

MCEA POSITION ON CARBON CAPTURE AND STORAGE FOR THE ETHANOL INDUSTRY



How does carbon capture and storage work in the ethanol industry?

Carbon capture and storage (CCS) captures carbon dioxide (CO₂) created during the production of ethanol, compresses it from a gas into a liquid form, transports it at very high pressures via a network of underground pipelines to rock formations, and then injects the CO₂ into the rock where it is stored in perpetuity.

What is happening with CCS in Minnesota?

Two CCS projects have been proposed in Minnesota that, combined, would capture and transport CO₂ from seven Minnesota ethanol plants to rock formations in North Dakota and Illinois for storage. These two projects would require more than 250 miles of new CO₂ pipeline to be built underground in Minnesota. The two project developers (Navigator and Summit) claim the CO₂ from their pipelines will be stored in rock and will *not* be used for a process known as “enhanced oil recovery,” where CO₂ used by the fossil fuel industry is injected into oil wells to try and achieve higher oil extraction rates. However, there is no guarantee that the captured CO₂ would not be used for this purpose, and one of the proposed pipelines runs past existing oil wells. We expect the proposals by Navigator and Summit are just the beginning, and more CCS projects will likely be proposed in Minnesota in the future given the substantial tax incentives offered to pipeline companies through the federal Inflation Reduction Act for CCS projects.

Is CCS good or bad?

Proponents of the proposed CCS projects argue the technology will benefit Minnesota by reducing greenhouse gas emissions, creating jobs, and generating profits for local industries, particularly ethanol.

However, the proposed CCS projects could harm Minnesota by:

- Incentivizing land conversion to corn production for ethanol, resulting in increased water pollution and carbon emissions from soil
- Causing soil compaction on pipeline routes, which can reduce crop yields
- Harming public health and safety when pipes leak since CO₂ is an invisible and odorless asphyxiant that can displace oxygen when leaked in large quantities, causing breathing difficulties, headaches, mental confusion, and, in very high concentrations, convulsions, coma and death
- Causing soil contamination and water pollution risks when pipes or injection wells leak because these leaks can decrease the PH and increase the turbidity of underground water sources beyond the limits considered safe for drinking water
- Disrupting communities already harmed by fossil fuel pipelines, and
- Prolonging reliance on fossil fuels and discouraging the use of more effective climate solutions like electrification

Is CCS for ethanol a compelling climate solution?

No. Although analyses performed by the Intergovernmental Panel on Climate Change (IPCC) suggest some CCS for hard to electrify industries (i.e., cement, steel, chemicals) may be needed to meet long term emission reduction targets, ethanol production is not one of those industries. Additionally, the performance of CCS in the real world has not yet come close to capturing the amount of CO₂ assumed by the IPCC in their modeling. For example, the IPCC and others have assumed the technology will capture 90% of emissions, but the most successful ethanol CCS project in the United States (applied to the Archer Daniel Midland ethanol plant in Illinois) captured only 11% of total plant emissions and was very expensive. What's more, even if CCS technology was applied to all the ethanol plants in the entire country and achieved 100% capture rates, it would still only deliver a less than 1% reduction in national greenhouse gas emissions. By contrast, electrifying all newly sold light duty vehicles by 2035 and all newly sold medium and heavy-duty vehicles by 2040, in line with what the United States has committed to, will reduce national greenhouse gas emissions by 9% without prolonging reliance on fossil fuels or posing significant risks to public health and safety, community stability, land preservation, or soil and water health.



MCEA's position on Carbon Capture and Storage

MCEA does not support CCS for the ethanol industry because the use of this technology does not provide significant benefits in terms of emission reductions and can cause significant social and environmental harm. Electrifying vehicles will produce greater emission reductions from the transportation sector at a lower social and environmental cost than using CCS at ethanol plants. While MCEA values pursuing multiple climate solutions at once, the negligible climate benefits of CCS for ethanol coupled with the effect this will have on reducing the use of better climate solutions like electric vehicles makes this a false climate solution, and potentially, even a climate detriment that we cannot support. However, we recognize that CCS technology may play an important role in decarbonizing hard to electrify industries like cement, iron/steel, and chemicals, and will continue to monitor the evidence on how this technology performs in these contexts. MCEA believes all CCS pipeline projects, regardless of the industry to which they are applied, should undergo the fullest possible environmental review.

Resources and further reading:

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