

## ADVANCING PHARMACEUTICAL SUSTAINABILITY

### The Pharma Industry's Decarbonization Challenge

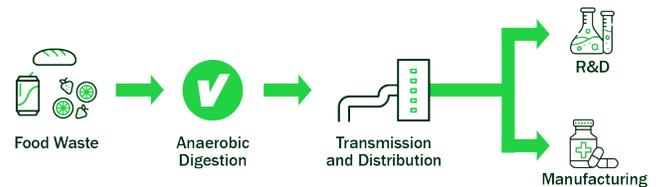
Pharmaceutical manufacturers face mounting pressure to decarbonize operations while maintaining the precision, reliability, and compliance their processes demand. Companies want to move away from fossil natural gas but must avoid expensive production disruptions and the need to replace or retrofit existing energy infrastructure. Renewable natural gas (RNG) is a cost-effective, drop-in solution that delivers immediate decarbonization impact without added overhead.

### About Vanguard Renewables' RNG

Vanguard Renewables' technology combines food and beverage waste with dairy manure in our anaerobic digesters to produce RNG. Major benefits include:

- Lowest-cost carbon abatement solution with superior environmental impact compared to alternative waste management approaches
- Consistent, secured national feedstock ensures uninterrupted production
- Environmental attributes minted and tracked directly from operational data on established registries (e.g. CleanCounts/M-RETS)
- Utilizes pre-existing infrastructure without the need for upgrades or changes to processes and equipment
- Replace fossil gas 1:1 or leverage carbon negativity (-125 g CO<sub>2</sub>e/MJ) to blend to achieve net zero
- Interconnect capability with major pipelines across the US

### RNG Production Process



### Decarbonizing in Practice: Proven RNG Innovation with AstraZeneca

AstraZeneca (AZ) and Vanguard Renewables formed a partnership in 2023 to decarbonize AstraZeneca's US manufacturing and R&D facilities with the bundled purchase of our RNG and RTCs. Benefits to AstraZeneca include:



AZ meets Scope 1 targets, supporting its goal to reduce global Scope 1 and 2 GHG emissions by 2026 in line with voluntary and validated SBTi targets



Additionality criteria met with new facility development within geographic proximity to AZ's facilities and traceability of environmental attributes



Long-term (15-20 year) contract structure similar to a PPA for renewable power ensures reliable, fixed price supply of carbon negative RNG

### READY TO MAKE THE SWITCH?

Plug into our national biomethane network and decarbonize your operations with no infrastructure upgrades or added overhead.

[rng@vanguardrenewables.com](mailto:rng@vanguardrenewables.com)  
[vanguardrenewables.com](http://vanguardrenewables.com)

Scan to Learn More

