

## **Presentation to Bioenergy R&D TAC; November 15, 2018**

Biogas Researchers is an educational non-profit focused on the ways and means and benefits of using biogas as a transportation fuel. Today I'd like to give you my insights on a regulatory/administrative barrier at EPA impacting bioenergy growth: specifically I'm speaking of the inactive RFS "eRIN" or "electric pathway" that David Babson mentioned earlier this morning.

In July 2014, the EPA promulgated regulations creating a new biofuel pathway under its Renewable Fuel Standard (RFS) program. Under that now-existing pathway, electricity produced with biogas qualifies as a cellulosic and/or advanced biofuel if it is matched with electricity consumed by electric vehicles charging on the same connected grid system. We call it the RFS electric pathway.

At the time EPA created this pathway, about 235,000 EVs had been sold in the U.S., and data reported at that same time in the government's [Biogas Opportunities Roadmap](#) stated that over 2,000 MW of biogas-based electric power was being produced in the U.S. Based on data in a recent Argonne Laboratory report, that amount of electricity could power over 6 million EVs. Today, about 1 million EVs have been sold in the U.S., but the numbers and rate of growth are growing. So there's still plenty of biogas electricity available for the growing fleet of EVs.

The vast majority of biogas electricity is generated with landfill gas captured from organic waste that is decomposing in the large, regulated landfills where it was dumped. By law, those landfills must destroy that methane, either by flaring or beneficially using it, e.g., using it to generate electricity.

But a portion of biogas electricity being produced today -- roughly enough to power about one third of the existing EV fleet -- is being generated with biogas voluntarily collected with anaerobic digesters ("AD systems"), and in a way that (i) supports rural economies, (ii) helps farmers reduce nutrient pollution in surface waters (iii) diverts food waste from landfills, and (iv) results in significant reductions in methane emissions.

There are about 250 anaerobic digesters in the U.S. that export electricity to the grid, and therefore would qualify as fuel producers under the RFS electric pathway. Virtually all of them use manure and/or food waste to produce the biogas that is used to generate the electricity, and most of them are located on dairy and livestock farms that are in dire need of additional sources of revenue. And according the Biogas Roadmap, another 8,000 AD systems could be built at agricultural sites in the U.S. So clearly, there's lots of room for new bioenergy growth at thousands of farms across the country.

But many new farm-based digesters may never get built, and farmers are now struggling -- or have already lost the struggle -- to avoid shutting down their existing AD systems due in large part to diminishing electricity revenues. Many have seen their revenues from electricity plummet from 8 to 10 cents per kWh down to 3 cents or less per kWh. In the meantime, revenues from milk and other agricultural products have also decreased, adding to the uncertainty in rural economies.

That brings us back to the status of the RFS electric pathway that EPA promulgated over four years ago. Unfortunately, it has never been implemented because EPA - under both the Obama and Trump Administrations - has never decided exactly how it wants to implement the program. If implemented, we estimate farmers could earn an extra 4 to 7 cents in addition to what they receive from the utility, through the sale of RFS credits to RFS obligated parties. The credits are called RINs and, by law, the obligated parties who must purchase the RINs are gasoline and diesel refiners and importers. RIN revenues from the electric pathway could make a significant difference for many farmers who generate electricity with manure and food waste.

Sixty farmers and digester operators from 13 states wrote this in a recent letter to President Trump urging him to direct EPA to implement the RFS electric pathway:

*There is no other type of energy production - domestic or foreign, fossil or renewable - that produces as many economic and environmental benefits for farmers. One digester facility can provide a farm with heat and renewable base load electricity for its own needs, as well as additional revenue from the sale of electricity to the grid. A digester also helps a farm manage manure, protect water resources, reduce ammonia and hydrogen sulfide emissions associated with livestock production, minimize or eliminate harmful pathogens such as e.coli, divert organic waste streams from landfills, produce beneficial and valuable sources of nutrients and organic matter for crops, and create attainable STEM jobs and support rural development.*

In sum, my message to this TAC is that implementation of the RFS electric pathway is a low-hanging, and very ripe piece of fruit at EPA that can support many of this Administration's stated goals concerning domestic, baseload bioenergy production, surface water protection, food loss and food waste, and rural economic growth. I urge this TAC to strongly recommend that the electric pathway be implemented quickly in 2019, and in a way that facilitates maximum participation by AD electricity producers.

Please note that although I am speaking here today on behalf of Biogas Researchers, which is a non-profit, I am also associated with a for-profit company, BTR Energy, which

has applied to participate as a RIN generator when the electric pathway is activated. BTR's application is structured to ensure that farmers and other entities with anaerobic digesters are able to participate in and benefit from the pathway. BTR submitted its application to EPA over three years ago, and it and others are still pending at EPA.

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