

2016 State of the U.S. Ethanol Industry

I have been privileged to step to a podium now 15 times to discuss the State of the Ethanol Industry. I have done so in good times; and I have done so when times were not so great. I have spoken at times when we've been in the throes of a political fight, and other times when the focus has been all about the business of ethanol. I remember when the room was a lot smaller and we were barely producing a billion gallons a year, wondering if we would ever realize our aspirations as an industry. And I recall the booming years when we were expanding so fast I didn't recognize most of the faces in the room. I have borne witness to the arc of the U.S. ethanol industry – from a niche novelty fuel used by independent gasoline marketers to what it is today – a ubiquitous and valuable component of U.S. motor fuel that refiners depend upon to meet emissions in RFG markets and clean octane in conventional fuels.

Through it all there has been one constant – the unwavering faith of the people in this room that our mission is too important to fail. You have not just persevered; you have thrived in the face of adversity. You don't make widgets. You reinvigorate rural economies. You make energy security. You make clean air. You make a lower cost alternative fuel that helps consumers at the pump. You make protein that nourishes livestock and poultry around the world. You're making a new energy vision for the world.

There are people in this room that have been on this journey even longer than my 28 years – people like Ron Fagen, Dave VanderGriend, Randy Doyal, and Ron Alverson – each of whom has had a unique and important role in the irrepressible evolution of ethanol technology and marketing, and each of whom have overcome adversity, choosing to learn from it rather than be defeated by it. That is the hallmark of this industry and its people – perseverance.

Brian Jennings and the American Coalition for Ethanol have a phenomenal campaign – Power by People – that is telling some of those stories. It's spot on. Whether it's the story of Delayne Johnson and Quad County Corn Processors solving the riddle to become the first to produce cellulosic ethanol commercially, or Bruce Vollan, who owns a gas station in South Dakota and was one of the first to purchase a blender pump so that he could offer mid-level ethanol fuels and do his part to tear down the blend wall, the stories reflect a common theme – an intense interest in doing something for their communities, and an absolute refusal to quit.

Thus, as I take to the podium this year – a time when margins are slim, the din from our detractors deafening, and the policy framework for biofuels threatened again by an Environmental Protection Agency that ignores the law – I can say with confidence that the state of the ethanol industry remains strong, demonstrating a resiliency gleaned from years navigating the vagaries of commodity markets and the perils of policy uncertainty.

Indeed, the strength of the U.S. ethanol industry is seen in its record production – 14.7 billion gallons, its record blending demand – 13.75 billion gallons, record feed production – 40 MMT, and record GHG reductions – 41.2 million metric tons. Those aren't the stats of an industry in retreat, that's an industry confident, defiant, and prepared to weather any storm!

The strength of the ethanol industry is also seen in the inexorable march of technology, as during 2015 DuPont christened the world's largest cellulosic ethanol plant, Big River began construction of its zein protein extraction plant, Central Minnesota Renewables installed butanol and acetone production technology, Pacific Ethanol began cellulosic ethanol production from corn kernel fiber, and numerous plants, including Adkins Energy, CHS, and East Kansas Agri-energy, installed biodiesel or renewable diesel production technologies enabling them to add value to their corn oil streams. These plants and these technologies are transforming U.S. ethanol into a dynamic fuel and bio-products industry that is poised to withstand the unpredictable impulses of commodity markets.

The strength of the U.S. ethanol industry remains a cornerstone of the rural economy. The industry added \$44 billion to the nation's Gross Domestic Product and paid \$10 billion in taxes last year. The sector's economic activity and job creation helped raise household income by \$24 billion. Meanwhile, the U.S. ethanol industry spent \$25 billion on raw materials, other inputs, and other goods and services. Margins may be tight, but you remain committed to your communities and are making an immeasurable difference in the lives of your neighbors and the pocketbooks of all Americans. Your fuel is renewable, and so are the jobs you require, the investment you've made and the purchases you make every day, no matter the economic climate.

Contrast that with the boom and bust cycles of oil extraction that swing wildly, leaving communities withering on the abandoned hopes of a shuttered rig. The rig count for the last week of January was 498—the lowest since March 2010 and a 70% drop from the peak of 1,609 in October 2014. The oil and gas sector slashed employment by more than 18,000 jobs last year as the global oil glut ate away at profits. Faced with the same market pressures, the U.S. ethanol industry increased direct employment by some 2,000 jobs according to one economic analysis, invested in new technologies, and worked to expand distribution infrastructure.

Tell me again why we shouldn't be doing everything possible to maximize renewable energy resources like ethanol as opposed to imposing unnecessary and discriminatory regulatory barriers that prevent consumers from having access to higher ethanol blends!

In his state of American energy speech last month, API president Jack Gerard doubled down on the oil industry's attack on ethanol and the RFS, calling it a "relic of our nation's energy past." He's whistling past the graveyard, of course, ignoring the fact that an oil glut they helped create is wreaking as much havoc on the stock market and the economy today as the oil shortage that caused prices to skyrocket to \$140/bbl in 2008. He's ignoring the fact that 2015 was the hottest year on record, caused in large part by

GHG emissions from fossil fuels, which are exacerbated by fracking and tar sands. And he dismisses the fact we still import more than 45% of the oil processed by U.S. refineries, much of it from hostile nation states that pose an existential national security threat to our homeland.

No, it is not the RFS that is a “relic of our nation’s energy past.” It is the very notion that prosperity can only be driven by petroleum without regard for the environmental, economic or national security implications of that dependency that is the “relic” world leaders need to recognize and relegate to the trash heap of history.

Unfortunately, this past year we saw our own government adopt the narrative of the oil industry with regard to the Renewable Fuel Standard (RFS), choosing to limit the amount of corn ethanol used in the program under the misplaced premise that there is neither the consumer demand nor infrastructure to accommodate higher blends of renewable fuel. To implement their vision of the marketplace, EPA grossly misread the general waiver provisions of the law, conflating supply and demand, and deliberately ignoring 1.8 billion surplus RIN credits that represent an incredibly important component of “available supply.” The real tragedy of EPA’s action is that it castrates the market mechanism designed by Congress to motivate investments in both new advanced biofuel technology and the infrastructure needed to provide consumers with cost competitive choices at the pump.

EPA’s revisionist RFS policy would result in biofuels cannibalizing biofuels, fighting for a stagnant market without the tools Congress intended to eat away at oil’s monopoly. EPA turned the statute on its head because it was too timid to allow the RFS program to do its job – force the necessary change in our fuel production and distribution system that would empower consumers and protect Mother Earth.

This is my favorite line from EPA’s final rulemaking:

“We do not believe the statute should be interpreted to require that refiners and importers change the nature of their businesses so as to comply with RFS requirements, as this would be a far-reaching result that Congress can be expected to have clearly specified if it was intended.”

What?! Are you kidding me? The whole point of the RFS was to change the way refiners do business! Congress was directing refiners to change the nature of their business by requiring them to use steadily increasing volumes of renewable fuels – something they otherwise would not do because it is not in their business model. How could EPA not understand this?

We look forward to testing EPA’s vision of the statute and congressional intent in court. In the meanwhile, it is critical the industry look toward the future. Simply put, we need to grow demand. There is a healthy debate today about how best to do it. Is it through exports? How do we capitalize on ethanol’s octane benefits? Can we get EPA to more stringently enforce air quality standards that would open markets for our cleaner burning

fuel? Will low carbon programs ultimately recognize the benefits of biofuels in a way that allows growth? How will a future EPA implement the RFS after 2022, when the statute allows the Agency to establish volume requirements?

The short answer is there is no wrong answer. We must pursue all options, because they are not mutually exclusive, and they are all founded on a single principle – that ethanol, from *any* source, is a clean, low carbon, high octane alternative to oil that will lower costs for consumers while enhancing rural economies and addressing global climate change.

Clearly, we need to further develop the market for exports. In 2015, the U.S. ethanol industry exported 836 million gallons, with a value of \$1.78 billion and representing 5.7% of domestic production. Eight-hundred and thirty-six million gallons is identical to 2014's volume and tied for the second-highest total on record. We exported to more than 75 countries across the globe with Canada and Brazil leading the way. But China imported more than 70 million gallons last year, becoming our fourth largest export market and leading an Asian market that has surged more than 1,515% since 2012.

In contrast, ethanol imports were just 93 million gallons, the third lowest annual total in the past decade and representing less than 1% of U.S. ethanol consumption. Those stats reflect the reality that the U.S. remains the lowest cost producer in the world and its leading supplier.

The RFA will continue its focus on expanding export market opportunities. We are working with the U.S. Grains Council and Growth Energy in an Ethanol Export Partnership that has organized trade missions to Asia, South America, Africa and Mexico over the past year, and have several more planned for 2016. The RFA has also been awarded a grant through the Department of Commerce to promote business to business meetings at this National Ethanol Conference and I am very pleased to have representatives from China, India, Brazil, Mexico and Peru here today to learn of the advantages of increased ethanol use and make important and lasting commercial relationships. With our collective efforts to enhance export opportunities, we will grow demand while at the same time enabling our foreign partners to address pressing pollution and climate issues in their countries.

Speaking of exports – it is also important to note that U.S. exports of distillers grains set a new record last year at 12.56 million metric tons, up 11% from 2014 and more than double the amount exported in 2009. Importantly, 50% of those exports went to one country – China, which is now threatening that critical market with a trade dispute precipitated by China's own grain surplus. Consequently, building new foreign markets for distillers grains will also be an industry priority this year, and I encourage folks to join the RFA and the U.S. Grains Council at the Export Exchange in Detroit this fall.

The focus of this year's National Ethanol Conference is ethanol's octane benefits. When marketing ethanol here or overseas, you are trading octane. The world is octane short, and with a blending octane rating of 113, ethanol offers more engine knock resistance per dollar than any other gasoline additive on the planet. Not too long ago refiners produced

all the octane they needed at the refinery from petroleum. But refinery processes to increase octane are energy intensive and costly, and yield additives that are highly toxic. Ethanol is cleaner, cheaper and carbon neutral. Refiners can use it to meet minimum octane specifications while extending the barrel to maximize fuel production.

But minimum octane standards need to be raised. There is still 85 octane gasoline being sold in certain parts of the U.S. NO vehicle is warranted for 85 octane and ASTM specifications should be changed to eliminate low octane fuels from the marketplace. A higher octane fuel would enable the auto industry to increase engine compression to improve fuel economy and performance. Europe has a 95 RON minimum to accommodate their more stringent fuel economy standards. The U.S. should follow suit. If we are ever to meet the 54.5 mpg standard set in this country, higher octane fuels will be imperative. The Department of Energy has done a lot of work already, and DOE's Optima program is preparing an effective technical roadmap. EPA needs to take heed and work with industry to assure that future fuels match up with future vehicle technology.

While higher octane fuels may have significant market implications for ethanol, this isn't and shouldn't be about mandating E25 or E30 or E anything. It needs to be about vehicle technology and improved engine efficiency to address climate change. In a competitive octane environment, everybody wins.

Another compelling avenue for market growth is through cleaner fuels. But EPA must first correct its indefensible model used by the states to demonstrate compliance with air quality standards. Building upon work that Urban Air Initiative and others have been doing, a recent analysis conducted for the RFA concluded that EPA's existing MOVES model is an inadequate and unreliable tool for estimating the exhaust emissions of gasoline blends containing more than 10 percent ethanol. The model does not match real world emissions effects and often yields completely opposite results. EPA needs to address the anomalies in the model so that state implementation plans accurately reflect ethanol's true impacts on emissions of particulate matter (PM), nitrogen oxides (NOx), volatile organic compounds (VOC) and other pollutants.

This is not just an academic exercise. By failing to accurately reflect ethanol emissions, EPA is discouraging states that may be moving toward higher level blends, including E15. At the same time, until the model is corrected, EPA is complicit in allowing oil companies to poison unsuspecting consumers with unnecessary levels of toxic aromatics. Thus, this too, is not about ethanol market share, it is about public health!

Of course, future fuel policy is quite likely going to be tied directly to carbon. Whether through state low carbon fuel programs, the federal RFS carbon metric, or global efforts to address climate change, lower carbon transportation fuels are inevitable. Biofuels, including corn ethanol, provide an option that is here today. I remain frustrated that with the notable exception of Agriculture Secretary Tom Vilsack, the U.S. delegation to COP21 virtually ignored biofuels in last December's global meeting to discuss climate

change. More than 30 countries attending COP21 included biofuels policies and programs in their post-2020 climate action plans. The U.S. plan did not.

The U.S. has the most progressive low carbon fuels policy on the planet. The use of ethanol in 2015 reduced CO2 equivalent GHG emissions by 41.2 million metric tons, equivalent to removing 8.7 million cars from the roads for an entire year. A Life Cycle Associates report concluded the RFS2 has provided cumulative CO2 savings of 354 million metric tonnes over the course of the program. But this Administration ignored talking about ethanol or the RFS in Paris because they're afraid to acknowledge corn ethanol is providing significant carbon benefits – today – for fear the environmental community, that abhors production agriculture, will criticize them.

Well, I say “Don’t be afraid of the facts!” And the fact is ethanol produced in this country today DOES provide meaningful carbon reductions. Again, EPA’s outdated and flawed modeling is to blame. In 2008, the Agency rushed to adopt an untested and ultimately flawed theory on Indirect Land Use Change. It has since been thoroughly debunked. But the legacy of that regulatory decision remains. We have asked the Agency to update its analysis. They refuse, saying they just don’t have the time to do it. Well, EPA committed to regular updates when they finalized the rule in 2008 – do it! Interestingly, even as they refuse to update the model, through the Efficient Ethanol Producer Program, the Agency has been certifying corn ethanol from nearly 60 plants as meeting a 20-30% reduction in carbon when today’s lower energy inputs, higher corn yields and technology innovations are taken into account. Those results still include an indefensible ILUC penalty that accounts for more than one-third of the total assumed lifecycle emissions, and if EPA would recognize the reams of data now available demonstrating that cropland has NOT expanded as biofuel production has grown, the EPA’s carbon profile of corn ethanol would be even better – and more accurate.

But it is not just that EPA is overstating ethanol’s carbon footprint, the Agency is understating oil’s. A report issued last week by the Union of Concerned Scientists found that carbon emissions from oil extraction and refining have increased 30% over the past 10 years. If EPA considered those increased emissions, the carbon score for gasoline would be 8% higher. So, as ethanol is getting cleaner, gasoline is getting dirtier, and EPA’s modeling is missing both!

If sound science is the foundation upon which states and the federal government would implement low carbon fuels programs, I believe agriculture would embrace the effort and consumers would be provided low carbon fuels at a low cost and the world could finally take meaningful steps toward lowering global temperatures. If not, the efforts will be doomed to failure.

While we work on these future opportunities, however, the RFS will remain an absolutely critical means of assuring ethanol access to the market. While academics and certain politicians like to talk about free markets guiding fuel policy, there is still no free market in energy. The world oil market is controlled by a Cartel, trade barriers like Europe’s discriminatory RED program and illegal anti-dumping duty abound, and while oil

companies continue to receive billions annually in tax incentives and preferences, ethanol does not. Ethanol is still largely an additive. We rely upon our customer to provide access to the consumer. But refiners are in the business of through putting hydrocarbons, not carbohydrates, and they have turned their back on favorable economics in the past, they will do so again if it means more market share and higher profitability in the future.

That's the reality. That's why even though there may be an element of battle fatigue when faced with an onslaught of misleading advertising from the oil industry about ethanol, and the industry must rally to defend the RFS at committee hearings stacked with anti-ethanol miscreants paid by the oil industry to defame our fuel, and our champions on Capitol Hill must be ever-vigilant in the face of a seemingly inexhaustible number of floor amendment on any legislative vehicle providing a convenient opportunity, we must keep up the fight. Until there is a truly free market for energy, until there is unfettered access to the consumer for biofuels, until there is a scientifically sound carbon metric for motor fuels, until there is a model used by EPA that accurately reflects ethanol's emissions profile and an effort by the Agency to demand cleaner fuels, the RFS must remain in place, as is, without erosion or meddling.

Now, we have to continue to work to assure the RFS works. That means the industry's unprecedented effort to incentivize E15 infrastructure – the Prime the Pump Program – will continue to be necessary. As a result of that effort and the USDA's BIP program, there will likely be more than 5,000 new E15 and E85 pumps at ~ 2000 new stations across the country this year. And with Chrysler's decision to approve the use of E15 in their new vehicles, joining GM, Ford, Volkswagen, Honda, Audi, and most Toyota models, more than 70% of the new cars sold today are clearly approved by the manufacturer to use E15. So, this year I'll challenge Nissan, Hyundai, and Kia, and ask what's wrong with your vehicles that they cannot seem to use the fuel blend of the future? Why don't you want your customers to have access to a higher octane, lower priced fuel?

One of the remaining obstacles to widespread E15 use, of course, is the disparate fuel volatility regulations EPA imposes for E10 and E15. The RFA has been seeking RVP parity for years, and this past December we teamed with the auto industry to encourage EPA to take a different approach. If the Agency won't provide the volatility tolerance to E15 as emissions logic and marketplace reality would seem to dictate, then the Agency should initiate a new rulemaking to lower the volatility of conventional gasoline blendstock to accommodate mid-level ethanol blends. The autos support this approach because it would provide a tighter and more certain range of fuel volatilities within which to design emissions control. Environmentalists should like this approach because it will provide reductions in evaporative emissions. And consumers would benefit because it would most certainly provide lower cost alternatives at the pump. EPA just needs to act.

But whether through a regulatory approach as we have laid out, or legislation providing the volatility tolerance to E15 as several Members of Congress have introduced, or through litigation forcing the Agency to use its statutory authority to provide parity,

action on ethanol blend volatility must happen. We are agnostic as to how it happens. But it must happen.

A troubling threat to the full implementation of the RFS is the growing ambivalence of the auto companies toward Flex Fuel Vehicles. As the existing CAFÉ credit for FFVs winds down and EPA resists efforts to fairly recognize ethanol's carbon benefits in its CAFÉ calculations, the auto companies are starting to slow FFV production. They claim there has not been meaningful consumer demand for these vehicles and the incremental cost, albeit trivial, cannot be justified in the absence of a more balanced CAFÉ regime. The ethanol industry needs to demonstrate the continued enthusiasm for FFV's. They need to hear from us – loudly. The RFA has initiated a new Flex My Choice campaign. On your seats this morning is a package of postcards, one for each of the Detroit 3 auto manufacturers and one to drop off at your local auto dealership encouraging support for the continuation of FFV availability. They're postage paid and merely require you to fill them out and send them. We want to raise our voices so that E85 and other mid-level ethanol fuels remain viable options for consumers. Part of this effort is online as well. Follow the guidance at your seat, promote on social media, sign the online petition to EPA and visit FlexMyChoice.com.

I know these are challenging times. Margins are tight. The political discourse is frustratingly ill informed and negative. The relentless advertising by the API is more than annoying. The battles on Capitol Hill are tiring. EPA's hostility toward biofuels doesn't make sense. Having to battle for every new blender pump and FFV seems like a never-ending effort.

But take solace in the knowledge that Americans across all demographics continue to support ethanol and the RFS specifically. API's push polls are junk. Polling done for the RFA every month for the past year has demonstrated solid, consistent and unfailing public support for ethanol and the RFS despite the smear campaign being waged against us.

Find comfort in the fact that good science supports the carbon and emissions benefits of ethanol. Know that ethanol's octane blending value will ultimately be realized. Take a moment every day to cast your eye upon the communities that your plants have sustained and revitalized. And never ever forget that you are part of something far more important than a balance sheet. You are part of the U.S. ethanol industry. You have taken on the wealthiest and most entrenched industry in the world – and you have prevailed – because you are part of a just cause and you persevered.

I am proud to be counted among you. And I am proud to say again, the state of the ethanol industry is strong, Ethanol Strong.

Thank you.