

The Road to Higher Octane
Making the Case for a 95 RON Octane Standard Now
By David VanderGriend, President, Urban Air Initiative

Octane. Mercedes called it the single most important parameter in designing engines. And guess what? Ethanol has the highest octane blending value and the lowest cost of any gasoline additive commercially available. Today's vehicles adjust to take advantage of octane while improving mileage and reducing emissions. So why isn't ethanol leading the charge towards a high octane fuel standard?

In my opinion the RFS is strangling us. It was intended to drive domestic, conventional ethanol demand to 15 billion gallons. However, despite the ethanol industry's best efforts, EPA has successfully reduced RFS driven demand to not much more than the 12 billion gallons a year leaving our industry woefully oversupplied. Having allowed the RFS to define our value, not only does it limit our volumes, we are undeniably going backwards. Plants are closing, profitability has disappeared, and we are facing negative margins. And this is with the RFS in place.

With no growth driver, no end in sight to oversupply, and an industry accepted idea that ethanol demand must be underpinned by the RFS, it is increasingly hard, if not impossible, to see a path forward to increasing industry value. Ethanol's overreliance on the RFS creates a hostile transportation fuels market that works against improving gasoline by keeping us from capitalizing on ethanol's greatest strength. Ethanol is not just an octane source, but a source that lowers carbon and reduces gasoline's toxic aromatics.

So just how does our industry capitalize on ethanol's superior octane blending value? The United States is one of the few countries whose government has never established a standard regulating octane, but that doesn't mean it can't be done. I believe a scenario where all liquid transportation fuel stakeholders bring a reasonable octane standard to Congress is not only doable, but more importantly, it will provide much needed long term industry security. The ethanol industry has taken a position that it will accept nothing less than a 98 RON minimum octane standard. The petroleum industry has taken a position that, while they are willing to consider a higher octane standard, a 98 RON minimum octane standard is a nonstarter.

The reluctance of the ethanol industry to sit down and work with the petroleum industry to try and solve this dilemma is challenging. While ethanol industry stakeholders continue to rail against unfair regulations that essentially mandate 90% gasoline, we refuse to move from the position of a 98 RON octane standard, which we all know is essentially an E25 to E30 mandate. A 95 RON minimum octane standard raises the country's octane, sets a floor on which we can build, and is possible today without need for new infrastructure development or petroleum refiner investment. By some estimates a 95 RON standard creates a yearly 20 billion gallon or more market for ethanol. If we engage in the hard work of crafting a standard that removes barriers preventing ethanol from freely trading, I am convinced the cleanest, cheapest source of octane will prevail and ethanol will finally realize its true potential.

Autos have told us that without a higher octane fuel standard their industry will be forced to migrate vehicles to electric in order to comply with lower emissions requirements. And some refiners, including AFPM, have indicated they are on board with a 95 RON standard allowing them the flexibility to increase octane by simply adding more ethanol to their current blendstock resulting in a consumer *(over)*

gasoline with 15 to 18% ethanol content. While it's no secret that the refiners can make a 95 RON gasoline today by keeping the ethanol content at 10% and increasing the octane content of their blendstock with aromatics, a higher octane blendstock is more expensive to produce. Based on my understanding, I am confident the majority of refiners will not opt for higher production costs. Ethanol's economic and environmental advantages as a gasoline additive will always generate demand.

Furthermore, what has been one of our crusades for many years now, the Clean Air Act (existing law) mandates that EPA reduce toxic aromatics to the greatest degree achievable. As a source of clean octane, ethanol is an "available technology" (as specified in the Clean Air Act) which should provide more incentive for refiners to forego additional aromatics in favor of ethanol to meet a new octane standard. With a 95 RON octane standard EPA should be accountable to enforcing the law.

Autos and Refiners have said they can support a 95 RON standard, however, they insist that in exchange, modifications to the RFS are made. Up until now, this is where the ethanol industry walks away. With continued RFS destruction and EPA's total, unchecked control of the RFS on the horizon, I believe now is the time for our industry to come together and trade up for a 95 RON minimum octane standard that clears the path for higher ethanol inclusion in gasoline. Conservative estimates by refining analysts point to a 95 RON octane standard increasing demand over the current RFS and, refiners have offered, through legislation, *a 15 billion gallon per year guarantee* for a period of years as the RFS is modified.

The time has come to take the pen out of the EPA's hands. We must move beyond the RFS and capitalize on an octane strategy that is realistic and creates a long term growth opportunity for ethanol. In an ideal world a 98 to 100 RON octane standard could deliver the greatest benefit. Reality however assures us this is an untenable solution. But a stepping stone to higher octane levels is a 95 RON minimum standard that through legislation establishes ethanol as substantially similar to all other gasoline additives and opens the door to a potential 20 billion gallon a year ethanol market. Consumers will buy higher octane fuels as we are proving every day throughout the Midwest. Automakers want high octane, and to the extent ethanol provides it, simply adding ethanol to today's E10 is a painless pathway without dictating how refiners run their refineries.

It is my point of view that the ethanol industry must begin the hard work of taking over control of our industry from EPA and ending our reliance on government support. The basic pieces of a workable deal are on the table. All three main stakeholders (Ag/Ethanol, Autos, Refiners) must unite forces and together craft win-win legislation if we want to achieve success. I am asking the ethanol industry leadership to devote meaningful resources to thoroughly investigate what a 95 RON octane standard would mean for not only our industry, but also the petroleum refining industry and autos. While our team has dedicated many resources to studying and understanding 95 RON, there is much more work that is needed to fully understand the impact of a move to a 95 RON minimum octane standard. This work, and a serious 95 RON octane discussion, must begin now or we risk losing even more.

"In testimony before the House Energy and Commerce Committee's environment subcommittee, Dan Nicholson, General Motors' VP of global propulsion systems, said making 95 octane the new regular...is one of the most affordable ways to boost fuel economy and lower greenhouse gas emissions." –
Automotive News 04/17/2018

"The refining community is open to discussing a win-win compromise with their liquid transportation fuel partners in the ethanol and auto industry." – Flint Hills Resources *Transportation Energy Policy Reform Presentation Oct. 2018*