June 24, 2022

RE: Comments on California Air Resources Board (CARB) 2022 Draft Climate Change Scoping Plan

[The Global Carbon Capture and Storage](https://www.globalccsinstitute.com/wp-content/uploads/2022/06/Thought-Leadership-ESG-Reporting-Methodology-to-Support-Investment.pdf) Institute (GCCSI or Institute) is a leading international think tank whose mission is to accelerate the deployment of carbon capture and storage (CCS), a vital technology to tackle climate change and deliver climate neutrality. The Institute's international membership includes governments, global corporations, private companies, research bodies, and non-governmental organizations committed to CCS as an integral part of a net-zero emissions future. The Institute produces an unparalleled source of research, data, and information on all aspects of CCS deployment, offering expertise and knowledge across every aspect of CCS. We appreciate the opportunity to comment on the CARB 2022 Draft Climate Change Scoping Plan.

The Institute applauds CARB's recognition that CCS is a necessary climate change mitigation tool to transition to net-zero. The Institute also appreciates CARB integrating environmental justice into the plan to ensure no community is left behind. The accelerated deployment of CCS is critical for reaching carbon neutrality in the timeframe required. Deployment of CCS cannot happen without frontline community engagement and consultation. But there remains a significant amount of misinformation circulating about CCS. The Institute addresses a few misconceptions by providing some critical facts about CCS.

**CCS is a proven technology**

All components of the CCS chain -capture, transport, and storage - deploy proven technology that has been used for decades commercially. Based on the Institute's internal estimation, approximately 300 million tons of CO2 have been captured and injected underground. Currently, at least 29 CCS facilities are in operation worldwide, with the capacity to capture and store 40 million tons of CO2 per year. These facilities capture CO2 from a wide range of emission sources, including gas processing, ethanol, fertilizer, steel, hydrogen production, and power generation facilities. While there have been some setbacks on individual CCS projects, these are on the same level as those facing other large industrial projects. Overall, CCS has proven to be technically and economically viable.

**CCS is safe and reliable.**

Carbon dioxide has been safely and reliably transported in the United States since 1972, with zero fatalities over its 50-year history. Even in the unlikely event of a leak occurring during transport, there is a minimal human health risk when pure CO2 is released into ambient air because it is not flammable or explosive, nor is it toxic to humans unless the release is catastrophic – very rapid and in extremely high quantities. In addition, CO2 pipelines and other transportation methods are safe and closely regulatorily managed. In the United States, CO2 pipeline safety is regulated by the federal Pipeline and Hazardous Materials Safety Administration.

Additionally, the likelihood of a leak occurring once the CO2 is underground is very low. According to the Intergovernmental Panel on Climate Change (IPCC), CO2 stored in appropriately selected and managed geological reservoirs is 99% likely to remain there for over 1,000 years.

**The cost of CCS is quickly declining.**

 There is a range of costs depending upon the sector application of CCS. The CCS costs are decreasing as the breadth of deployment increases, and additional policy and financial incentives are made available. CCS has seen rapid growth and reduced costs in recent years thanks to new business models and increased government and private sector R&D. The evolving business models include the development of CCS networks (the hub and cluster approach), where multiple sources of CO2 share transportation and geologic storage infrastructure.

With more than 140 CCS facilities developing globally, costs are projected to decline even further with economies of scale. The IPCC found that it would be, on average, 138% more expensive to reach global climate goals without the deployment of CCS being part of the mitigation approach.

**CCS is a necessary tool for reducing the emissions of hard-to-decarbonize sectors.**

Even in a best-case scenario where the world rapidly reduces fossil fuel consumption and halts any additional development, the IPCC, and the International Energy Agency (IEA) both agree that CCS will still play an essential role in reaching climate targets because it is the only option for decarbonizing several non-energy sectors that are fundamental to modern society, such as cement, steel, chemical, and fertilizer production.

**Consultation with Communities is essential.**

Combating the climate crisis requires accelerating the deployment of decarbonizing technologies such as CCS for the hard-to-abate industries. This deployment must be multi-pronged and cross-sectorial, involving financial entities, scientists, engineers, labor, NGOs, policymakers, youth, and frontline communities. Involvement of frontline and environmental justice communities, Native Americans, and low-wealth communities must be front and center in all phases of climate mitigation utilizing CCS if reaching net-zero within the required timeframe will be achieved. A just transition to a carbon-neutral society requires this intentional engagement such that there are no stranded individuals or communities.

**Conclusion**

The accelerated deployment of carbon capture and storage is a critical piece of the solution to addressing climate change and transitioning towards net-zero.

* CCS is a proven technology and is safe.
* The cost for deployment is declining.
* Inclusion of frontline, environmental justice, and low-wealth communities during all phases of planning and deployment of CCS is essential.

Misinformation about CCS must be dispelled and replaced with science, and the evidence derived from operating facilities. Time is running out. Future generations and just transitions to carbon neutral economies depend upon the implementation of sound policies today.

The Institute appreciates the opportunity to comment on CARB's 2022 Draft Climate Change Scoping Plan. Please contact Ruth Ivory-Moore at ruth.ivory-moore@globalccsinstitute.com  with any questions.