



August 31, 2022 Meeting  
Clean Fuel Standard: Agriculture and Forestland Carbon Capture &  
Sequestration Advisory Panel (AF-CCSAP)

## MEETING SUMMARY

### PARTICIPANTS

#### Advisory Panel Members:

- Abbey Brown, Washington Dept. of Ecology
- Amanda Parrish, The Lands Council
- Amy Trainer, Swinomish Indian Tribal Community
- Cherie Kearney, Columbia Land Trust
- Chris Covert-Bowlds, Dr., Washington Physicians for Social Responsibility
- Csenka Favorini-Csorba, Washington Department of Natural Resources
- Dryw Jones, US Forest Service Pacific Northwest Research Station
- Harrison Pettit, Pacific Ag Biofuel
- Jim Amonette, Washington State University & Northwest National Laboratory
- John Henrikson, Wild Thyme Tree Farm
- Julius Pasay, The Climate Trust
- Justin Allegro, The Nature Conservancy
- Karen Sowers, Pacific Northwest Canola Association
- Max DuBuisson, Indigo Agriculture
- Mary Catherine McAleer, Weyerhaeuser
- Paul Buckland, Inland Empire Paper Company
- Stephanie Celt, Washington Department of Commerce

#### Other Participants:

- Department of Ecology: Debebe Dererie, Janée Zakoren, Rebecca Sears

### Opening

Abbey Brown (Ecology) welcomed Advisory Panel members and provided an overview of the meeting agenda and objectives. Two new members – panelist Karen Sowers and Ecology staff Rebecca Sears – provided brief introductions. Abbey noted that Rebecca will work closely with this panel, as a project manager and partnerships specialist.

Abbey gave an update on the current development of the Clean Fuel Standard: Ecology proposed the draft rule on July 18<sup>th</sup>, held a public hearing on August 23<sup>rd</sup>, and August 31<sup>st</sup> marked the end of the formal comment period. Next steps for Ecology would include reviewing and responding to comments, and working to finalize the rule text.

While this panel is separate from, and running parallel to, the rulemaking process, Abbey noted that this panel provides an opportunity for Ecology to learn from panel members on existing and emerging



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practices for carbon sequestration on agricultural and forest lands. This panel will work to create a roadmap for how Ecology might implement these practices in future cycles of rulemaking.

In previous meetings, the panel drafted a work plan, sketching out the questions and topics that the panel might focus its attention on in the coming months. To support the development of that work plan, the purpose of August meeting was defined as beginning to identify specific greenhouse gas-reducing practices, the criteria by which they might be prioritized, who might be subject matter experts best able to speak on the various topics, and using the input to shape the work plan.

### *Carbon sequestration practices*

Rebecca introduced a series of exercises to engage the advisory panel in two questions:

1. What are existing and emerging greenhouse gas-reducing practices in agriculture and forestry?
2. Of the practices generated above, what are the priority practices, and by which criteria?

The exercises were structured for the panel to brainstorm as many practices as possible, within the constrained time available. The summary of brainstormed practices below has been edited for clarity, duplication, and clustered by general themes where they were present.

For both questions, the advisory panel moved through four, short rounds of reflection, discussion and notation on digital sticky notes:

1. Individual reflection (3 min)
2. Paired discussion (5 min)
3. Four-person discussion, including notating practices on digital sticky notes (10 min)
4. Plenary discussion (12 min)

Based on the importance of the panel's input on the two questions, the richness of discussion, and running over the allotted time for the exercises, Ecology decided to spend the majority of the meeting time on these questions, and to address the later agenda items (i.e., identifying subject matter experts on various practices) with post-meeting homework and future meetings.



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*Note:* The list below is best viewed as the beginning of a collection of practices to be used for peer learning and for informing the panel's near-term work plan. It has not been edited for scope relevance with the Clean Fuel Program.

### **Brainstorm of existing practices that reduce greenhouse gases in agriculture and forestry**

#### *Biochar*

- Biochar soil amendments to farmland
- Biochar production from forestry and ag wastes
- Carbon storage in solid wood products and use of harvest residuals in the production of biofuels/biochars

#### *Conversion avoidance*

- Avoid conversion of agriculture and forestland, particularly small forest landowners
- Payment or incentives to keep forests and open spaces green
- Protecting existing stocks to protect ongoing sequestration: maintain forestland, maintain grassland

#### *Afforestation*

- Afforestation on marginal land not suited for timber or agriculture
- Afforesting agriculture lands – agroforestry

#### *Soil management*

- No till or low till agriculture
- Maximize soil health and productivity (e.g. with cover cropping)
- Cover crops (adding, diversifying, extending growth)
- Planting wind breaks around edges of farmland used to produce biofuel crops
- Moderating pesticide usage
- Improved water efficiency
- Compost or manure additions to soil
- Replace annual crops with perennial
- Improved nitrogen use efficiency
- Crop selection impacting carbon sequestration rates
- Use of microbial soil amendments



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*Forest management*

- Making use of thinned trees (cut to reduce wildfires) rather than just burning them
- Incentives for improved forest management (e.g. pre-commercial thinning in overstocked stands, extended rotations, etc.)
- Forest health treatments
- Reforesting burned lands
- Planting trees in riparian areas, windbreaks, etc.
- Extended rotation forestry to sequester more carbon over time
- Extending rotation ages in even-aged management regimes
- Species selection in forests
- Forest restoration projects
- Eliminate pile burning

**Brainstorm of emerging practices that reduce greenhouse gases in agriculture and forestry**

*Mineralization*

- Enhanced rock weathering
- Using waste heat and CO<sub>2</sub> from bioenergy production to enhance weathering of minerals
- Rock additions to soil to increase carbon mineralization

*Aquatic*

- Use of algae in water treatment or purification – use harvested algae for biofuels
- Add kelp to cow feed to reduce methane emissions
- Carbon sequestration in kelp

*Carbon capture*

- Methane/CO<sub>2</sub> underground carbon sequestration, particularly co-located at clean fuel production site

**Of the above practices, which practices might the panel identify as priority?**

- Soil management - cover crop, tillage reduction, no till, regenerative agriculture
- Biochar - on farmland, making sure to address air pollution, which is possible
- Forest management - extended forest rotations
- Mineralization – enhanced rock weathering
- Expansion of forest practices – afforestation on marginal and agricultural land, agroforestry
- Wildfire – reduction



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- Avoiding conversion and protect forestland and grassland
- Algae in H<sub>2</sub>O treatment converted to biofuels
- Forest reuse – biproducts, residuals from forest restoration & thinning
- Bio-oil injected in deep well

**What criteria were used in identifying the priority practices above?**

- Scalability, existing commercial scale, scalable technology, readiness to deploy at scale
- Scientific support for sequestration, established science, scientific backing
- Existing quantification pathways
- Size of sequestration opportunity
- Direction connection to the carbon intensity of fuels in WA
- Existing support from public and practitioners
- Durability or permanence of sequestration
- Co-benefits
- Rate of sequestration
- Amount sequestration (total, per acre)
- Avoids conversion
- Existing infrastructure
- Speed of adoption
- Maturity of practice
- Industry stability
- Competing with other commercial or natural uses of feedstock (e.g. food, harvested wood products, habitat, etc.)
- Barriers to practices, financial and non-financial
- Environmental impacts
- Incentive opportunities
- Natural climate solutions
- Opportunity for co-benefits

**Closing**

Abbey closed out the meeting by thanking members for their ongoing participation and contributions. She also shared the team's contact information and encouraged panel members to email the team with any ideas, suggestions, or questions that arise before the next panel meeting.

The next Advisory Panel meeting will be in October, date to be determined.