Making Every Point Matter

Ethanol Producer Magazine's editor previews the feature articles in the publication's March issue, including stories about carbon capture and sequestration on the High Plains, energy-neutral dehydration and efforts to validate broader use of E30.

Tom Bryan, Editor, Ethanol Producer Magazine | February 15, 2023

The passage of the Inflation Reduction Act is turbo-charging our industry's involvement in carbon capture and sequestration—not to mention utilization—and helping define our role in the production of sustainable aviation fuel. Both CCS and SAF appear in our coverage this month, as we continue to chronicle the industry's myriad carbon capture efforts, from aggregated and stand-alone sequestration to conventional and novel forms of CO2 transformation, sprouting up across the nation.

Ethanol plant CCS is a coveted play for developers, as our industry's fermentation CO2 is remarkably pure, making it easy to transform, move and store. Our facilities are truly the "low-hanging fruit" of industrial carbon capture, and ideal entry points for developers with broader ambitions. Indeed, that's the case for Colorado-based Carbon America, the focus of "Capturing Close to Home." The company is working with Colorado Agri Products, which runs two plants in northeast Colorado and another in Nebraska. While Carbon America wants to eventually develop CCS for hard-to-abate industries like power generation and cement manufacturing, it is starting with ethanol plants because they are "lower cost, faster deployment" opportunities. It makes sense. CAP is a proverbial Goldilocks zone partner—just the right size, just the right geology near its plants, and just the right kind of business to work with. And thanks to the IRA's passage, a hefty tax credit for CCS (now $85 per ton) makes the economics pretty ideal, too.

Ultimately, doing CCS could lower the carbon intensity (CI) scores of each CAP ethanol plant by 25 points or more, which would add tremendous value to their ethanol in California and other low-carbon fuel markets. CI reduction is an almost ubiquitous thing in ethanol production right now, and while few investments can lower CI as much as sequestering fermentation CO2, reducing fossil fuel use by installing renewable energy, not drying distillers grains and increasing process efficiencies can add up to double-digit CI reduction. Knowing that, Whitefox Technologies is helping producers shed as much as eight CI points by decarbonizing their dehydration centers. As we explain in "CI-Reducing Dehydration," the

company's engineered membrane systems for dehydration, a proven platform called ICE, just got upsized. ICE XL—a complete replacement of molecular sieves—reduces steam consumption in DD&E to 8,000 Btu per gallon (25 percent less than normal), delivers better heat integration into the process and helps reduce natural gas consumption by up to 50 percent. It's no coincidence that the first adopter of ICE XL is Western Plains Energy LLC, which is on a fast-track to net-zero.

Finally, be sure to read "Gazing Higher: The Quest for E30," which highlights parallel efforts in South Dakota and Nebraska to demonstrate the use of E30 in non-flex-fuel vehicles. The Nebraska Ethanol Board and, separately in South Dakota, Glacial Lakes Energy LLC have both been collecting data on hundreds of vehicles refueling with 30 percent ethanol blends (a fuel that's technically intended only for FFVs). E30 is fascinating because it has the octane value automakers need, the emissions profile climate hawks desire, and the price consumers are drawn to. And while E15 is our industry's top priority, the possibility of bringing E30 along for the ride is a tempting proposition.

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