Carbon Capture, Utilization, and Storage (CCUS) Task Force Subcommittee **DRAFT** Recommendations

INTRODUCTION:

As part of the near-term actions in its Greenhouse Gas Pollution Reduction Roadmap, Colorado identified the development & utilization of a Task Force as an important step to better understand the role that carbon capture, utilization, and storage (CCUS) can play in meeting the state's emissions targets. The evaluation includes an inventory of existing initiatives and recent publications that analyze or identify carbon capture, transport, utilization, and storage opportunities in Colorado. In addition to the literature review, the CCUS Task Force broke into several subcommittees to evaluate various aspects of CCUS in Colorado. Specifically the subcommittees researched:

Opportunities: Evaluate the opportunity in Colorado for carbon capture, transport, utilization, and storage.

Resources: Evaluate Colorado's carbon capture, transport, utilization, and storage resources

Issues to Consider: Identify barriers, including economic, regulatory, legal, or other significant barriers, to deployment of carbon capture, transport, utilization, and storage projects in Colorado consistent with achieving Colorado's emissions goals.

Environmental Justice: Environmental justice impacts and opportunities.

Each subcommittee conducted research in each category and identified potential recommendations. ***These recommendations do not have all consensus; areas of disagreement among task force members are noted.***

The State of Colorado, in coordination with the Colorado School of Mines, will be hosting a virtual public engagement session on November 3 from 6:00 p.m. to 8:00 p.m. to review the CCUS Task Force's draft report and solicit feedback—register for the event **here.**
Additionally**,** comments can be submitted using the comment box at the Colorado CCUS Task Force Website (https://www.mines.edu/carboncapture/state-of-colorado-ccus-task-force/) or by emailing coloradoccus@gmail.com. All comments are due by November 15th, 2021

(L) Designates a recommendation that would potentially require legislation.

RECOMMENDATIONS

State Agency Programmatic Support

- Assemble an interagency working group of state agencies involved in CCUS project permitting
- **(L)** Create Regulatory and legal frameworks for the long-term stewardship and oversight of a geologic storage site.
- **(L)** Specifically consider the pore space in saline aquifers a public good used for carbon sequestration. (*There is not consensus from the Task Force on this recommendation. Future*

analysis should be conducted, including a legal definition of a public good, and the recommendation should include community input)

- Designate a staff contact for CCUS permitting from relevant agencies to expedite relevant conversations
- Through the working group, create a reference list of CCUS permitting authorities and the responsibilities of each agency and assign a responsible party for website development and ongoing maintenance.
- Invite representatives from key federal and local agencies to join the working group
- **(L)** Create a clear directive from the administration and/or legislature that signals to state agencies if a CCUS project is a high priority for the state and its climate goals and that calls for thoroughly and efficiently handling permit applications and environmental review
- Among the working group of relevant agencies, assign one agency to act as the coordinator and central point of contact for CCUS project permit applicants and stakeholders
- Assemble a flow chart with steps for state agencies to follow upon receiving a project application, including intended turnaround timelines for each step
- **(L)** For all relevant state agencies, secure adequate staff and resources, potentially through permit and application fees, to ensure sufficient expertise, knowledge, and personnel availability to process permit applications in a timely fashion and ensure the safe and effective regulation of carbon sequestration
- Air Pollution Control Division/Air Quality Control Commission should consider and adopt GHG accounting protocols for CCUS projects

State Incentives

- **(L)** Consider focusing any state incentives on hard to decarbonize industrial sources.
- **(L)** Consider economic incentives for CCUS activity in hard-to-decarbonize sectors of Colorado's economy. Such incentives might include:
    - Investment tax and production tax credits against state, county, or local taxes
    - Direct grants for CCUS project developers
    - State subsidized or guaranteed loans for CCUS activity
    - Sales tax rebates or exemptions for capital equipment purchases
    - Property tax abatements to attract development
    - Alignment with, or matching of, Federal RDD&D financial support for in-state projects
    - Pathways for industrial sources and for electricity generation from natural gas
    - Various pathways for low carbon emission hydrogen sources
    - New carbon capture technologies that become viable between now and 2040
    - Environmental justice and just transition community needs

Siting of CO2 Pipelines & Projects

- **(L)** Create a process for the amalgamation of property rights (i.e. a process comparable to unitization for oil and gas leases) which is needed for cases where pore space rights are owned by private landowners. (These topics are covered in more detail in the COGCC Class VI report.) (*There is no consensus from the Task Force on this recommendation. Future analysis should be conducted and should include community input*)
- Identify clusters of emitters where infrastructure can be sited
- Identify existing infrastructure right-of-ways and ideal locations for potential CO2 pipeline corridors to facilitate future deployment

- Establish a CCUS project permitting dashboard to compile in a single location all the relevant permitting requirements for Colorado CCUS project applicants
- Create a flowchart for project applicants to follow for implementing projects in Colorado
- **(L)** Extend State eminent domain authority for CO2 gathering/transport pipelines
- Identify existing ROWs that could be used for CO2 pipeline deployment
- Inventory/map the current CO2 pipeline network in Colorado and combine with a map locating the available CO2 EOR and know geologic sequestration sites
- Encourage direct coordination between state and local governments for permitting and regulating CO2 pipeline construction and operation standards; consider state level siting authority.
- Develop a regional CO2 transport Infrastructure Action Plan with surrounding states or join existing initiatives
- Construct a backbone of CO2 trunklines with State involvement, such as a public-private partnership, that will link a large collection of CO2 point sources to suitable storage
- Where appropriate, make available Colorado's land/mineral holdings for CO2 pipelines or injection

Coordination and Permitting with Federal Agencies

- In accordance with the results of the COGCC Class VI report to evaluate what resources are needed to ensure the safe and effective regulation of carbon sequestration, and after determining that the state has the necessary funding, regulatory capacity, and other resources for a robust implementation of Class VI, seek primacy for Colorado to administer the EPA Underground Injection Control (UIC) program Class VI injection well permitting program
- Facilitate federal permitting with links and connections to appropriate federal agencies
- Convey the need for staff and resources in Washington DC for federal agencies involved in permitting CCUS projects in Colorado
- Pursue MOUs between state & federal agencies relevant to permitting CCUS projects in CO

Environmental Justice

The CCUS Task Force has developed principles to guide community engagement processes and empower communities to shape CCUS policy. These principles are based on the state's "Climate Equity Principles" developed in the draft Climate Equity Framework, with additional detail specific to CCUS. Importantly, these principles are not exhaustive and should be adapted over time, in coordination with the Environmental Justice Task Force and Advisory Board (and other relevant state resources under 1266), to meet community needs.

Key principles that should be considered are:

- In order to mitigate harms and prioritize benefits, it is important to identify where locations of carbon capture, transport, and storage might affect DI communities and to center those community voices in decision-making
- Governments and industries should pursue meaningful community involvement – early and often in all decision-making – to learn from and respond to community concerns
- Carbon reduction technologies like CCUS must not exacerbate existing harms in DI communities, and wherever possible, should reduce those harms

- CCUS deployment should prioritize environmental, health, and economic benefits in DI communities
- CCUS strategies should reduce pollution in the communities where they are deployed when possible, especially in DI communities