

A N N U A L R E P O R T

22

LETTER FROM ACE BOARD PRESIDENT

Dave Sovereign



As I look forward to 2023 through my eyes as both a farmer and a director on an ethanol plant board, I can't help but be excited about the future. People often seem to label me as an optimist (sometimes an instigator), but it appears ethanol is

gaining some of the respect I wrote about last year that was missing in greenhouse gas and carbon reduction conversations. It is becoming obvious corn ethanol is part of the climate solution and a necessary molecule in our transportation fuels as a low carbon alternative to petroleum. The sooner ethanol producers can account for the climate smart practices farmers are currently implementing, the quicker ethanol can claim recognition as a zero-carbon fuel. Crediting the work farmers are doing at the feedstock level, along with the ever-increasing efficiencies in ethanol production and the adoption of carbon capture and sequestration technologies means ethanol as a transportation fuel can reach net negative carbon emissions. An achievement no other transportation fuel can make a claim to.

While watching a program on television recently one of the characters remarked she felt that "today people don't care to be informed, they just want to win the argument."

That may be true, but as leaders and supporters of this ethanol industry, we know it is imperative to be engaged with policy makers, both longtime friends and newly elected legislators, ensuring they are informed and as excited as we are to win this argument. Call on your legislators as they visit your community, participate in ACE's Washington DC Fly-In March 29-30, 2023 and tell your story, we have such a great story to tell!

Testimonials OF ACE MEMBERSHIP



"ACE is a leader in articulating how ethanol can be part of the carbon economy. Badger State Ethanol appreciates the role ACE plays in driving the

discussion about clean fuel policy at the local, state, and federal levels."

- Erik Huschitt • CEO, Badger State (WI)



"Absolute Energy is incredibly proud to be a member of ACE and I am grateful to be a member of their Board of Directors. I have always believed ACE

punches far above its weight and gets things done for the ethanol industry."

- Rick Schwarck, CEO Absolute Energy (IA)



"I became involved with **ACE through its grassroots** fly-in, which enabled me to experience firsthand the positive difference individuals can make for

ethanol when we stand up and speak out for our industry in DC."

- Scott McPheeters, KAAPA Board Member (NE)

KEY ACE ACTIONS

E15 year-round

ACE's most urgent priority is capitalizing on ethanol's ability to reduce pump prices and emissions to secure uninterrupted market access for E15 on a year-round basis.

We are strongly supporting the Midwest states that have petitioned EPA to allow E15 year-round. We expect EPA will take action to allow E15 year-round in these states before the 2023 summer driving season.

ACE is also strongly supportive of bipartisan legislation pending in Congress to ensure nationwide and permanent market access for E15. Recently the American Petroleum Institute joined the growing chorus of voices in support of this legislation.

Increasing Ethanol Demand Through New Clean **Fuel Markets**

ACE continues to proactively advocate for new technologyneutral clean fuel policies at the state and federal level that will ensure a growing market for low carbon ethanol even as overall petroleum use declines.

Clean fuel policy generally sets a schedule for gradually reducing the carbon intensity (CI) of transportation fuel sources over time. Because a CFS is technology-neutral, it would level the playing field and open markets for new fuel choices that can be used in several transport applications.

Progress continued in states such as Minnesota, Nebraska, Ohio and Illinois in 2022 and additional states and regions of the country are seriously considering new policies to reward fuels based on their carbon intensity in 2023. ACE is at the table as these discussions unfold to ensure corn ethanol is treated fairly and there are carbon credits for climate-smart agriculture practices and opportunities to increase demand for E15 and higher blends.

ACE is also an active participant in a diverse group of clean fuel stakeholders at the national level, the Drive Clean



Initiative, to urge Congress to move forward on a marketbased, technology-neutral clean fuel standard in 2023 which would increase ethanol demand.

Ensuring Farmers and Ethanol Producers Get Credit for Climate-Smart Agriculture

ACE is leading the effort to ensure the ethanol industry and farmers can better monetize the climate benefits of ethanol in existing and new clean fuel markets. Our Board of Directors has committed to support policies recognizing ethanol is part of the climate and health solution while crediting farmers and ethanol producers for activities which help reduce GHG emissions by at least 70% compared to gasoline by 2030 and reach net-zero lifecycle GHG emissions by 2050. ACE is working to make this commitment a reality through policy development and real-world validation of GHG benefits of climate-smart agriculture practices at scale.

In 2022 we made progress with our Dakota Ethanol, LLC pilot project to: (1) incentivize farmer adoption of climatesmart practices, (2) partner with land-grant university



ACE CEO Brian Jennings speaking to farmers about the benefit of "climatesmart" practices on ethanol's carbon intensity.



"I am proud and privileged to serve on the ACE Board of Directors and have especially been grateful for the role ACE plays in promoting the low carbon

benefits of corn ethanol, most recently through the new Carbon Intensity Calculator. Some of the most satisfying work I have ever done is collaborating with ACE staff and members to highlight how ethanol is part of the climate solution."

- Ron Alverson, Dakota Ethanol (SD)

scientists and Sandia National Laboratory to collect data to measure, verify, and model the resulting soil and GHG benefits, and (3) use the data to help ethanol access clean fuel markets. It is estimated that shifting from conventional tillage to no-till "climate-smart" practices in the counties around Dakota Ethanol would reduce 91,000 metric tons of GHG emissions per year, or the equivalent of removing 20,000 cars from the road. If clean fuel markets credited these GHG benefits, farmers in the grain shed would reap 39-49 cents per bushel. This potential economic return has resulted in significant farmer appeal. In fact, farmer interest is nearly triple available funding for the program.

The data ACE collects through this project will increase the confidence in current models used to quantify soil carbon sequestration and nitrous oxide emissions, and the impacts of crop yield, tillage intensity and nutrient management on biofuel GHG emissions.

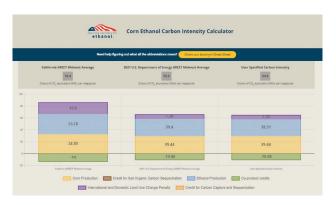
In 2023 ACE will work to expand this effort to benefit nearly a dozen ethanol plant members and farmers in 162 counties we selected around the country to capture the soil, precipitation and temperature variability needed to refine the GHG data assumptions underlying these climate models to allow them to be used in LCFS programs.

We did an analysis to show what the maximum potential economic benefit would be for ACE-member plants and the farmers supplying corn to them if the full suite of climatesmart practices were monetized in a clean fuel market and the number is just shy of \$1 billion per year.

ACE Calculator Demonstrates the Economic Value of Carbon Reductions

In 2022 we introduced a new carbon intensity (CI) calculator to help our members understand how changes in their farming or ethanol operations can impact the carbon footprint and economic value of ethanol in clean fuel markets.

ACE's calculator allows users to break through any confusion around CI by using their own corn farming and ethanol production information to estimate a carbon score and compare it to the Argonne National Laboratory's GREET model and average scores used by the California Low Carbon Fuel Standard. ACE's detailed Carbon Intensity Calculator can be found at ethanol.org/calculate-ci.



ACE's new Carbon Intensity Calculator can be found at: ethanol.org/calculate-ci

New Tax Credits and Incentives to Boost Ethanol Use

Late in 2022 Congress adopted sweeping legislation containing nearly \$400 billion in new climate provisions, including many new tax credits and incentives which will help ethanol producers and farmers earn a return on their investments to innovate and reduce carbon emissions.

This legislation will provide half a billion dollars for E15 and E85 infrastructure, invest \$18 billion to support climate-smart agriculture, reward fuels like ethanol with a new clean fuel

production tax credit based on carbon intensity, establish a new sustainable aviation fuel tax credit based on carbon intensity, and give a big boost to projects which capture and sequester carbon.

During 2023 ACE will work to ensure maximum benefits for our members as these new incentives are implemented.

Promoting and Defending the Renewable Fuel Standard (RFS)

The RFS can be a powerful tool for increasing ethanol demand if EPA follows the law as enacted by Congress. Unfortunately, EPA has too often found ways to mismanage the program and limit ethanol market share. As the year came to a close, EPA proposed multi-year blending targets for calendar years 2023-2025, hoping to provide better market certainty.

While it is positive EPA is calling for 15.25 billion gallons of conventional biofuel blending each year on paper, ACE will remain vigilant to ensure the actual blending targets support physical demand of E15 and E85 in the marketplace. We will also continue to call for EPA to adopt the latest GREET model to determine lifecycle GHG emissions, to refrain from waivers which undermine demand, and unite with our allies in biofuels and agriculture to defend the RFS in the courts.



"Highwater Ethanol has been a long-time member of ACE because they have been so effective at developing new markets for E15 and E85, and we

are strongly supportive of their recent efforts to expand the use of higher blends of ethanol through new clean fuel policies and making sure farmers get credit for climatesmart practices."

- Brian Kletscher, CEO Highwater Ethanol (MN)





KEY INDUSTRY ISSUES

As an extension of ACE's public policy emphasis on carbon, ACE's market development efforts continued to promote ethanol and higher blends like E15 and flex fuels to fuel marketers as lower carbon "future fuels" already available in the marketplace, bringing the low CI fuel messaging to the forefront in 2022. ACE also added emphasis on E85 as the lowest carbon fuel available today - showing retailers, fuel distributors, and anyone else who will pay attention that flex fuel vehicles running on E85 currently produce fewer lifecycle greenhouse gas emissions than the average plug-in electric vehicle and are likely to reach zero carbon emissions before any other fuel/vehicle platform. Our Hybrid Electric Flex Fuel (HEFF) demonstration project goes a step further, showing a conventional hybrid with E85 capability can beat any plug-in EV in the race to net zero CI (see HEFF update on page 7).

Trade Shows

Returning to a nearly full slate of petroleum and c-store trade shows in 2022, Chief Marketing Officer Ron Lamberty says marketers showed increased interest in low carbon fuels and how ethanol fits in the discussion. "It's a combination - some are apprehensive about how proposed changes in vehicle and fuel regulations could affect their operations and are worried they won't be able to afford to compete in a low carbon fuel marketplace. Others see opportunity in being among the first to offer low carbon fuels," Lamberty said. "They know ethanol - but they're finally beginning to understand higher blends are reduced carbon fuels most can sell without expensive upgrades, and we're showing how E85 is creating massive sales and profits for the retailers aggressively promoting it in the current high-priced gasoline market."

Retail market opportunities were created with "RIN-less" ethanol prices well below gasoline most of the year, after refiners took advantage of public expectations of high prices following Russia's invasion of Ukraine and ongoing talk of supply chain issues. Based on highest-ever oil company profits in 2022, costs never actually increased to the level those companies used to justify their confiscatory "market" pricing. Meanwhile, E85 could be found at retail prices \$1.50 to \$2.00 less than E10, and \$3.00 less in California, where low carbon fuel standard credits reduced E85 cost even more. And even with large discounts at the pump, retailers were earning better margins on high-ethanol blends than any grade of gasoline or diesel fuel.



"Pearson Fuels' relationship with ACE goes back to our company's founder and ACE's interest in the original Pearson Fuels'

station in San Diego. ACE shared their experience in the E85 business along with what they had learned from other successful ethanol marketers, and Pearson shared what was working for us and what the ethanol industry could do to help us sell more E85. ACE has connected us with people and programs to help fund part of our expansion, and Pearson Fuels has leveraged those funds to become the largest E85 distributor in the US, creating more high blend ethanol gallons than any other marketer in the nation."

- Greg Jones - Director, Business Development, Pearson Fuels

ACE's "low carbon is now with ethanol" message was displayed at tradeshows and workshops, advertising in c-store industry publications and on flexfuelforward.com. Flexfuelforward.com shares success stories from ACE's broad base of marketer partners who have had success selling higher ethanol blends, with prospective E15 and flex fuel marketers. Contrary to misinformation about high costs of adding E15 and increased liability from selling high ethanol blend fuels that station owners have been fed for over a decade by the oil industry, ACE's platforms provide real-world proof fuel marketers can offer E15 and E85, quite possibly using equipment already under their canopy. The Flex Check compatibility tool on the website was accessed by thousands of retailers who wanted to find out if they could sell E15 using existing infrastructure - with many of them coming directly from a link on EPA's Emerging Fuels and Underground Storage Tanks page, which lists Flex Check as a "resource for determining equipment compatibility and meeting federal requirements for storing biofuels."

HBIIP Update

For the few marketers who can't use existing equipment and others who choose to take advantage of federal grants available for equipment used to sell higher ethanol blends, ACE provided information on applying for the US Department of Agriculture's (USDA) latest round of Higher Blends Infrastructure Incentive Program (HBIIP) grants, including updated videos breaking down the process and explaining changes from earlier rounds. The videos featured Jeff Carpenter, USDA's HBIIP Manager, who has worked with Lamberty to help retailers obtain hundreds of grants in previous versions of the program. Carpenter reached out to Lamberty early in 2022 for input on improvements to make HBIIP more accessible to single store retailers and small chains, took part in the HBIIP Retailer Workshop that kicked off The ACE conference in August, and helped explain the program to retailers who stopped by ACE's booths at trade shows following USDA's September announcement of \$100 million in new HBIIP funds. Changes in advertising promoting HBIIP and upgrades to the website resulted in a tripling of retailers who contacted ACE during the HBIIP application process.



"ACE helped us understand RINs and how we can be more profitable selling higher blends of ethanol, and after our business took off, ACE came back to learn

how we succeeded in selling more ethanol than either of us expected. ACE values retailers and is truly collaborative - sharing their experience in the industry along with what they've learned from fuel marketers, asking for our input on ethanol retailing and important policy issues, even welcoming us to serve on their board to provide insight on what's important to the retailers who actually sell ethanol to consumers."

- Randy Gard, COO Bosselman Enterprises/ Pump & Pantry Convenience Stores



ACE again assisted marketers who applied for grants for nearly a hundred new retail locations, as well as several blending facilities.

Some high-blend retailers made a last-minute decision not to apply for HBIIP funds after the Inflation Reduction Act included \$500 million dollars of up to 75% federal cost share for renewable fuel infrastructure, as opposed to the 50% offered by the 2022 HBIIP program. USDA held a listening session for input from interested parties on the new program, and ACE contributed written comments and encouraged retailer partners to do the same. Whether interest in future IRA funds reduced 2022 HBIIP grant applications or not, it's safe to say interest in future rounds is already building.

HEFF Update

With all the talk of "net-zero" vehicles, and with netzero generally understood to mean battery electric vehicles (BEVs) only, ACE set out to disrupt the discussion with a real-world Hybrid Electric Flex Fuel-powered vehicle (nicknamed "HEFF") which, when operating on E85, would have lower lifecycle greenhouse gas (GHG) emissions than the average plug-in electric vehicle today.

According to the latest GREET model, a conventional hybrid emits 294 grams of GHG per mile using gas, but only 209 grams per mile fueled by E85. The average Midwest BEV emits 234 grams per mile on the same scale. When carbon intensity (CI) scoring reflects carbon-reducing farming practices already in use, and those adopted over the next several years, coupled with ongoing efficiency improvements in ethanol production, HEFF will reach netzero long before EVs - and at a fraction of the cost of luxury vehicles dominating the electric vehicle market.

After one year of operation following conversion of the 2019 Ford Fusion Hybrid, HEFF's real-world lifecycle GHG emissions using an average of E71 and operating roughly 20% below EPA's estimated "new" efficiency on all fuels due to reduced battery capacity, were not as low as the model's projections, but were 26% lower than the same vehicle actual emissions using gasoline, and 62% lower than a 2019 Ford Fusion non-hybrid. Anecdotal reports from BEV drivers of vehicles the same age as HEFF suggest



"I always look forward to attending the ACE Conference because of the timely and relevant speakers and topics and the opportunity for

meaningful dialogue with other players in the ethanol industry."

- Bill Dartt, CFO Cardinal Ethanol (IN)



ACE Chief Marketing Officer Ron Lamberty's 2019 Ford Fusion Hybrid; "HEFF".

they experience similar reduced range, meaning the hybrid flex-fuel combination still likely emits lower GHGs than the typical BEV.

As an added bonus, even after adjusting for lower flex fuel MPG, fuel cost was 7/10ths of a cent per mile lower than if the vehicle were running on regular E10, and nearly double that savings during 3rd and 4th quarters of year one. That translates to a savings of 19 to nearly 40 cents per gallon.



"As one of the newest facilities in the U.S., **Ringneck Energy is** working to capitalize on our efficiency and low carbon score to maximize a return in clean fuel

markets. We are proud to join ACE because they are proactively advocating for new clean fuel markets which will increase demand and highlighting how modern farming practices and other technological advances make ethanol the only low carbon fuel with the ability to attain net-zero and even net-negative **GHG emissions.**"

- Walt Wendland, Ringneck Energy (SD)



Accelerating

ETHANOL DEMAND

ACE's Accelerate initiative is our roadmap for sparking new demand for ethanol, built upon the three pillars below. We've highlighted a few ways the Accelerate plan was put into action in 2022.

1. INCREASING DEMAND AND VALUE THROUGH NEW CLEAN FUEL POLICIES



RCPP - ACE's historic Regional Conservation Partnership Program (RCPP) to compensate farmers for climate smart practices and validate greenhouse gas (GHG) reduction benefits of those practices, will help ethanol plants demonstrate lower carbon intensity to secure low carbon fuel pathways. In partnership with USDA Rural Development, Dakota Ethanol, South Dakota State University, South Dakota Corn Growers, and others, ACE held an introductory meeting in January attended by more than 100 farmers, and a follow-up meeting in September to discuss specifics. Began oneon-one communication with farmers interested in participating in ACE's RCPP project in November.



CARBON INTENSITY CALCULATOR - Introduced a new carbon intensity (CI) calculator to help ACE members and others understand the CI of farm and ethanol operations and the economic value of reducing CI for clean fuel markets. Also unveiled a simplified CI calculator to raise awareness among those less involved in farming or ethanol production but curious about factors impacting the CI of ethanol. Combined, these tools help illustrate corn ethanol's ability to attain net-zero and net-negative greenhouse gas emissions.





ETHANOL CI MODELING - Led by former ACE President and current board member Ron Alverson, ACE continues to interact with Argonne National Labs, providing input on annual GREET updates. ACE also submitted comments to the California Air Resources Board (CARB) recommending the next CA-GREET model, which underlies the state's LCFS program, recognize farming practices and other methods of soil carbon sequestration. Pushed EPA to update its lifecycle GHG emissions to meet climate goals by properly crediting ethanol's GHG benefits.



EARNING SUPPORT FROM PARTNERS FOR

CLEAN FUEL POLICY - Participated in the launch of the Drive Clean Coalition, a diverse group of stakeholders committed to introducing national clean fuel policy in Congress and spoke to fuel marketers at OPIS LCFS and Carbon Markets Workshop in San Diego about efforts to advance ethanol's carbon intensity reduction potential.

2. PROTECTING AND SUPPORTING EXISTING POLICY-DRIVEN MARKETS



E15 YEAR-ROUND - Saluted President Biden directing EPA to issue emergency waivers allowing E15 to be sold year-round for the 2022 summer driving season and encouraged EPA to respond to a request from a bipartisan group of Midwest governors that would ensure E15 availability yearround in their states. ACE thanked the governors, and pressure from their request led API to support legislation to apply the current 1-lb RVP waiver for E10 to blends above 10%. Rallied over 100 industry advocates to call on their members of Congress to support E15 legislation.

EPA - Encouraged EPA to revise their proposed RFS rulemaking for 2020-2022 compliance years to support the statute and decarbonization goals. Joined biofuel and ag leaders in responding to EPA's decision to reverse 31 small refinery exemptions (SREs), provided feedback in support of the Agency's proposal to deny those petitions, and 69 additional SRE petitions later in the year. Thanked bipartisan group of senators for urging EPA to maximize the use and benefits of biofuels when it comes to the RFS Set proposal.

INFLATION REDUCTION ACT - Highlighted several climate and ethanol-related provisions included in the Senate-passed budget reconciliation legislation, the Inflation Reduction Act of 2022, and held webinars to inform ACE members about opportunities offered by IRA 2022.

3. DEVELOPING DOMESTIC AND INTERNATIONAL MARKETS



FLEXFUELFORWARD.COM WEDSITE -

Updated flexfuelforward.com website and advertising to promote E15 and E85 as low carbon fueling options, responding to retailers' uncertainty and concern about having to invest in electric charging infrastructure or otherwise adapt to a

low carbon fuel future. Added a sign-up feature to allow marketers to receive notification when Higher Blends Infrastructure Incentive Program (HBIIP) program is announced.



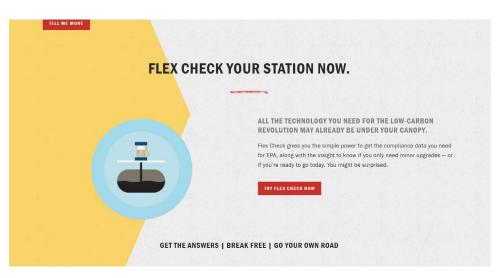
MARKETER OUTREACH - Attended regional petroleum marketer and c-store tradeshows, attended by marketers from nearly every state and several foreign countries, to assist and educate fuel retailers who expressed interest in equipment compatibility with higher ethanol blends, marketing of E15, and the 2022 round of HBIIP funding.



HBIIP - Hosted an E15 and Flex Fuel Retailer Workshop featuring the manager of the USDA HBIIP grant program, Jeff Carpenter, two of the nation's most successful E15 and E85 marketers, grant writers, and other industry spokespeople to help retailers understand higher blend opportunities and obtain grants for new dispensers and other equipment, and updated fuel retailer outreach advertising to emphasize HBIIP funding availability.



CARBON MARKETS - Moderated a panel at the inaugural National Carbon Capture Conference & Expo about the potential impact of carbon capture and storage on the renewable fuel industry.



The flexfuelforward.com website was updated to help retailers see E15 and E85 as low carbon fuel options.



Ongoing work with US Grains Council, help with equipment displays, sponsorship and staffing for ethanol pavilion at the India Auto Show in January 2023.

ACE STAFF AND **Board Leadership**



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New to ACE Staff

Anna Carpenter and Ashley Borchert joined the ACE team in 2022. Anna serves as our Member Services Coordinator and will be our primary point of contact for members. She looks forward to meeting you. As our Communications Manager Ashley manages our social media and helps write our member newsletters.

ACE New Members for the Year of 2022

Ethanol Producing Members

- Ringneck Energy
- Lincolnway Energy, LLC
- Bosselman Enterprises

Voting Members

- GEVO
- HTP Energy
- PrairieFoods
- Wilkinson Fuel Carriers
- eFlexFuel Technology



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with the latest ethanol industry news in 2023 with ACE's bimonthly publication Ethanol Today on www.ethanoltoday.com!



SAVE THE DATES



2023 ACE Washington, D.C. Fly-In & Government Affairs Summit: March 29-30, 2023



2023 ACE Conference: August 23-25, 2023 Minneapolis, MN

More Information & Event Updates Available on www.ethanol.org/events

Timely Webinars Offered Throughout 2023

