2024 State of the Ethanol Industry Report
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(As Prepared for Delivery)

Good morning! Welcome to the 29th annual National Ethanol Conference!

I want to thank Erik Huschitt for that kind introduction, and I want to express my gratitude for his steady leadership and remarkable vision as our chairman.

I have truly enjoyed working with Erik to lead the RFA to new heights. He's been an incredible partner.

And that's what we're here to talk about this year: the power of partnerships.

I want to start with a story about a shy, scrawny 16-year-old named John. With some of his high school classmates, John started a band and he dreamed of someday becoming a world-famous songwriter and musician. One day at a church concert, he met an outgoing 15-year-old named Paul who also played guitar and sang. John was so impressed with Paul's performance, that he asked Paul to join his band—the Quarrymen. And the rest is history.

Of course, I am talking about John Lennon and Paul McCartney, founders of the most popular band in the world, owners of the most Billboard Number One hits, and universally considered to be the best pop music songwriting duo ever.

Years after that first encounter, John said that from the minute they met, he realized Paul was a much better musician and performer. But John also knew that his own songwriting talents, his penchant for a catchy melody, and his ability to convey deep emotion through his lyrics were strengths he could bring to the partnership. John and Paul were very different personalities with different skills, but they were great collaborators. They knew how to complement one another, how to make each other better, and how to combine their talents to ensure success.

They also trusted one another. While they were still teenagers, they agreed that all of the songs they would write--whether individually or jointly--should be credited to both of them. They faithfully honored that commitment until the Beatles finally broke up in 1970.

It wasn't always easy. There was often tension between Paul and John. They didn't always see eye-to-eye. And when the Beatles famously disbanded, it wasn't pretty.

But while it lasted, Lennon and McCartney had a legendary and magical partnership that was greater than the sum of its parts. Their alliance and chemistry resulted in some of the best music ever recorded and made the Beatles the most successful band on the planet.

That's how strong partnerships work. They are grounded in common values and goals, mutual respect and trust, and the experience and knowledge that each partner brings to the table.

But strong partnerships are hard work—and they do involve tension. Each partner must be truly committed to listening to, and learning from, the other. Good partners not only share successes; they also share ownership of missteps and failures. And they are willing to challenge, and be challenged by, one another.

Just like Paul and John, we've had our share of success in the ethanol industry. Over the past five decades, the industry has achieved numerous policy, regulatory, and marketplace victories that have continuously propelled us forward.

We've grown from a handful of small facilities making several million gallons of ethanol to nearly 200 cutting edge biorefineries with the ability to produce almost 18 billion gallons of high-octane, low-carbon liquid fuel, tens of millions of tons of nutritious animal feed, and billions of pounds of captured CO2. **None of those successes would have been possible without the industry's valuable partnerships and ability to work together with a diverse group of stakeholders.**

Throughout the history of the industry, RFA led the effort to forge alliances with agriculture, automakers, mechanics, petroleum companies, fuel retailers, government agencies, lawmakers, environmental and health groups, academic researchers, consumer groups, military veterans and many others to help advance the industry and promote the benefits of renewable fuels.

With groups like the American Lung Association, RFA created a powerful bipartisan coalition that secured passage of Clean Air Act amendments in 1990, establishing the reformulated gasoline program to reduce smog.

About a decade later, RFA teamed up with clean water advocates and health organizations to push for state-level bans on the toxic gasoline additive MTBE, opening the door for ethanol to serve as the primary octane and oxygen booster in gasoline.

In 2005, a landmark agreement and partnership between RFA and the American Petroleum Institute paved the way for passage of the world's first Renewable Fuel Standard.

Two years later, RFA collaborated with environmental groups like the Natural Resources Defense Council to secure adoption of the RFS2, which created the first-ever carbon standard for fuels and solidified the foundation of today's ethanol industry.

And for years, RFA has united with fuel marketers on initiatives to expand the availability of lower-cost, lower-carbon ethanol blends like E15 and flex fuels like E85. Of course, the U.S. Department of Agriculture has also been an important partner in that effort.

The ethanol industry's partnerships expand well beyond our borders. RFA joined forces with the U.S. Grains Council, foreign biofuel producers, clean air advocates, scientists, consumer groups, government officials, fuel suppliers, and automakers all over the world to grow the global marketplace for renewable fuels. Many of our international partners are here today and we thank you for your continued friendship.

And since the very first drop of fuel alcohol was made in this country, ethanol producers have always walked side by side with our most important partner: the American farmer. Through every success and every setback, farmers have been the ethanol industry's most effective and steadfast ally. Together with our friends at the National Corn Growers Association, state corn organizations, National Farmers Union, Farm Bureau, National Sorghum Producers, and so many others, we have lifted rural communities across the country and rejuvenated the farm economy through the power of renewable fuels.

All of these successful partnerships got us to where we are today as an industry.

And where we are today is a pretty good spot.

In fact, 2023 was one of the best years in the industry's history.

Production hit 15.6 billion gallons – the highest level since 2019 and the fourth-highest ever.

Driven by record sales of E15 and E85, ethanol's share of the gasoline pool hit an all-time of 10.4 percent.

Ethanol biorefineries generated a record 4.3 billion pounds of distillers corn oil and almost 35 million metric tons of distillers grains and other animal feed, adding $11.4 billion to the industry's gross revenue.

U.S. ethanol exports hit 1.43 billion gallons—the third-highest ever, even as previous top markets like Brazil and China remained closed to U.S. product.

And as detailed in a study released here yesterday, the U.S. ethanol industry again made enormous contributions to the U.S. economy in 2023, with $54 billion in GDP, almost 400,000 jobs supported across all sectors, and nearly $33 billion in household income.

Underpinning the industry's success in 2023 was a refreshing dose of stability. After suffering through the COVID pandemic and the devastating economic collapse of 2020; the bumpy and uneven recovery of 2021; and the global energy crisis, record pump prices, and surging inflation of 2022…2023 seemed like a relatively calm year, didn't it?

We saw more stability in the marketplace. Crude oil prices were less volatile, even with continuing geopolitical tension. Inflationary pressures significantly eased. Week-to-week volatility in retail gas prices was the lowest since 2013. And feedstock supplies for ethanol producers were ample, as farmers produced a record corn crop and achieved a record yield.

We also saw a more stable policy and regulatory environment. EPA finally brought some certainty to the Renewable Fuel Standard last June when it finalized three years of renewable volume obligations. And EPA's issuance of emergency waivers allowing year-round sales of E15 helped calm the waters last summer.

Overall, 2023 was a year that allowed us to catch our collective breath after the chaos and stress of the past several years.

But if you've spent much time at all around the ethanol industry, you know that things don't remain calm and tranquil for very long! It's a Long and Winding Road!

With 2024 now under way, it has become clear that this year will be one of the most pivotal and consequential years the ethanol industry has ever experienced. This is going to be a year where the rubber meets the road. Several policy decisions expected in next three to six months will shape the future course of the ethanol industry for years—and perhaps decades—to come.

Our industry faces a number of momentous questions about the future:

Will the Inflation Reduction Act's clean energy tax credits be implemented in a way that properly recognizes the climate benefits of renewable fuels? Will U.S. farmers and ethanol producers be allowed to fully participate in opportunities like sustainable aviation fuel?

Will more state and federal policymakers choose electric vehicle mandates and bans on internal combustion engines? Or will they instead embrace market-based, technology-neutral policies that focus on reducing carbon emissions without dictating technology winners and losers?

Will Congress finally take action to allow year-round E15 sales nationwide, or will states be left to fend for themselves?

What happens with the Renewable Fuel Standard after 2025? What impact could pending court cases have?

Will government officials and permitting authorities embrace the economic and environmental benefits of carbon capture, utilization and sequestration technologies? Or will they give in to

extreme environmental activists who oppose progress in agriculture and want to stymie growth in renewable fuels?

And, oh yeah, there's a presidential election too! How will all of these policy issues—and others that are important to us—be affected by the outcome of the election in November?

As the Fab Four might say, "Help!" Over the next day and half, we'll be looking at all of these questions—and trying to find some answers.

Let's start with the Inflation Reduction Act's clean energy tax credits, specifically the 40B Sustainable Aviation Fuel ("SAF") credit and the 45Z Clean Fuel Production Credit.

When President Biden signed the IRA into law in late 2022, I said the bill was potentially a game-changer that could revolutionize the future of agriculture and ethanol; and that it represented the most significant federal commitment to low-carbon biofuels since the RFS was expanded in 2007.

I still believe that *could* be the case.

But as we said at the time, the devil is in the details of implementation. Since eligibility for these tax credits—and the ultimate value of the credits--is based on the carbon footprint of the fuel, it is imperative that regulators rely on the best available science, modeling tools, and data to determine carbon intensity. It's also crucial that the models used for these tax credits include a broad array of carbon reduction strategies—from climate-smart agricultural practices to CCUS.

That's why RFA has been advocating for the use of the Argonne National Laboratory's GREET Model throughout this entire process. It's the gold standard. In fact, our work promoting the use of Argonne GREET for IRA tax credits goes back to when Congress was first drafting the provisions. We were successful in ensuring Argonne GREET was clearly specified as the model for determining carbon intensity and tax credit values for non-aviation fuels under the 45Z tax credit.

But what about aviation fuels and the SAF credit?

For determining SAF tax credit eligibility, the law requires the use of a model established by the International Civil Aviation Organization ***or*** a "similar methodology." The ICAO methodology, which was developed with substantial influence from European environmental groups, dubiously enlarges the carbon footprint of crop-based renewable fuels based on outdated information and discredited modeling.

Specifically, the ICAO model penalizes U.S. crop-based fuels for grossly exaggerated indirect land use change emissions. In fact, the ICAO methodology suggests SAF made from corn ethanol is no better than petroleum jet fuel, and therefore would come nowhere close to qualifying for the SAF tax credit. Meanwhile, under the ICAO model, SAF made from Brazilian sugarcane ethanol imports and "used cooking oil" imports from China would qualify for this U.S. taxpayer-funded credit.

How does that make any sense? Especially when U.S. cropland is not expanding, and in fact, continues to shrink?

RFA is pushing for revisions to the ICAO model that better reflect current practices, technologies, and actual land use responses. But more importantly, we have been working tirelessly with partners—like the airline industry—to ensure the Argonne GREET model qualifies as a "similar methodology" and is allowed as an option for determining carbon intensity values for the SAF tax credit.

In December, the Department of Treasury said the GREET model *will* be an allowable lifecycle methodology under the 40B tax credit program…but not until certain modifications are made to it. In our view, changes to the GREET model are completely unnecessary—Let it Be!

But, for the past several months, an inter-agency team has been hard at work modifying the GREET model. Nobody knows exactly what changes are being made or how those changes will affect the carbon intensity values of SAF made from corn ethanol.

But we should find out very soon. The administration has committed to releasing the revised version of the GREET model by March 1, just 10 days from now.

Here's what's at stake: The modified GREET model will either help open the door for U.S. agriculture and ethanol producers to participate in the SAF market, or it will lock out the highest-volume, lowest-cost feedstocks and assure the failure of the administration's ambitious SAF goals.

Now, the GREET model alone won't guarantee a bright future for corn ethanol in the SAF market. As you can see, ethanol producers will still need to shave off 25 to 30 CI points before corn ethanol-to-jet qualifies for 40B. But getting the model right would be a big first step toward providing some investment certainty and opening a potentially enormous opportunity for America's farmers and ethanol producers.

If the administration follows the science and lets data and evidence guide the decision-making process, we'll have nothing to worry about. But if they let ideology and the environmental lobby drive those decisions, widespread production of SAF from U.S. crops will never get off the ground.

The administration's final action on the modified GREET model isn't just important for getting SAF off the ground; it could also set the tone for implementation of the 45Z Clean Fuel Production credit, which is supposed to go live on January 1, 2025 – less than a year from now.

This is where another very important partnership comes into play. Agriculture Secretary Tom Vilsack and his entire team at USDA have been actively engaged in this process since the beginning, on our behalf. They have ensured that agriculture has a voice in these deliberations, and we know they have pushed for decisions based on sound science and real-world experience, not dogmatism.

Another big decision coming soon from the Biden administration is the final regulation for vehicle tailpipe emissions standards for 2027 and beyond. These regulations, which set increasingly stringent limits on tailpipe GHG emissions for new automobiles, will play a major role in determining what vehicles are offered for sale in the U.S. market in the years ahead.

Unfortunately, the standards proposed by EPA last April would force automakers to dramatically increase the production of battery electric vehicles and strongly discourage them from pursuing other technologies that could achieve the same—or even better—environmental performance at a lower cost to American consumers.

EPA's proposed approach fallaciously treats EVs as "zero emissions vehicles" and ignores the upstream emissions related to electricity generation, as well as the substantial emissions involved in battery mineral extraction and processing.

Now, I will say again for the record, we are not opposed to electric vehicles—heck, RFA owns one! And we certainly believe they have a role to play in the future transportation mix. But let's be fair and honest in how we account for the GHG impacts of EVs; and let's allow consumers and the marketplace to determine the best ways of meeting carbon reduction goals.

Alongside partners in agriculture and across the liquid fuel supply chain, RFA has been urging EPA to reconsider its shortsighted proposal. Instead, the Agency should adopt a technology-neutral approach that considers the full lifecycle carbon emissions of all fuel and vehicle options, rather than arbitrarily just looking at tailpipe emissions.

When compared to a typical battery electric vehicle, we have shown that a flex fuel vehicle running on E85 made from low-carbon ethanol can provide similar—or better—lifecycle GHG performance **at a lower cost**. And when flex fuel technology is combined with plug-in hybrid technology, as we've done with the Ford Escape sitting out front of the hotel, the results are even more impressive.

As EPA prepares to finalize its tailpipe regulations, we continue to call for a level playing field. If given the same opportunity and a fair regulatory framework, we are confident that higher ethanol blends—and the vehicles designed to use them—can play an instrumental role in affordable decarbonization of the nation's auto fleet.

Some states—starting right here in California—are also putting their finger on the scale in favor of EVs and being far more blatant about it.

Less than two years from now, California will mandate that EVs must account for one-third of new vehicles offered for sale in the state. Under California's "Advanced Clean Cars II" regulation, that share ramps up annually until it hits 100 percent by 2035.

Eleven other states have already taken action to adopt the California EV mandate, and three others are planning to follow suit.

Supporters of these heavy-handed mandates say they are necessary to decarbonize the transportation sector. Again, we strongly support the goal of reducing GHG emissions from our nation's cars and trucks. But there is a better way.

Rather than mandating electric vehicles, policymakers should be embracing performance-based approaches—such as a Clean Fuel Standard or the Next Generation Fuels Act—that offer a far more effective, flexible, and affordable path toward decarbonization.

We've seen evidence of how a carbon performance standard can drive creative solutions in the marketplace that reduce emissions more quickly and more affordably. Just look at the E85 experience here in California, where the LCFS has helped stimulate exponential growth in consumption of low-carbon, low-cost flex fuels.

Regardless of how EPA's final tailpipe standards turn out, and regardless of whether states recognize the folly of EV mandates, it is a safe bet that more EVs are coming. And while the pace of EV adoption remains the subject of heated debate, there is little disagreement that electrification will reduce liquid fuel consumption over the long run.

It won't happen overnight, and there will still be hundreds of millions of internal combustion engines on the road using hundreds of billions of gallons of liquid fuel for decades to come.

But like wind eating away at sandstone, electrification will begin to erode liquid fuel consumption over the long term.

Think about it this way: for every 1 million new battery EVs sold, E10 gasoline consumption drops by roughly 450 million gallons, taking 45 million gallons of ethanol demand with it.

That's why E15 is so important. Not only does E15 slash harmful tailpipe pollution, reduce carbon emissions, and lower pump prices, but it gives ethanol a chance for modest growth in an otherwise

declining gasoline market. It helps us hold the line on demand as other new markets—like aviation, maritime, and heavy-duty—are emerging.

But E15 will not be the stabilizing market force we need until the summertime RVP barrier is permanently removed and the fuel is available year-round. Securing RVP parity for E15 remains a top priority for RFA and we won't stop until we've accomplished that mission.

Nearly two years ago, eight Midwest Governors used their authority under the Clean Air Act to formally petition EPA for the removal of the 1-psi volatility waiver for E10. This action would reduce emissions and permanently level the playing field for E15 in their states.

By law, EPA had 90 days to approve the Governors' petition, which means this should have all been done by July of 2022.

But EPA didn't get around to even *proposing* approval of the petition until March of 2023. And nearly a year later, EPA still has not finalized approval of that petition—even after being sued by Iowa and Nebraska for missing a statutory deadline. EPA told the court it would complete this action by March 28, and we know the White House is conducting its final review. So maybe we're finally getting close. But the fact remains: we are just a few months away from summer, and no one in these Midwest states knows whether E15 sales will be allowed to continue or not.

So, today, RFA is again calling on the Biden administration to immediately follow through on its statutory obligation to approve the Governors petition so that consumers—at least in these eight states—can choose E15 this summer.

The more preferable alternative, of course, is for Congress to pass legislation that fixes this problem once and for all in every state. Last July, Senators Deb Fischer of Nebraska and Shelley Moore Capito of West Virginia introduced the Nationwide Consumer and Fuel Retailer Choice Act of 2023, which would do just that. Their bill would allow year-round E15 across the country and nullify the state petitions, because a state-by-state approach would no longer be necessary.

As a result of negotiations between RFA and the American Petroleum Institute, the bill has the support of major oil companies, along with fuel retailers and marketers, farm groups, and even some small merchant refineries.

However, a small group of East Coast refiners are more entrenched than ever before and continue to do everything they can to slow or stop growth in E15 sales. They oppose the Fischer-Capito legislation and have urged their supporters in the Senate to put up roadblocks to its passage.

But the coalition of supporters that has rallied behind this legislation remains resolute. And we continue to work closely together to advocate for getting it across the goal line as soon as possible. I remain confident that the power of our partnership will ultimately prevail! We Can Work it Out!

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Let's talk about the Renewable Fuel Standard. What comes next for the RFS? As previously mentioned, standards are already in place through 2025—and 2026 seems like a long way off, right? Well, according to the statute, EPA *should* finalize standards for 2026 by October of this year. Let me just say that's probably not going to happen. In fact, I'd be surprised if EPA spends much time at all on the next round of RFS volumes until after the election in November.

But that should not stop us from promoting the industry's priorities for the next set of RFS volumes. We know opponents of the RFS are already making their wishes known, and we must continue to stand up for what has been an extraordinarily successful clean energy program.

RFA will continue to push for growth in all categories of the RFS in 2026 and beyond, while also advocating for measures that better facilitate inclusion of new and emerging low-carbon renewable fuel technologies in the program.

We'll also continue to defend the RFS against frivolous legal challenges this year, including lawsuits over small refinery exemption denials and the 2023-2025 "set" rule.

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Securing favorable outcomes on all of these unresolved issues will again depend on the effectiveness of our partnerships.

But it will also depend on the industry's ability to continue reducing carbon intensity.

In fact, lowering the carbon intensity of ethanol is the single most important thing renewable fuel producers can do to secure an even brighter future for the industry.

Reducing CI ensures that corn ethanol can participate in the enormous SAF opportunity, and other new markets like marine fuel, trucking, construction equipment, and green chemicals;

Reducing CI opens the door to capturing the 45Z Clean Fuel Production Credit;

Reducing CI makes liquid fuels more competitive with EVs…which might cause policymakers to rethink irrational EV mandates, and automakers to reconsider their abandonment of higher blends and flex fuels;

It makes year-round E15 an even more attractive policy priority for Congress and the administration;

It improves the likelihood that future RFS volumes for all categories of biofuels will continue to grow; and

Reducing CI makes U.S. ethanol that much more appealing on the world market, as countries around the globe seek to decarbonize.

The only way ethanol will capture more value--and more market share--moving forward is by delivering even deeper carbon reductions at a low cost to the consumer.

And that's exactly why—nearly three years ago—the producer members of the RFA unanimously pledged to achieve net-zero carbon emissions for ethanol by 2050 or sooner. You are well on our way to achieving that goal; but the industry must remain ever-vigilant; open to new innovations and creative ideas; and laser-focused on securing the right policy and regulatory environment to facilitate our vision.

"Yesterday," it would have seemed unimaginable that the ethanol industry would be working closely with commercial airlines seeking sustainable aviation fuels, petrochemical manufacturers searching for low-carbon renewable feedstocks, professional fishing teams looking for a cleaner marine fuel, foreign governments pursuing low-cost clean energy for their citizens, or innovative companies seeking to sequester or utilize CO2 from ethanol fermentation. Today, we are working with all of these groups—and many others—to chart the future path for ethanol.

When seemingly unrelated industries and entities face common challenges—like the need to decarbonize, the need to clean up the air in urban areas, or the need to enhance energy security—working together helps us all accomplish more. As Paul and John might say, "with a little help from my friends" we can achieve great things!

I look forward to partnering with all of you in the year ahead as we "Come Together" to pursue an even brighter future for the ethanol industry. Thank you!