

CarbonQuest (Anna Pavlova)

Please, see attached comments from Spokane Valley-based distributed carbon capture company CarbonQuest. Thank you for initiating the comment period on carbon management.



Carbon Management Program
Department of Ecology
Olympia, Washington 98503

June 26, 2026

Dear Carbon Management Team,

The comments below are submitted on behalf of a Washington-based distributed carbon capture company CarbonQuest, in response to Ecology's open comment period on the carbon management program.

Washington has set nation-leading goals to decarbonize its economy and transition to a clean energy future, but achieving those targets will require the full deployment of available technologies, including carbon capture, utilization, and storage (CCUS). As identified in Commerce's recent analysis, state policy frameworks do not yet clearly account for how carbon capture technologies should be treated under existing statutes, creating uncertainty for emitters, regulators, utilities, and project developers.

Below we propose steps for the Department of Ecology to clarify definitions, expand opportunities to dispose of captured CO₂, and provide clarity to emitters under both the Clean Energy Transformation Act (CETA) and the Climate Commitment Act (CCA).

The biggest barriers to carbon management in Washington are lack of clarity on compliance of certain pathways once the CO₂ is captured as well lack of support for transportation and mineralization/sequestration. Many carbon capture projects are cost-effective and financeable when CO₂ is sold as a recycled product, but financing becomes more challenging when sequestration or mineralization pathways are necessary. In the absence of a clear program for carbon management, financing entities are reluctant to finance projects that rely on sequestration or mineralization pathways because of both cost and the regulatory uncertainty..

To overcome these barriers, there are initiatives that Ecology can undertake. In the upcoming legislative session, the state should also adopt a set of targeted, clarifying policy changes—including refinements to CETA and CCA—to ensure that carbon capture projects are appropriately recognized when they achieve meaningful and permanent emissions reductions. These updates should provide regulatory certainty, support investment in emerging technologies such as carbon mineralization in concrete or aggregates, and help ensure Washington can meet its long-term climate and clean energy goals in a cost-effective and reliable manner.

Proposed policy changes below reflect both opportunities for Ecology to clarify in rules and guidelines, and for the legislature to act on items where the agency is unable to implement without further legislative action.

CarbonQuest developed a legislative proposal to HB 2285 that is best understood as a clarification of existing law, not a departure from Washington's clean energy framework. The 2024 Biennial Energy Report identifies uncertainty in how carbon capture and storage (CCS) projects are treated under the Clean Energy Transformation Act (CETA), specifically recommending that the state "clarify the eligibility of projects using carbon capture and storage as 'non-emitting electric generation.'"

Our proposal directly responds to that identified gap by establishing clear statutory criteria for when electricity produced with carbon capture qualifies as non-emitting.

In parallel, we propose to clarify carbon accounting under the Climate Commitment Act (CCA) to reflect scientific consensus that certain mineralization pathways—such as CO₂ permanently bound in concrete or aggregates—constitute durable sequestration. Ecology can clarify the definitions around above-and-below ground mineralization without further legislative action.

Together, these changes provide needed certainty for regulators and utilities, align Washington law with emerging carbon management technologies, and ensure that statutory frameworks accurately reflect how emissions are reduced and permanently stored.

Below are four recommendations to build a robust carbon management program.

1. CCA Compliance Clarifications

- Ecology should clarify that above-and-below ground mineralization count as permanent sequestration pathways, in addition to in-ground sequestration. The current definition leaves space for interpretation on various mineralization options and doesn't provide measurement and monitoring guidance reflective of each pathway, leading to financing entities discounting such options as viable.
 - Define what above-ground means (In concrete, aggregates and similar materials)
 - Develop MRV guidelines for each pathway, including above-and-below ground mineralization.
- Align the permanence requirement to that of the California carbon capture and sequestration program that states that any product can store CO₂ for 100 years or more qualifies as permanent storage for purposes of compliance and accounting. While there is no evidence that CO₂ cannot last more than 100 years when stored in concrete,

2. Utilization: Aligning with on-the-ground realities

Carbon capture itself is an economically viable proposition, but transportation costs and still scaling markets for sequestration and mineralization render most projects

uneconomical in the absence of state funding and incentives for transport and sequestration.

While permanent CO₂ disposal solutions are being developed, the most economical way to commercially pilot carbon capture is to recycle CO₂ in the existing supply chain that often relies on virgin CO₂ transported over long distances. In most cases, some or all of the captured CO₂ will be re-emitted into the atmosphere in the utilization instance, recycling is a cost-effective short-term solution that can be phased out as permanent storage and mineralization become more available.

As an example, CO₂ that is captured at the cost of \$80/ton can be sold in the Pacific Northwest for \$200/ton, making the project both economical and serving as a proving ground for the technology itself. The same CO₂ that needs to be transported 100 miles and sequestered instead of sold on the market will incur an additional cost of \$30-\$100/ton, most likely requiring government funding to support the disposal of CO₂.

Therefore, in addition to clarifying the treatment of carbon capture under existing statutes, Washington should take the next step by explicitly recognizing the role of carbon utilization as a complementary pathway to permanent sequestration. The state can draw from existing examples. The federal government recognizes such pathway in its 45Q tax credit, and the Swiss government allows for near-term utilization in the food and bev market. While current policy frameworks focus primarily on geologic storage, emerging technologies enable captured CO₂ to be safely and durably incorporated into products such as concrete, fuels, and building materials—reducing emissions while creating economic value. The state's policy architecture should be updated to accommodate these pathways by establishing clear rules for when utilization qualifies as emissions reduction or storage under the Climate Commitment Act (CCA), and by enabling its use in compliance strategies where appropriate. By doing so, Washington can accelerate innovation, lower the cost of decarbonization, and support in-state industries that are working to turn captured carbon into useful products, rather than treating it solely as a waste stream.

Specific Proposals:

Defining utilization in statute and rule

- Establish when carbon utilization qualifies as:
 - **Durable emissions reduction** (e.g., long-lived materials)
 - **Short-term utilization pathways** (e.g., fuels, chemicals)
- Provide clear MRV (monitoring, reporting, and verification) standards for utilization pathways
- Ensure consistency between CCA credit eligibility and real-world carbon outcomes

Enabling compliance and market participation

- Allow qualifying carbon utilization pathways to:
 - Generate CCA compliance value or offset credits, where appropriate
 - Be integrated into industrial and utility decarbonization strategies such that when gas generation coupled with carbon capture would be clearly considered a compliant solution.
- Reduce barriers for projects that combine:
 - capture + utilization + eventual sequestration
 - establishment for the programs and CCA funding mechanism for emitters to apply for deliver significant real decarbonization results
 - Encourage the use of embodied carbon materials as a pathway that would further create a demand for mineralization and other permanently embodied carbon products (i.e. green concrete products used in state, utility or industrial applications would drive demand for the materials and economic pathways for CCUS projects creating a circular carbon economy in WA state).

Economic and innovation benefits

The benefit of such an approach is threefold:

1. Supports development of in-state clean manufacturing and materials industries, including those that the state has already invested in, such as alternative jet fuels.
2. Creates pathways for early-stage CCUS deployment while long-term storage infrastructure develops.
3. Positions Washington as a leader in next-generation carbon management technologies.

3. CETA Alignment and Clarifications

The 2024 Biennial Energy Report recommended clarifying CCS eligibility under CETA. Carbon capture can be a medium-term solution, before the grid moves to all renewables, for both utility power and for onsite power projects (power generated by engines or fuel cells) where the utility serves as the power offtaker. For example, if a developer creates an energy hub that includes gas systems to support industrial or data center activity, and the utility serves as the power offtaker, there is no clarity whether carbon capture for the gas systems would count under CETA as an emissions reducing project.

While this may require legislative action, Ecology could create a methodology and clear criteria. This would not change clean energy targets or timelines, only how qualifying technologies are defined.

CETA alignment (electricity side)

- Define when electricity produced with carbon capture can be treated as “non-emitting electric generation”
- Provide clear compliance criteria for utilities pursuing carbon capture pathways minimizing risks for stranded assets and create a pathway for infrastructure investment with regulatory certainty required for financing assets.

4. CCS Funding

In addition to clarifying existing policy frameworks, Washington should make targeted investments to support the deployment of carbon capture technologies across the state. While recent Commerce analysis highlights the need for greater clarity in how carbon capture is treated under current law, it also underscores a broader challenge: the lack of infrastructure, pilot projects, and market support needed to move these technologies from concept to scale.

Dedicated state funding can help bridge this gap by supporting early-stage projects, expanding carbon management infrastructure, and enabling innovative approaches such as safe subsurface storage pathways. Strategic investments in this space will accelerate learning, reduce long-term costs, and help ensure Washington has the tools necessary to meet its climate and clean energy goals while maintaining reliability and economic competitiveness.

Funding support to carbon capture in industrial facilities and firm power generation (especially onsite generation and energy hubs) can accelerate emissions reductions in the short term. These projects can also support development of clean manufacturing such as green concrete.

Building critical infrastructure

- Fund development of carbon transportation and storage systems, including pipelines and injection capacity
- Support pilot-scale storage and mineralization projects, including exploration of safe, regulated subsurface solutions (e.g., Class IV analogs)
- Address the current lack of regional carbon management infrastructure

Supporting early-stage deployment

- Provide grants or matching funds for:
 - First-of-a-kind carbon capture projects
 - Integrated systems combining capture, transport, and storage

This de-risks projects that are currently not financeable without public support.

Advancing research and regulatory readiness

- Fund technical studies and demonstration projects to evaluate storage pathways
- Support agencies in developing monitoring, reporting, and verification (MRV) capabilities
- Enable Washington to build in-state expertise rather than relying solely on federal programs

Accelerating near-term emissions reductions

- Support deployment of carbon capture at:
 - Industrial facilities (e.g., cement, pulp & paper, refining)
 - Firm power generation resources
- Target sectors that are hard to decarbonize through electrification alone
- Enable immediate, measurable emissions reductions at existing facilities

Overcoming cost and financing barriers

- **Provide grants, tax incentives, or cost-sharing for:**
 - First-of-a-kind and early commercial projects
 - Retrofits at existing plants with significant emissions profiles

Building experience and workforce capacity

- Create real-world deployment experience for utilities, industrial operators, and regulators
- Support development of a skilled workforce in carbon capture and carbon management
- Generate data and lessons learned that inform future policy and regulatory decisions.

We recommend Ecology works together with Commerce and other state agencies to develop a CCUS funding program, clear guidelines, and protocols that align to CCA and CETA goals.

We thank you for your attention and for holding public meetings on this topic. We will be happy to engage on any of these, if Ecology would like more detail.

Best Regards,



Anna Pavlova

SVP, Strategy & Market Development & Sustainability

CarbonQuest