

# Status of California's Efforts to Convert Organics in Municipal Waste into Renewable Natural Gas

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Renewable Gas 360 Webinar

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## About the RNG Coalition

- The leading advocacy and education voice for RNG in North America
- We advocate for the sustainable development, deployment and utilization of renewable natural gas so that present and future generations will have access to domestic, renewable, clean fuel and energy
- RNG developers, marketers, financiers, technology providers, consultants, utilities and labor coming together
- 98%+ of the RNG supply in North America

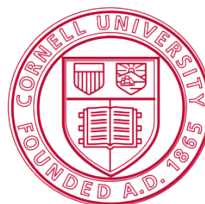
# RNG Coalition LEADERSHIP Members



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## SB 1383 Goals and Progress

- Senate Bill 1383 (Lara, 2016):
  - By Jan 1, 2025, CA must achieve a 75% reduction in the level of statewide disposal of organic wastes (from 2014 levels)
  - 40% methane reduction overall by 2030
  - CalRecycle rules finalized in November of 2020, go into effect January 1, 2022
- CalRecycle assessment of progress, as of August 2020:

*Organics recycling and recovery infrastructure is growing, but still needs significant expansion to provide the recycling capacity necessary to meet the SB1383 disposal and methane reduction goals.*

*Due to high capital expenses, AD facilities often rely on revenue from renewable energy incentives to make projects economically feasible.*

- RNG industry stands ready to help achieve the goals, agrees that economics of RNG production (and use) by jurisdictions will be a key driver

### Analysis of the Progress Toward the SB 1383 Organic Waste Reduction Goals

August 18, 2020



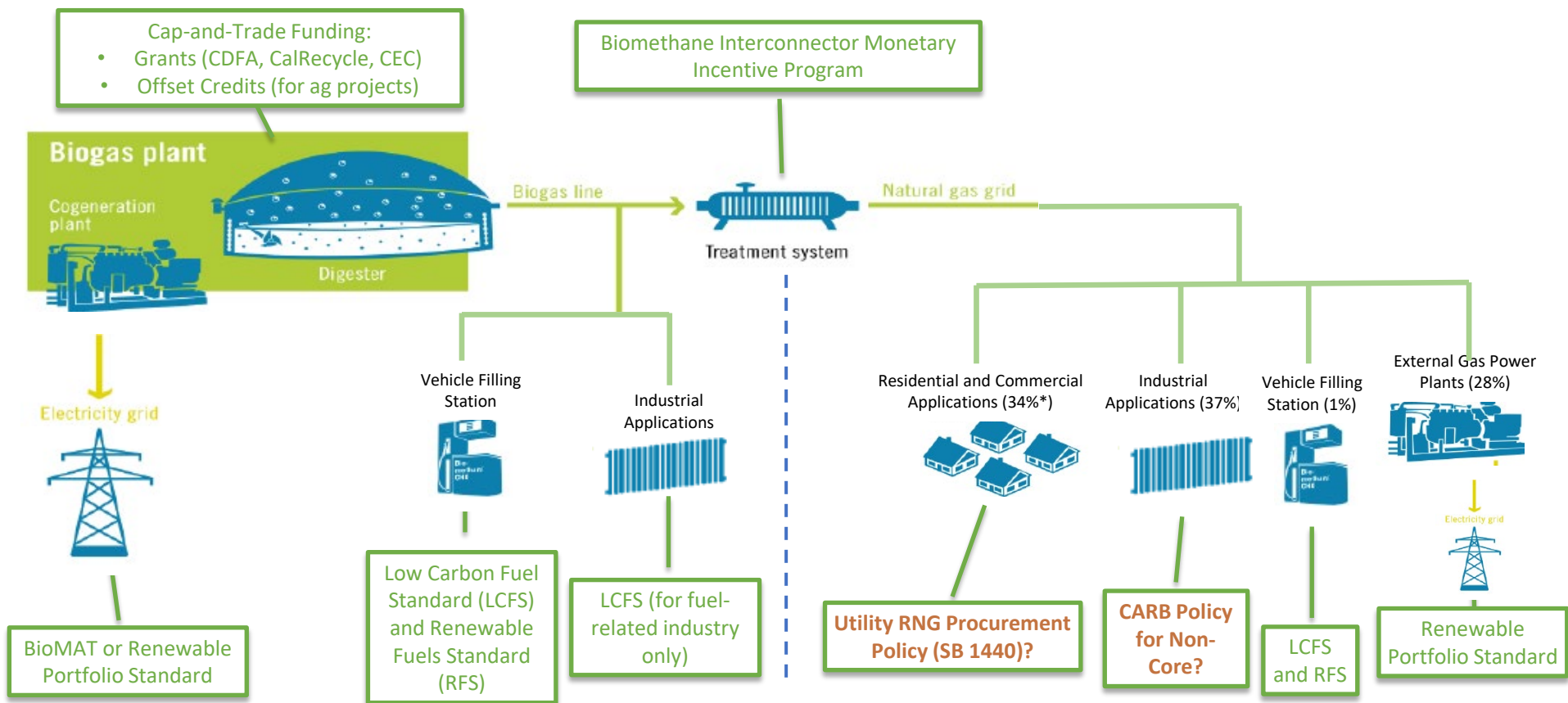
**CalRecycle** 

California Department of Resources Recycling and Recovery

## **RNG Coalition Supports all End Uses of RNG/Biogas in the SB 1383 Rules**

- Per §18993.1 of the California Code of Regulations, recovered organic waste products related to RNG/biogas that a jurisdiction may procure to comply with the SB 1383 rules are:
  - Renewable gas used for fuel for transportation, electricity, or heating applications
  - Electricity from biomass conversion
- However, public policy support for each of these end use activities in CA (and thus end cost of RNG to jurisdictions) varies significantly

## Current CA Policy Promotes RNG Creation, Use in Transportation and Power. But not Use in the Largest Gas Demand Sectors (Residential, Commercial, Industrial).

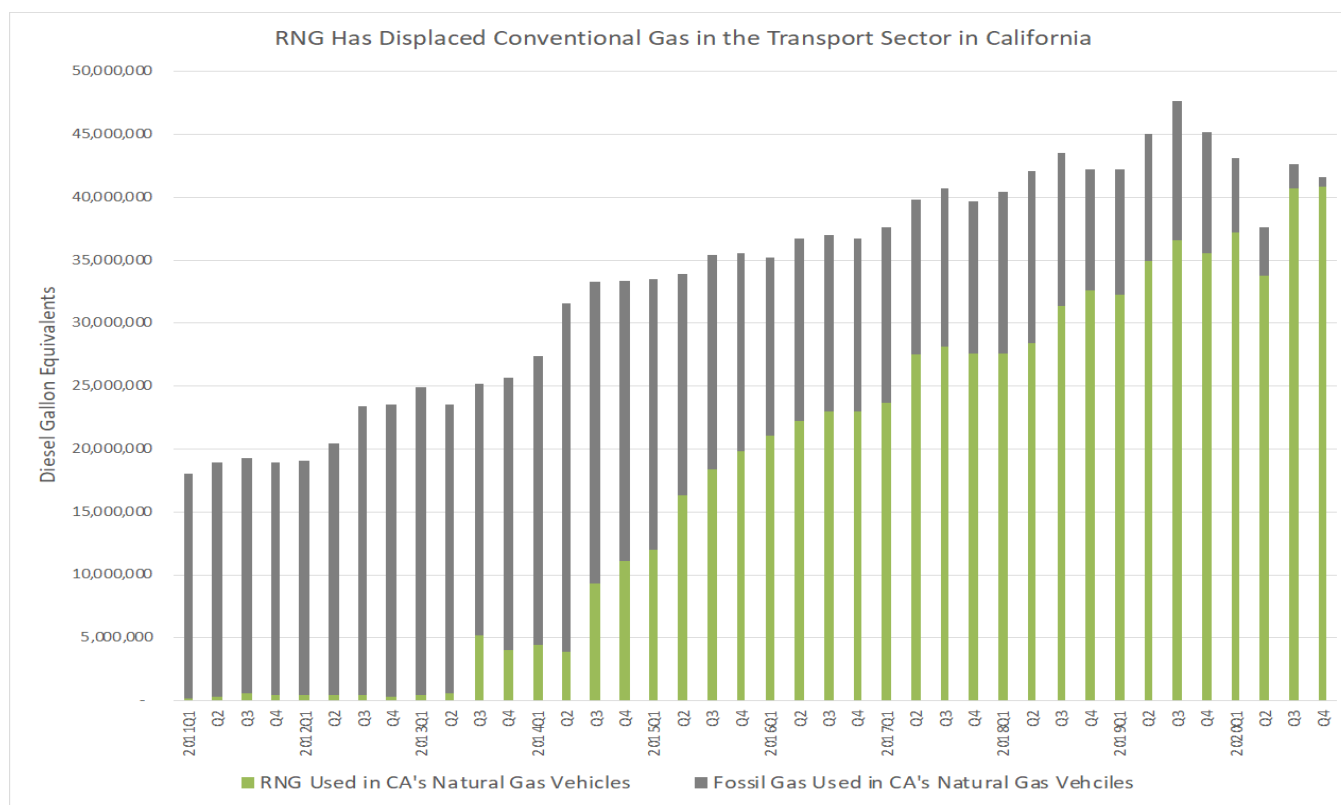


\* Percentages of 2019 total natural gas volume delivered to customers in California, US EIA

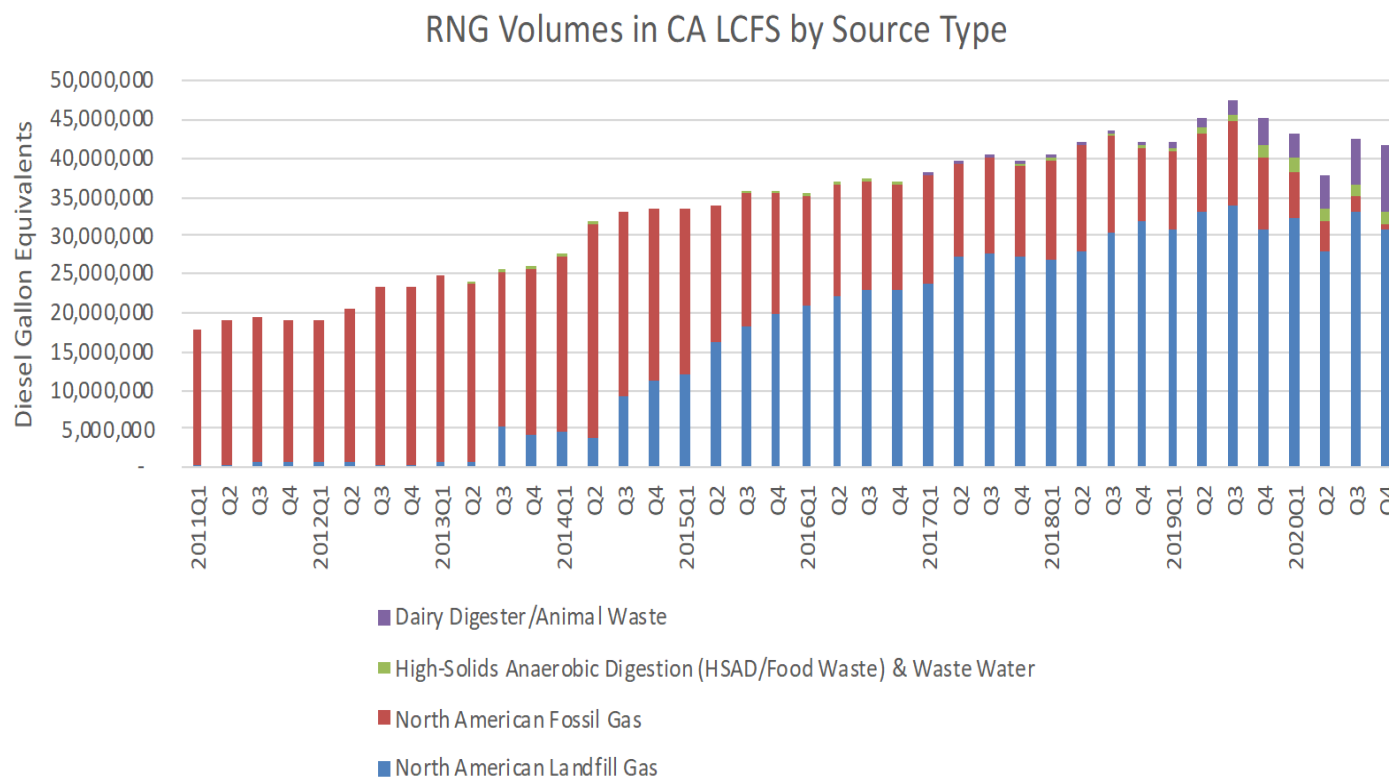
Graphic Source: Modified from Biowaste to Bioenergy, FvB, 2016



# CA LCFS is Working, Achieved 98% RNG Blend Rate in Transportation NGVs in Q42020



# Animal Waste and Landfills are Primary Feedstocks Receiving Credits in CA LCFS, RNG-on-RNG Competition is Real

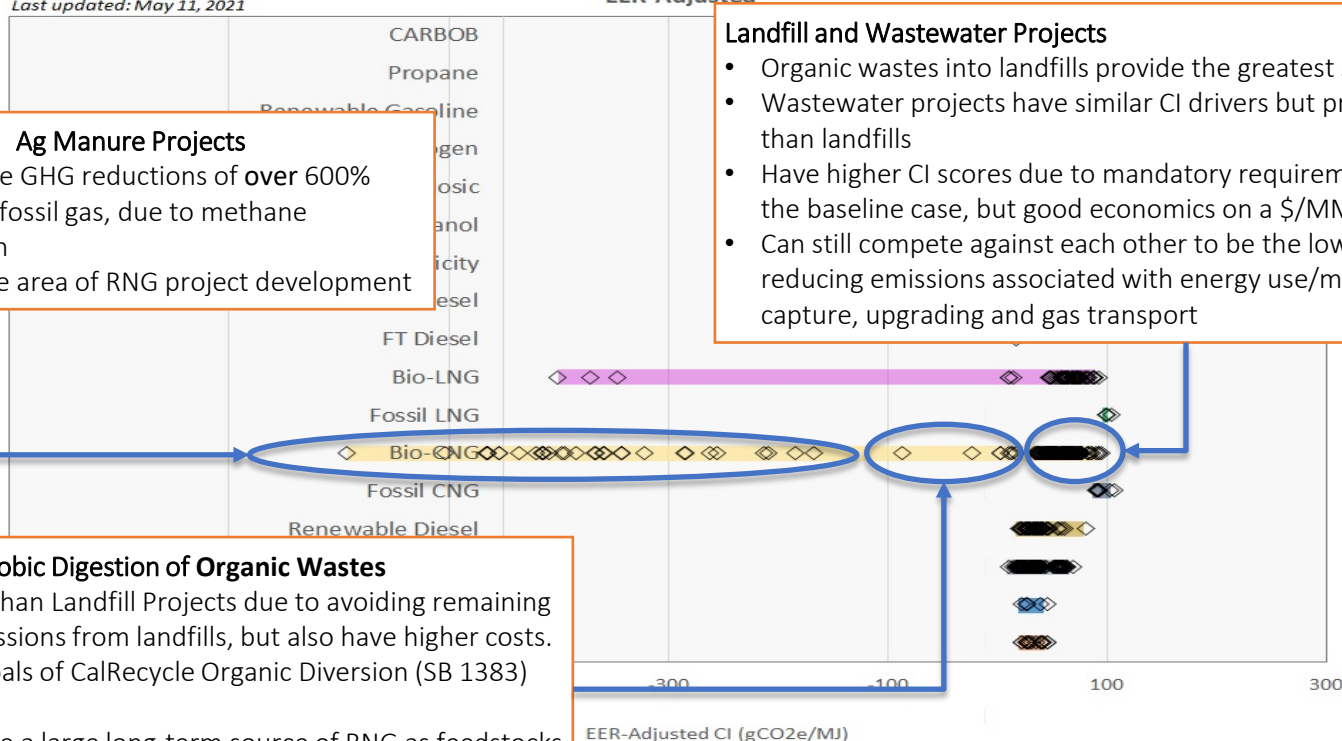


# Why Hasn't MSW Organics AD to RNG Been a Bigger Player in the LCFS?

## Carbon Intensity Values of Certified Pathways

Last updated: May 11, 2021

EER-Adjusted



### Ag Manure Projects

- Can achieve GHG reductions of **over 600%** relative to fossil gas, due to methane destruction
- Most active area of RNG project development

### Landfill and Wastewater Projects

- Organic wastes into landfills provide the greatest supply of RNG currently
- Wastewater projects have similar CI drivers but provide less RNG volume than landfills
- Have higher CI scores due to mandatory requirements to flare methane in the baseline case, but good economics on a \$/MMBtu basis.
- Can still compete against each other to be the lowest CI supplier by reducing emissions associated with energy use/methane leakage during capture, upgrading and gas transport

### Dedicated Anaerobic Digestion of Organic Wastes

- Score Better than Landfill Projects due to avoiding remaining methane emissions from landfills, but also have higher costs.
- Aligns with goals of CalRecycle Organic Diversion (SB 1383) rules
- Expected to be a large long-term source of RNG as feedstocks transition out of landfills
- Not much activity in CA yet (needs additional policy support)

# With a Few Simple Changes, CA Can Both Keep Using The RNG Supply it Has Helped Build and Also Accelerate Organics AD Growth to Meet SB 1383 Goals

## Dedicated Municipal Organic Waste AD and Wastewater

- Better recognition of the methane benefits of AD projects for organic wastes diverted from landfills
- Better assess methane reductions from industrial wastewater RNG projects (including industrial agriculture projects)

## Ag Wastes

- Directly measure project-specific Maximum Methane Potential values for livestock waste

## Landfills

- Determine which CA landfills are likely to remain in operation longest and support strong RNG projects at such facilities
- Maximize gas collection efficiency by rewarding projects that improve methane capture efficiency at landfills beyond regulatory requirements

## All RNG

- Build end markets with harmonized LCA tools for RNG's GHG benefits across all applications (power, transportation fuel, replacement for pipeline gas)
- Enable gas utilities to procure and move RNG to customers that want it (including jurisdictions procuring under 1383)
- Development of a national registry for tracking RNG production and end use
- Recognition of the GHG benefits associated with controlled-release organic fertilizer derived from digestate

## Conclusions

- Many more opportunities exist to leverage RNG to drive further GHG reductions for California
- California's LCFS is a proven model to support renewable natural gas project development
  - RNG is delivering the promised GHG benefits and remains the lowest carbon fuel in the LCFS program
  - Similar support needed for all other end uses of RNG
- RNG production capacity expansion needed to allow cities and counties to comply with SB 1383 rules

## Speaker Info

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