, and credible. Charm makes the following comments on individual sections of A6.4-SBM014-AA-A09.

Paragraph 18

Charm supports Paragraph 18 Option 1, but with the reduction in the total creditable number of units limited to emissions reductions but not removals (see below for suggested text). Limiting the total creditable number of units from emissions reductions makes sense as a way to drive ambition to meeting the long-term temperature goal of the Paris Agreement, as it forces industry to move to zero-emission processes (not just reduced emissions). However, removals will be important not just to counter ongoing emissions, but to reduce legacy emissions (especially in the case of an overshoot). Therefore, reducing the total creditable number of units may counterproductively disincentivize an investment in removals just when it is crucial to increase investment.

Paragraph 18 Option 1: Mechanism methodologies shall contain provisions to encourage that total creditable number of units from emission reductions but not from removals is progressively reduced to encourage ambition of activities over time, while taking into account host Party circumstances and creditable amount of units required to remove barriers to the deployment of technologies as described in paragraph 19 below.

Paragraph 19

While Charm supports the intention to encourage the deployment of new technologies to areas where they are not widely available, it should be made clear that this paragraph does not prohibit additional use of technologies in locations where they are already available if they can lead to additional removals. Doing so would unnecessarily limit a technologies' ability to remove carbon from the atmosphere and help meet the long-term temperature goal of the Paris Agreement.

Paragraph 31

In Paragraph 31, Charm requests using "may" (as indicated below in the suggested text). Any requirements that limit the length of the crediting period to less than the lifetime of the technology or additional conditions specified by DNAs should be determined by DNAs for each specific technology or activity, rather than forced into a standardized template.

Paragraph 31: Mechanism methodologies shall contain provisions for contributing to the equitable sharing of mitigation benefits between participating Parties. These may include one or more of the provisions below:

Paragraph 45

Charm supports Paragraph 45 Option 1, as it appropriately treats paragraph 36 (i), (ii), and (iii) of the RMP equally in encouraging ambition by reducing the baseline downward.

Paragraph 47

Charm supports Paragraph 47 Option 1 without the bracketed text (see below for suggested text). Including a requirement within this paragraph to align with paragraphs 48-50 is redundant, and sections above already require aligning the methodologies with the NDCs, LT-LEDs, and the long-term temperature goal of the Paris Agreement. Additional requirements should be applied at the methodological level on a case-by-case basis.

Paragraph 47 Option 1: Factors or quantitative methods for downward adjustment shall be included in the project design document and updated at each renewal of the crediting period.