

**Renewable Fuels Association  
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Good morning and welcome to the 2021 National Ethanol Conference! Thank you for tuning in today and we are so glad you've joined us for this year's event. Although we miss not seeing everyone in person, I have no doubt that you will find this year's NEC to be informative and rewarding as always.

As I reflected on the ethanol industry's experience in 2020, the story of Frank Pettit came to mind. Frank Pettit is probably not a name you've ever heard before. But his story is one you need to know.

In the early 1940s, Frank was a salesman for Lionel Trains, which was one of the world's largest toy makers at the time. He was a good salesman and he loved the toy business.

But when the United States entered World War II, metal shortages forced Lionel to stop making toys and start making products to support the war effort. With no trains to sell, Frank Pettit was transferred into the Lionel factory in 1942, where he would oversee the production of parts for U.S. military equipment.

In his new role, Frank soon learned that the U.S. Navy desperately needed a new design for binnacles—which are the metal housings that protect a ship's compass and other navigation equipment from the elements. It had been discovered that defective binnacles were leading to the malfunction of compasses, resulting in ships being steered slightly off course.

So, Frank Pettit immediately went to work, building a prototype of a new binnacle by hand. It worked wonderfully, and Lionel was approved to go into full-scale production of the binnacle.

Thousands of these devices—designed by a salesman and made by a toy train company—were deployed on the U.S. Navy ships that helped the allies win the war.

Around the same time, in Newton, Iowa, 29-year-old Frederick Louis Maytag II – who had just taken over as president of the Maytag Company after his father died – was overseeing the conversion of a washing machine factory into a facility that would manufacture aluminum engine blocks for P-51 Mustang fighter planes. By 1942, 97 percent of Maytag's manufacturing operations were devoted to the war effort.

And the P-51, of course, helped U.S. forces win countless battles in the European theater and South Pacific.

While the brave men and women of our nation's armed forces are rightfully credited with winning the war, they didn't do it alone. The ingenuity, resourcefulness, and selfless service of Americans on the home front, like Frank Pettit and Fred Maytag, played an essential role in securing the victory.

In 2020, America fought a much different sort of war. This time the enemy was invisible. This time the attacks came not from tanks, planes, and destroyer ships—but from the microscopic coronavirus that invaded the human body, causing lung inflammation and sometimes, tragically, leading vital organs to shut down. In the past year, nearly 500,000 Americans have died from this unseeable adversary.

But just as Frank Pettit and Fred Maytag took action to support the war effort 80 years ago, the men and women of America's ethanol industry courageously stepped forward to join the fight against COVID. They rose to the occasion. And just as Lionel and Maytag factories altered their operations to serve the greater good, ethanol biorefineries across the nation quickly repurposed their facilities to make the products that would protect their fellow citizens.

As COVID cases began to surge across the country, ethanol facilities quickly ramped up production of the high-purity alcohol needed for virus-killing sanitizers and disinfectants.

Many producers took the extra step of bottling and packaging hand sanitizer onsite, and companies throughout the industry generously donated sanitizer and other cleansers to local health care workers and first responders.

According to a study conducted for RFA by Information Resources Incorporated, consumer demand for hand sanitizer sky-rocketed by 1,300 percent between January and May of 2020.

And the ethanol industry was there to meet that new demand. We may never know how many lives were protected or saved because of these actions, but we do know that, according to the Center for Disease Control, using hand sanitizer is "...one of the most important steps you can take to avoid getting sick and spreading germs to those around you."

Later in the year, we celebrated the good news that several COVID vaccines were proving to be highly effective in clinical trials. We were told the vaccines would soon be approved by the FDA and distributed to millions of Americans nationwide. But there was a catch – the most effective vaccines needed to be stored and shipped at a temperature of minus 94 degrees Fahrenheit – (I think it might have been that cold in Minnesota and Wisconsin yesterday!)

Once again, the ethanol industry stepped forward. As the largest provider of captured biogenic carbon dioxide and dry ice in the United States, ethanol producers supplied the millions of pounds of dry ice needed to keep tens of millions of doses of life-saving vaccine at the proper temperature.

It's no wonder, then, that the Department of Homeland Security moved immediately last March to identify the ethanol industry employees as "essential workers."

The Department said the ethanol industry's 204 biorefineries are part of an infrastructure that is "...so vital to the United States that the incapacity or destruction of such systems and assets would have a debilitating impact on security, national economic security, national public health or safety, or any combination of those matters."

So, when our nation is finally able to declare victory in the war against this invisible enemy, tens of thousands of workers in the ethanol industry will know that they played an essential role in snuffing out the virus. They answered the call to protect their fellow Americans, and that is something we all should be very proud of.

And while COVID-related lockdowns and travel restrictions caused 2020 gasoline consumption to drop 14% compared to 2019, the industry continued to supply billions of gallons of high-octane, low carbon fuel ethanol to domestic and global fuel markets.

Yes, more than half of the industry's capacity was idled at one point last year, and the 13.8 billion gallons of ethanol produced in 2020 represented the lowest annual output volume since 2013.

But ethanol still comprised nearly 10.2% of the U.S. gasoline pool, the number of retail outlets selling E15 and flex fuels like E85 continued to grow, and the ethanol export total of 1.33 billion gallons was the fourth-highest ever.

Meanwhile, the ethanol industry remained as one of the world's top manufacturers of high-protein animal feed, producing 33 million metric tons of distillers grains and other feed co-products. And even though distillers grains production was down 13% compared to 2019, our DDG exports actually increased slightly in 2020.

When two-thirds of U.S. ethanol plants were partially or fully idled last spring, there was a palpable sense of panic coming from the industry's customers around the world. After all, they count on our industry to deliver the essential building blocks and ingredients that become fuel, feed, food, beverages, and countless other bio-products.

So, while 2020 was an incredibly difficult year for the ethanol industry, it definitely taught us one thing: When America's ethanol industry stops running, so does America. Ethanol truly is Essential Energy!

But 2020 is history now. It's over. Thank goodness! Now it's time to look ahead. It's time for a new beginning.

And just as the U.S. ethanol industry has played a critical role in addressing the COVID crisis, American ethanol will serve as an essential solution to the emerging challenges facing our nation and world.

At the top of the list of those challenges is the urgent need to reduce greenhouse gas emissions from all sectors of the global economy. In recent years, momentum has been building—and outcry has been growing—for public policies that can aggressively shrink the carbon footprint of our nation and our world.

And following last November's elections, addressing climate change and reducing carbon emissions will most assuredly be an immediate priority for Washington.

Our new President, Joe Biden, has already issued executive orders focused on reducing U.S. carbon emissions; he's taken the first steps to re-enter the Paris climate agreement; and he has promised to put the U.S. on a path to achieve net-zero emissions economy-wide by 2050. President Biden's pledge comes after committees in both the U.S. House and Senate last year also called for taking action to reach carbon neutrality by 2050.

Of course, the U.S. economy cannot achieve net-zero emissions in the next three decades without addressing transportation fuels. The combustion of fossil fuels for transportation is the single largest source of GHG emissions in the U.S., contributing nearly 30 percent of the total.

So, how will we reduce transportation-related emissions from roughly 2 billion metric tons today to zero in just 30 years?

Some policymakers apparently believe that mandating the sale of electric vehicles—which they incorrectly refer to as Zero Emissions Vehicles, or ZEVs—is the one and only solution for decarbonizing our transportation system.

Bills recently introduced in both the House and Senate would require ZEVs to account for all new vehicle sales by 2035. These bills mirror a recent executive order by California Governor Gavin Newsom mandating that all new vehicles sold in the state must be ZEVs by 2035.

And automakers are already responding to these signals. Most notably, General Motors recently announced that it aspires to stop producing gasoline and diesel engines by 2035 in favor of electric vehicles. We'll have a chance to hear from GM's Policy Lead for Mobility and Climate Change a little later this morning.

But here's the truth regarding so-called ZEVs: they aren't really "zero emissions" at all. When you consider the upstream emissions associated with electricity generation, rare earth mineral extraction, battery manufacturing and other activities related to producing and operating electric vehicles, it becomes clear that their carbon footprint is definitely larger than a size 0.

According to the U.S. Department of Energy, when upstream emissions are properly considered, the average battery electric vehicle is responsible for more than 2 tons of GHG emissions per year and the average plug-in hybrid is closer to 3 tons per year. While that's less than the nearly 6 tons of emissions per year associated with a vehicle running on gasoline, it certainly isn't zero. In areas of the country that are heavily reliant on fossil fuels for electricity generation, like Kentucky, Missouri, West Virginia, and Utah, as a few examples, the carbon intensity of a battery electric or plug-in hybrid vehicle isn't much better than that of a car running on conventional gasoline.

Meanwhile, a Flex Fuel Vehicle running on E85 made from today's average corn ethanol offers similar carbon performance to a plug-in hybrid running on the average electricity mix; and an FFV using E85 made from corn kernel fiber ethanol is right on par with a battery electric vehicle.

It's also worth noting that the 1.6 million battery electric and plug-in hybrid electric vehicles on the road today account for just 0.6% of the 263 million cars, pickups, SUVs, minivans, and other light-duty vehicles registered in this country. Because the average vehicle is in use for 12 to 15 years in this country, you simply can't just flip the U.S. vehicle fleet overnight.

In fact, the Energy Information Administration recently projected that liquid-fueled vehicles with internal combustion engines will still account for 80 percent of new automobile sales in 2050 and liquid fuels will provide more than 90 percent of overall transportation energy.

But even using much more aggressive assumptions about electric vehicle adoption rates, leading analysts—like the Rhodium Group—have concluded that "...electric vehicles alone will not get the U.S. to net zero by 2050" and they argue that a broad portfolio of low carbon fuels will be needed.

Now, I don't want people to misunderstand what I'm saying. We absolutely believe electric vehicles will play an important role in reducing transportation-related GHG emissions in the decades ahead. And we expect there will be many more electric vehicles on American roadways as the technology continues to improve, as the costs come down, and as consumer acceptance grows.

In fact, we believe there are tremendous long-term synergies between ethanol and electric vehicles. The technology exists today to combine the best of both worlds. Hybrid flex fuel vehicles, for example, could provide substantial GHG reductions at a relatively low cost. And because ethanol is a hydrogen-rich molecule, it will undoubtedly play a role in the development of hydrogen fuel cell electric vehicles further down the road.

But we also believe that current discussions about decarbonizing the transportation sector should be grounded in reality and truth. And we believe any government policy intended to shrink the carbon footprint of our fuels and automobiles must be rooted in sound science, transparency, technology-neutrality, and fairness.

And, no matter how you slice it, we are going to be using hundreds of billions of gallons of liquid fuels worldwide for a very long time.

So, why wait until 2035 or 2050 to take meaningful action to lower the carbon impacts of those liquid fuels? We have an enormous opportunity to decarbonize those fuels NOW. Let's not waste it!

Mother Nature has already given us an extraordinary solar panel that covers several hundred million acres of cropland in America's breadbasket.

According to scientists from NASA, USDA, and nearly a dozen leading universities "the Midwest region of the United States boasts more photosynthetic activity than any other spot on Earth." The scientists noted that, in particular, that "Corn plants are very productive in terms of assimilating carbon dioxide from the atmosphere."

That energy absorbed from the sun is stored in nature's perfect battery, made up of about 800 tiny individual battery cells—each one chock full of renewable energy. America's corn farmers are the original solar energy producers!

At the ethanol plant, some of that solar energy is converted into renewable liquid fuel that powers our vehicles, some of it's turned into energy and protein that ultimately nourishes our bodies, and some of it is recaptured as biogenic carbon dioxide that is used in dozens of consumer and industrial applications.

And even after accounting for every bit of energy and all of the emissions associated with every step of the ethanol production process, today's corn starch ethanol is shown to reduce greenhouse gas emissions by nearly 50 percent compared to gasoline. You'll hear more about the latest science on corn ethanol's carbon footprint later this morning from the lead author of a recent study involving scientists affiliated with Harvard University and Tufts University—and again tomorrow from the creator of the GREET model, Michael Wang.

And while a 50 percent reduction is impressive enough, there are meaningful volumes of cellulosic ethanol from corn kernel fiber being used in the California market today, and the Air Resources Board says that fuel offers a 70-80 percent GHG reduction compared to gasoline.

When you put E85 made from that ethanol into a flex-fuel vehicle, you've got a low-carbon transportation alternative that is as clean—or cleaner—than most electric vehicles.

Clearly, we are already on our way to “net zero” with ethanol. Proper accounting of soil carbon accumulation in corn fields will shrink the carbon footprint of corn ethanol even further. And using biogas for thermal energy or adopting carbon capture and sequestration technologies could make corn ethanol carbon neutral—or even carbon negative, as you’ll hear from the carbon accounting experts on this year’s agenda.

Mark my words – zero-carbon corn ethanol is coming!

But it’s going to take smart policy and regulation to get us there. And it’s going to take creativity and determination to ensure ethanol is allowed to live up to its full potential.

The first step should be a simple one: bring integrity back to the Renewable Fuel Standard. As shown in a study released last week by Life Cycle Associates, renewable fuel use under the RFS has reduced GHG emissions by 980 MILLION metric tons – that’s almost a BILLION tons! But we can get even more carbon reduction out of the RFS if it is properly implemented.

After enduring four years of illegal small refinery waivers that eroded RFS blending requirements and destroyed ethanol demand under the Trump administration, we believe President Biden will finally restore integrity to the RFS and ensure the program provides the demand growth that Congress intended.

Biden has spoken out against the small refinery exemptions multiple times and has called the RFS “our bond with farmers.” And Biden’s nominee to serve as EPA Administration – Michael Regan – said the RFS will be a top priority and that he will follow the science and ensure transparency in implementing the program.

And we know the new administration is paying much closer attention than the last to the Tenth Circuit Court’s decision from a year ago. That ruling—which resulted from a challenge we brought against Trump’s EPA along with NCGA, NFU, and ACE—overturned certain small refinery exemptions and confirmed that EPA may only approve a waiver if the refiner had received continuous annual extensions of their original exemption.

Along with the new administration’s support of the RFS, the Tenth Circuit case, which is now before the Supreme Court, should finally put an end to illegitimate small refinery waivers once and for all.

The second step is clearing away the remaining barriers that are preventing E15 from spreading more rapidly. Replacing E10 with E15 nationwide would really jump start efforts to decarbonize our liquid transportation fuels. EPA has proposed to reform the current E15 pump label and make it easier for retailers to demonstrate the compatibility of their underground storage tanks. We are urging the Agency to expeditiously finalize that proposal.

But to get ethanol further down the road toward net zero, we’ll need to offer more than E15. Over the longer term, policies like a national Low Carbon Fuel Standard or a High Octane Low Carbon Fuel program will be needed in order for ethanol to capitalize on its decarbonization potential.

Two years ago at the NEC, I laid out RFA’s game plan for growing the ethanol market over the long term. The key element of that plan was the establishment of a 98 RON octane standard coupled with a low carbon fuel requirement. In addition, the game plan included measures to ensure that future vehicles and retail infrastructure would be fully compatible with fuel blends containing higher levels of low-carbon ethanol.

Two years later, I am thrilled to report to you all that almost every element of our game plan was included in the Next Generation Fuels Act, introduced last fall by Congresswoman Cheri Bustos of Illinois, who is our next speaker this morning. As the new Congress is now underway, Congresswoman Bustos' legislation provides an excellent starting point for us to establish ethanol's roadmap toward more efficient liquid fuels and net-zero emissions.

As we think about ethanol's long-term future in a net-zero economy, however, we must remember that policies requiring lower carbon intensity and higher octane may not be enough – on their own – to take ethanol to the next level. Only nine percent of the vehicles on the road today are approved by EPA and the automaker to use more than E15. That means we'll need a serious commitment from the auto manufactures – or, more likely, new policy measures – to ensure that production of flex fuel vehicles ramps up quickly to allow broader use of higher blends and flex fuels.

The good news here is that President Biden himself is a fan of optionality and flexibility when it comes to low-carbon vehicle technologies. It wasn't all that long ago that the Senator Biden, who was once the ranking member of the Foreign Relations Committee, suggested that "We need to make sure we're all driving good cars by...requiring every car sold in the United States is a flexible fuel vehicle." We agree!

Ethanol can't reach its full potential to provide essential energy and carbon reduction to American drivers unless the right vehicles are available. This will be a top policy priority for RFA in 2021 and beyond. As we pursue policies that drive the use of low carbon, high octane fuel, we'll also be doing everything we can to ensure those policies drive the production of the right vehicles.

In closing, no one could have possibly predicted the astonishing events of 2020. The COVID pandemic was a black swan event unlike any other in our industry's history.

And no one really knows what the future holds. But it's been said that "the best way to predict your future is to create it."

I look forward to working with all of you in 2021 to create our industry's future.

And I have no doubt that whatever twists and turns we may encounter as that future unfolds, ethanol will continue to be ESSENTIAL ENERGY for our nation and world!

Thank you!