



Low-Carbon Cement Protocol Workgroup Meeting Notes and Takeaways

Workgroup Meeting Date: 2/17/2023

Link to review recording: <https://www.youtube.com/watch?v=vTbKZuAaPf8>

Workgroup Members in attendance:

Name	Organization	Present (P)/Absent (A)
Adam Swercheck	Lehigh Hanson (Secondary)	A
Christina Theodoridi	NRDC	A
Danny Gray	ECO Materials	P
David Bangma, Alejandra Arauz, Russ Simonson	Ash Grove	P
David Perkins	Lehigh Hanson	P
Eric Giannini	Portland Cement Association (Secondary)	P
Dale Prentis	Institute for Carbon management UCLA (Secondary)	P
James Carusone	Salt River Minerals	P
James Salazar (Concrete)	Athena Institute (Secondary)	A
Jamie Farny	Portland Cement Association	A
Jamie Meil (Cement)	Athena Institute	P
Jimmy Knowles	SEFA Group	P
Kayla Carey	ClimeCo (Secondary)	P
Lauren Kubiak	NRDC (Secondary)	P
Lauren Mechak	ClimeCo	P
Matthew Lemay	National Ready Mix Concrete Association	P
Miguel Angel Freyermuth	Ruby Canyon Environmental	A
Ram Verma	California Department of Water Resources	P
Seth Baruch	Carbonomics	A
Thomas Van Dam	Nichols Consulting Engineers (NCE)	P

Agenda:

- **Project definition:** review of edits & final discussion.
- **Ineligible/eligible project types:** review of edits & final discussion.
- **Project ownership:**
 - Currently, the SCM/ACM producer is proposed as the project developer unless the rights to the emissions reductions are transferred to another entity. However,

from a carbon accounting perspective, ownership is typically centralized around emission reductions (i.e. the cement or ready mix facility in this scenario).

- *Questions: Who is the entity with liability for the project and in need of carbon incentives to motivate emission reductions? Where does the emission reduction occur in the supply chain? How do we account for emission reductions later in the supply chain if ownership lies with the SCM/ACM producer?*
- **Project ownership – Aggregation:**
 - Comments from Workgroup members suggest that aggregation of projects should be allowed and based upon product emission reduction profiles of the SCM/ACM products.
 - *Questions: Does the Workgroup agree? Are there other cases where project aggregation will be necessary?*
- **Location, Start Date and Crediting/Reporting Period:** review of edits & final discussion.
- **Additionality:**
 - Legal Requirement Test: To satisfy the Legal Requirement Test, project developers must submit a signed Attestation of Voluntary Implementation form. *Are there any state considerations that would deem a project ineligible?*
 - Performance Standard Test: To inform the Performance Standard Test, the Reserve typically undertakes an assessment of prevailing practice in the specific industry and jurisdiction in question, which includes assessing drivers of adoption for a given practice or technology, as well as what the barriers to adoption might be.
 - Beneficiated Ash: *Where do we draw the line for eligibility of ash? Is there a timeline for harvested ash? Should we lean on the ASTM standard and chemical testing to determine eligibility?*
- **Quality Standards:**
 - *Questions: Is there an ASTM certification process that can be used during protocol verification? What are the ASTM standards that should be referenced in the protocol? Should we have a separate section (i.e. Section 3.6) within the protocol for ASTM standards or should be it included under project eligibility?*
- **Regulatory Compliance:** review of edits & final discussion.
- **End Uses:** review of edits & final discussion.
- **GHG Boundary & Quantification:** review draft & start discussion.

Main Points of Discussion and Decisions Made:

- **Ineligible/eligible project types:** review of edits & final discussion
 - Portland Limestone Cement now included on list of ineligible products
 - Final determination: No concern from group with edits, assumed all accepted.
 - **Action Item: Remove silica fumes form eligible list**, keep ground glass pozzolans.
 - CO2 needs additional consideration for inclusion on eligible list of SCM/ACMs, especially in reference to crediting any CO2 capture to create SCMs/ACMs.
 - Besides the above, the group agrees that the eligible/ineligible lists seem correct. Protocol has an ineligible/negative list and then a positive list with examples of products considered eligible that can be updated over time.

- **Regulatory Compliance:** review of edits & final discussion
 - o No comments from WORKGROUP, assume all edits accepted.
- **End Uses:** review of edits & final discussion
 - o Parking this one for now, but will need to revisit based on procurement policy documents from NRMCA.
- **Project Ownership:**
 - o **Default credit ownership**
 - To discuss further during quantification.
 - Keep the SCM producer as the default owner since they seem to be able to access batch weight and sales receipts to demonstrate their products displaced Portland Cement Clinker, and then see how it changes in quantification.
 - o **Aggregation:**
 - Comments from Workgroup members suggest that aggregation of projects should be allowed and based upon product emission reduction profiles of the SCM/ACM products.
 - Conclusion: No opposition to aggregation as long as SCM products are similar and not financially viable as individual projects.
- **Location, Start Date and Crediting/Reporting Period:** review of edits & final discussion
 - o Conclusion: no issues with any of the proposed protocol language, no edits needed to protocol language.
- **Quality standards:**
 - o ASTM certification: how do products demonstrate they meet standards?
 - All these products have requirements (and supporting documentation) that must be reported on the quality of the material, and producers must provide that documentation to the ready-mix producer and then to the end-user. So that would be very easy to provide/ask for during verification.
 - How do we handle new materials that come to market and don't have applicable ASTMs standards yet, like rice husk ash?
 - Products can claim that they meet the chemical and physical standards of a specific product standard, i.e. rice husk ash could claim to meet the chemical and physical standards of C618 even though they are not fly ash but cannot claim to then be ASTM certified under C618.
 - o New standards for ASTM products come out over time, but can take years. This could pose a verification issue.
 - o **Action item: McKenzie and Chloe will make a list of existing ASTM standards for products proposed as eligible under the protocol.**

- **Additionality:**
 - o **Legal Requirement Test:**
 - No US federal regulations are being highlighted.
 - The North Carolina Coal Ash Management Act (and potentially other one-off state regulations) could make a project ineligible for coal ash beneficiation projects.
 - Reserve does not allow for projects where there are any legal requirements (so no above-and-beyond legal requirement projects).
 - Another gray area is city /state procurement policies that cap GHG emissions for building and therefore require the use of SCMs in their performance standards as it is a legal requirement for public projects.
 - Consideration of these procurement policies will be determined by how far the protocol will track the end-use of these products.
 - **Action item: NRMCA to provide list of procurement policies to determine if there are any ineligible end uses and Reserve will bring it back to the group.**
 - o **Performance Standard Test: Beneficiated Ash: *Where do we draw the line for eligibility of ash?***
 - Use ASTM C618 as our measuring stick for spec vs non-spec, but the calcium oxide classification doesn't necessarily need to be included.
 - Need more info about the costs of beneficiation to determine a minimum threshold for the level of beneficiation needed to become eligible, and whether products need to be out of specifications for one or more chemical/physical requirements to be considered additional and eligible.
- **GHG Boundary & Quantification:** review draft & start discussion
 - o WORKGROUP needs to determine whether it is necessary to look back beyond where SSRs 1 and 2 are right now to consider baseline emissions scenario if products (i.e., fly ash) remained as waste.
 - o Also need to look into expanding the project boundary to consider concrete and end use.
 - o There is a need to continue discussing the GHG boundary to ensure the point at which Portland cement is displaced is included.

Pending Questions for the Workgroup:

- CO2 needs additional consideration for inclusion on eligible list of SCM/ACMs, especially in reference to crediting any CO2 capture to create SCMs/ACMs.
- Need more information about the processes/costs of beneficiation to determine a minimum threshold for the level of beneficiation needed for coal ash to become eligible, and whether products need to be out of spec for one or more specifications to be considered additional and eligible.
- Continue discussion on expanding the GHG boundary to ensure the point at which Portland cement is displaced is included in the project activity (for verification purposes).



Action Items for the Reserve:

- Remove silica fumes from eligible list of SCMs and keep ground glass pozzolans on eligible list.
- McKenzie and Chloe will make a list of existing ASTM standards for products proposed as eligible under the protocol.
- NRMCA to provide list of state/city procurement policies to determine if there are any ineligible end uses, and Reserve will bring any concerns back to the group.