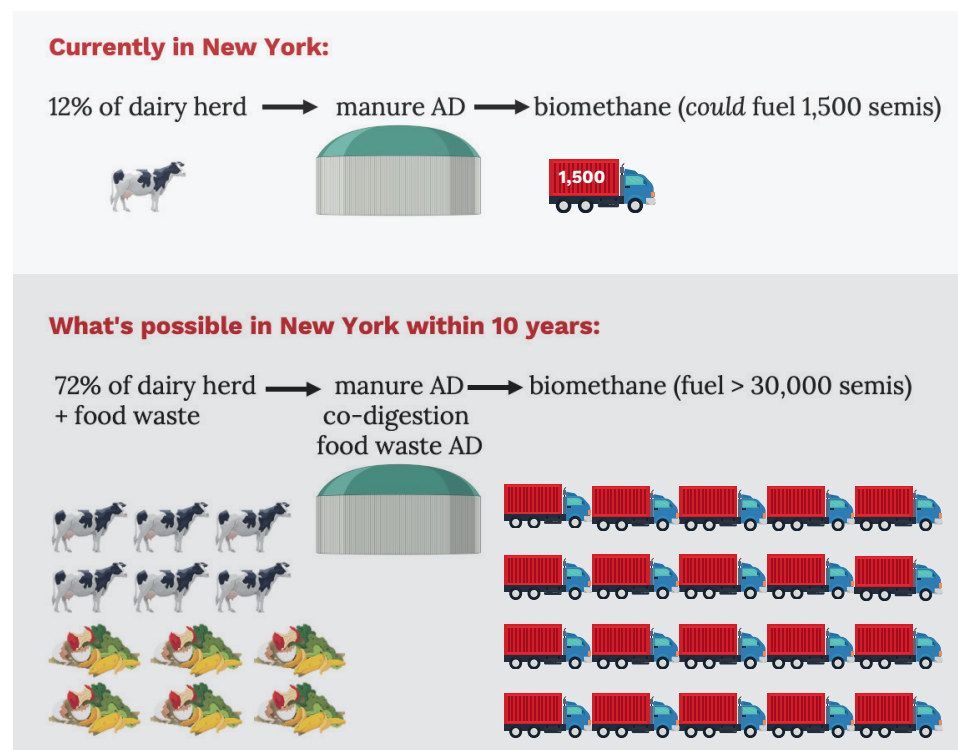


## Biomethane potential in New York

**Biomethane from New York's dairy manure and food waste could fuel over 30,000 tractor trailers annually\*, displacing at least 300 million gallons of diesel.**

- 12 percent of the NY dairy herd has implemented manure anaerobic digestion (AD) to biomethane.
- This energy (with its GHG reduction) has market value under California's Low Carbon Fuel Standard.
- *But it could be meeting NY's needs instead.*

\*Estimated using typical AD processing manure from 72 percent of the current statewide dairy herd and conservative food waste volumes. Assumes 10,000 gallons diesel used per tractor trailer per year. See references 1 and 2.



- **Bioenergy is necessary** to reach NY climate targets and is part of moving to a circular bioeconomy where organic resources are best utilized.
- Manure and food waste anaerobic digestion (AD) are complementary in that they produce energy and **recover valuable nutrients to enhance NY's soil health and fertility.**<sup>3</sup>
- **Current management practices** of livestock manure and landfilling organics **are responsible for over 25 percent of NY's anthropogenic methane emissions.**<sup>4</sup>
- Smartly designed and maintained **bioenergy systems capture this methane** and put it to productive use as a **flexible and non-fossil fuel energy resource.**
- This industry requires **distributed job creation in rural, populated, and disadvantaged communities**, including local construction trades, operation and maintenance personnel, and engineers.<sup>5</sup>
- Bioenergy technology is already **commercially available at many scales**, and enhanced energy recovery processes are being innovated. The potential value of our organic resources, a **necessary part of our food and agriculture system**, will only grow over time.

## How to encourage homegrown renewable energy in New York

**Develop mechanisms that establish a competitive market within New York by properly valuing the lifecycle GHG reduction and the energy output.**



On-farm anaerobic digester with containers of food waste awaiting digestion.

- Maximize methane capture (i.e., minimize methane loss) through high quality design, equipment, construction, and most importantly, ongoing operations and maintenance. This also harvests the most energy.
- Enable simple and science-based treatment of GHG accounting for food processing and consumption waste that is diverted from landfills to AD for energy. <sup>6</sup>
- Consider how NY can meet net zero targets by utilizing the steady and controllable sources of bioenergy that the electric demand system will require.
- Allow haulers to diversify their vehicles and fleets to include compressed natural gas (CNG) engines (that can utilize biomethane), biodiesel engines, electric motors, and additional innovative technologies.
- Create workforce training programs and recruit talented engineers. Enhance public education on bioenergy, anaerobic digestion, biogas, hydrogen, biomethane, biodiesel, combustion, vehicle types, etc.



Dairy manure anaerobic digester to biomethane system installed in 2023.

### References

1. Lerner, M.S. and Tomich, M.P. (2023) Putting New York's Organic Waste to Work. Energy Vision. <https://energy-vision.org/research-reports/>.  
*Independently verified by PRO-DAIRY energy engineer.*
2. US DOE. Average annual fuel use by vehicle type. <https://afdc.energy.gov/data/widgets/10308>.
3. Gooch, C.A. and Wright, P.E. (2018) Benefits of Anaerobic Digestion on Farms. <https://hdl.handle.net/1813/66954>.
4. NYS DEC, 2024 Statewide GHG Emissions Report. (Over 25% is used because solid waste and exported waste management combined account for 28% and livestock manure management accounts for 4.6% of all NYS anthropogenic methane emissions.)
5. Milbrandt, A. (2021) Comparison of Select Food Waste Utilization Options. Golden, CO: National Renewable Energy Laboratory. NREL/BR-6A20-81024. <https://www.nrel.gov/docs/fy22osti/81024.pdf>.
6. Generate Upcycle. (2003) Food Waste Infrastructure Recommendations from a leading investor/operator. <https://generateupcycle.com/white-paper/>.