

**United States House of Representatives  
Select Committee on the Climate Crisis**

**Hearing on October 30, 2019  
“Solving the Climate Crisis: Opportunities in Agriculture”**

**Questions for the Record**

**Viral Amin  
Vice President, Commercial Development & Strategy  
DTE Energy Resources**

**The Honorable Garret Graves**

**1. Can you elaborate on the environmental benefits that RNG can deliver today?**

First and foremost, renewable natural gas (RNG) projects capture methane that would otherwise be released into the atmosphere or flared. RNG can be used as a fuel replacement in trucks, buses and cars that are otherwise fueled by traditional fossil fuels. When compared to diesel fuel, these vehicles have substantially fewer emissions of other air pollutants like sulfur dioxide, nitrogen oxides and particulates. Moreover, the transportation sector is now the leading sector source of CO<sub>2</sub> emissions in the U.S., and the use of RNG in alternative fuel vehicles provides a proven, cost-effective option for lowering the carbon footprint of the heavy-duty transportation fleet. Finally, the process used to produce dairy RNG can significantly reduce odor and the number of pathogens within the manure.

**2. Can you describe why you believe RNG can be a long-term solution for reducing emissions from the transportation sector, even for those who are seeking deep decarbonization?**

RNG provides both an immediate-term and a long-term solution for reducing transportation emissions when it is used to power Natural gas vehicles. As electric vehicle battery technology continues to mature, heavy duty CNG/LNG trucks running on RNG are achieving cost-effective emission reductions today. RNG produced from DTE’s agricultural projects, when used as a vehicle fuel, results in *a lower carbon footprint than using electric vehicles*. This is due to the fact that these projects don’t just provide lower-carbon energy by displacing fossil fuels, they also prevent methane from entering our atmosphere.

**3. Is it possible for you to partner with small and medium farms?**

Although there is no precise formula for how big or small a farm must be to support an RNG project, DTE has developed projects in partnership with farms between 1,500 to 10,000 cows. Even smaller farms could be viable if they are located in close proximity to an existing RNG project, digester, or the necessary pipeline infrastructure.

Also, if several small farms were located adjacent to one another, a large digester might be constructed to serve them all.

**4. Can you think of ways USDA and EPA can assist dairy operators and swine producers to move toward RNG through the use of anaerobic digesters?**

Congress should work closely with the EPA and USDA to demonstrate continued support for the cellulosic biofuels category under the Renewable Fuels Standard (RFS). RNG production has grown at more than 30% per year since qualifying as cellulosic fuel under the RFS, and there remains considerable untapped potential to create RNG with the waste produced by dairy and swine farms. Creating RNG from waste materials is a real success story of the RFS. It helps farmers and results in substantial reductions in greenhouse gases.

Additional ways that the EPA and USDA could support dairy and swine RNG projects include:

- Providing additional incentives for the use of low-carbon fuels and the deployment of natural gas-powered vehicles
- Invest research funding to support the advancement of RNG technologies
- Promoting the installation and adoption of anaerobic digester and nutrient recovery technologies through new or existing grant programs.

**5. Infrastructure, specifically natural gas pipelines, are a necessary component for getting renewable natural gas into the gas stream.**

**a. Can you elaborate on the necessity of these pipelines in order for RNG?**

DTE transports RNG from farms in two ways: Directly, via a pipeline lateral connecting to the interstate pipeline system, and by trucking the RNG to an existing pipeline interconnect. There are limits to the distance RNG can be trucked before it becomes uneconomic. Therefore, proximity to pipeline infrastructure is often critical to the successful development of an RNG project.

**b. What are the biggest barriers you are experiencing in the context of infrastructure?**

DTE continues to see growth opportunities in the RNG market using the existing pipeline infrastructure. However, pipelines are a more efficient and a less carbon intensive means of moving the RNG to market.

The existence of a nearby pipeline is often necessary to make an RNG project economically viable. Therefore, additional pipeline infrastructure would likely increase the number of RNG projects and increase the volume of RNG brought to market.

**6. In your testimony you mentioned that using RNG as a fuel replacement in vehicles results in a lower carbon footprint than using electric vehicles. Will you elaborate on this?**

The use of RNG as a vehicle fuel, and especially RNG from agricultural waste, can result in a lower carbon footprint than using electric vehicles. This is due largely to the fact that agricultural waste-to-RNG projects can capture and destroy methane that would have otherwise been emitted to the atmosphere. According to the Intergovernmental Panel on Climate Change, methane has a global warming potential that is 25 times more potent than CO<sub>2</sub>.

An RNG project's Carbon Intensity (CI) score can provide a more specific comparison. CI is a metric used by the State of California's Air Resources Board (CARB) to measure the lifecycle greenhouse gas emissions for a fuel, per unit of transportation energy delivered. The lowest overall CI scores granted by CARB have been for dairy and hog waste-to-RNG projects, which have *negative carbon footprints* and substantially lower CI scores than electric vehicle pathways scored by CARB.