

DOCKETED

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***CEC IEPR Workshop on Renewable
Natural Gas (RNG)***

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SoCalGas - Stepping up our commitment to reduce emissions

Our **Mission**

To build the cleanest, safest, most innovative energy company in America

Our **Commitments**

2022

Replace 5% of SoCalGas natural gas core supply with RNG

2030

Replace 20% of SoCalGas natural gas core supply with RNG

The benefits of RNG are multitude

California can meet decarbonization goals by leveraging existing pipeline investments

- Drop-in fuel, no need for equipment and infrastructure changes
- Supports State's SLCP and GHG Goals
- Certain chemical/industrial processes (i.e. cement) require natural gas
- Many existing buildings cannot be economically retrofitted to electric
- Fosters grid resilience, the gas distribution network has a significant amount of receipt and storage capacity
- RNG is a low- and sometimes –negative carbon intensive resource that has greater emission reduction potential than other sources, like electricity



RNG - Challenges

1) Market price certainty

- Primary barrier for RNG over the last decade is the unavailability of long-term contracts
 - LCFS/RINs provide some certainty for today's RNG projects (2018 amendment extended the LCFS by ten years to 2030 and doubled the program's carbon intensity reductions target from 10 to 20%)

2) Limited policy has been implemented to date to generate demand for RNG

- High value LCFS/RIN credits have significantly supported the development of RNG projects for use in the transportation sector
 - Commercially available near zero emission HD trucks can increase the demand for RNG and provide significant emission reductions when replacing diesel (strongly supports air districts need to address non-attainment areas)

3) Project Scale

- Small to medium scale biogas production facilities have historically not been economical because high cost to produce RNG (due to economies of scale)
 - Availability of the Biomethane Interconnection Incentive is critical for these projects

RNG - Opportunities

1) Successfully implement upcoming policies/programs to advance RNG and other clean fuels

- SB 1440 – current CPUC rulemaking for biomethane procurement targets/goals for each California gas corporation
- SB 1383 – 40% reduction in methane emissions by 2030 supports dairy and organic waste diversion projects
- Proposed SoCalGas/SDG&E RNG Tariff - voluntary RNG tariff for “core” residential and nonresidential customers
- Potential future areas - utilization of RNG to produce renewable hydrogen; power to gas with biomethanation

2) Incentives/grants to encourage the development of RNG infrastructure

- Increase funding for biomethane interconnection incentive (total program funding of \$80M is fully allocated)
- Continue state grant programs for RNG projects:
 - CEC for biofuel production facilities (funding has decreased over the past several years)
 - CalRecycle Organics Grant Program
 - CDFA Dairy Digester Research and Development Program

SB 1440 – Implementation of a biomethane procurement program

SoCalGas supports the CPUC SB 1440 staff proposal

SLCP Reductions

Increased use of biomethane to replace fossil natural gas has environmental benefits as biomethane production pathways reduce SLCP emissions and combustion of biogenic energy sources

State Policy

The staff proposal sets biomethane procurement targets to help meet state SLCP and GHG reduction goals

- 2025 target is set to meet SB 1383 obligation to divert 75% of organic waste from landfills
 - 2030 target is set to meet CARB's landfill methane reduction levels as per 2017 Scoping Plan
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Environmental Justice

Biomethane production and injection reduces methane emissions and can decrease localized criteria air pollutants by reducing methane flares. Dairy biomethane is excluded

Market Price Certainty

Provides long term contracts for developers to sell RNG to the utility



SB 1383 – RNG Projects can significantly reduce SLCs to meet state goals

SB 1383 (Lara)

Directs CARB to implement regulations to reduce emissions of Short Lived Climate Pollutants (SLCPs). By 2030, requires a reduction of the following compared to 2013 levels:

- 40% reduction in methane, 40% reduction hydrofluorocarbon (f-gases), 50% reduction in black carbon (such as diesel)

Some RNG related sub-parts of SB 1383

1) Directs CARB to adopt regulations to reduce methane emissions from livestock manure management operations and dairy manure management operations by up to 40% below 2013 levels by 2030

- *No later than January 1, 2018, CPUC to direct gas corporations to implement not less than 5 dairy RNG injection pilot projects. Reasonable pipeline infrastructure costs are recoverable in rates*

2) Methane emissions reduction goals shall include the following targets to reduce the landfill disposal of organics:

- A 75-percent reduction in the level of the statewide disposal of organic waste from the 2014 level by 2025 (~20 to 25 million tons/year of organic waste*)
- CalRecycle estimates ~50 to 100 new anaerobic digestion and/or compost facilities are needed to meet the 75 percent diversion goal*

2017 Total CH4 Emissions: 39.9 MMTCO₂e

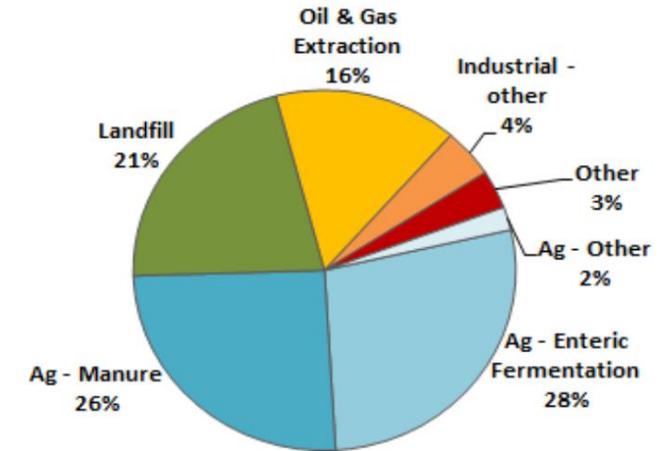


Chart Source: <https://www.arb.ca.gov/cc/inventory/background/ch4.htm>

Common Locations for Organic Waste Diversion Projects

Wastewater Treatment Plant (WWTP)

- Many existing WWTPs have additional anaerobic digester capacity and can make some modifications to accept food waste
- **Example: LA County Sanitation Districts** is utilizing excess digester capacity at their WWTP in Carson to accept food waste
- Biogas generated is used onsite at a public CNG station and for onsite power generation
- <https://www.waste360.com/waste-energy/la-county-sanitation-districts-expand-food-waste-recycling-system>

Landfill

- Landfills are a natural fit to build a bioenergy facility since curbside waste is going there already
- **Example: Mustang Renewable Power Ventures** is building a bioenergy and resource recovery facility at the Tajiguas Landfill in Santa Barbara that will separate organics from other waste materials
- Biogas generated from the organic waste anaerobic digesters and landfill to be put into the: 1) SoCalGas pipeline system, and 2) used for onsite power generation
- <http://www.resourcerecoveryproject.com/>

Waste Hauler Facility

- Waste hauler locations are also a natural fit to build a bioenergy facility since they are already picking up curbside waste
- **Example: In 2018, CR&R Environmental Services** commissioned a bioenergy facility at their Perris location that will be capable of processing up to ~320,000 tons of organic waste per year (at full build out)
- Biogas is cleaned to pipeline quality, injected into the SoCalGas pipeline system, and used to fuel CR&R waste hauling trucks
- <https://crrwasteservices.com/sustainability/anaerobic-digestion/>

Greenfield Sites

- Greenfield sites are strategically selected locations to build a bioenergy facility
- **Example: In 2021, Anaergia** commissioned a bioenergy facility in Rialto that will be capable of processing up to 300,000 tons/year of waste diverted from local landfills
- Facility will produce renewable natural gas, renewable electricity, and Class A organic fertilizer
- <http://biomassmagazine.com/articles/17818/rng-produced-by-anaergia-now-flowing-through-socalgas-system>



SoCalGas RNG Interconnection Projects



Examples of Projects Currently Injecting RNG into a CA Utility Pipeline

1. Biofuels Energy LLC (Point Loma)

- Point Loma Wastewater Treatment plant - more than 1.1 MMcfd of digester gas is captured that was previously flared
- Injecting RNG since 2012 into the SDG&E utility pipeline
 - A 2.8 MW fuel cell installed at UC San Diego and 1.4 MW fuel cell installed at South Bay Water Reclamation Plant to use the RNG
- Total project cost of \$45 million, **75% was subsidized** through incentives and tax credit



2. CR&R Waste and Recycling Services (Perris CA)

- Two of the four phases are complete with each phase capable of handling ~83K tons/year of organic waste (~1M DGE/yr of vehicle fuel)
- Organic waste (previously sent to a landfill) is converted to produce fertilizer, soil amendment and RNG
 - 100% of the RNG produced is used to fuel CR&R trucks
- Injecting since mid-2018, into SoCalGas pipeline
- Cost: Over \$100 million at full buildout
- First RNG-to-pipeline project in SoCalGas' service territory



Examples of Projects Currently Injecting RNG into a CA Utility Pipeline

3. Calgren Dairy Fuels (Pixley CA)

- First dairy digester pipeline cluster project in California and started injecting RNG into SoCalGas' pipeline in February of 2019
- Plan to collect biogas from anaerobic digesters at 12 Tulare County dairies by the end of 2019
- The facility will capture the methane produced from more than 75,000 cows
- SoCalGas will be capable of adding up to 2.26 billion cubic feet of RNG each year to its pipeline system
 - Enough to fuel more than 1,200 Class 8 heavy duty trucks



4. Anaergia's Rialto Bioenergy Facility

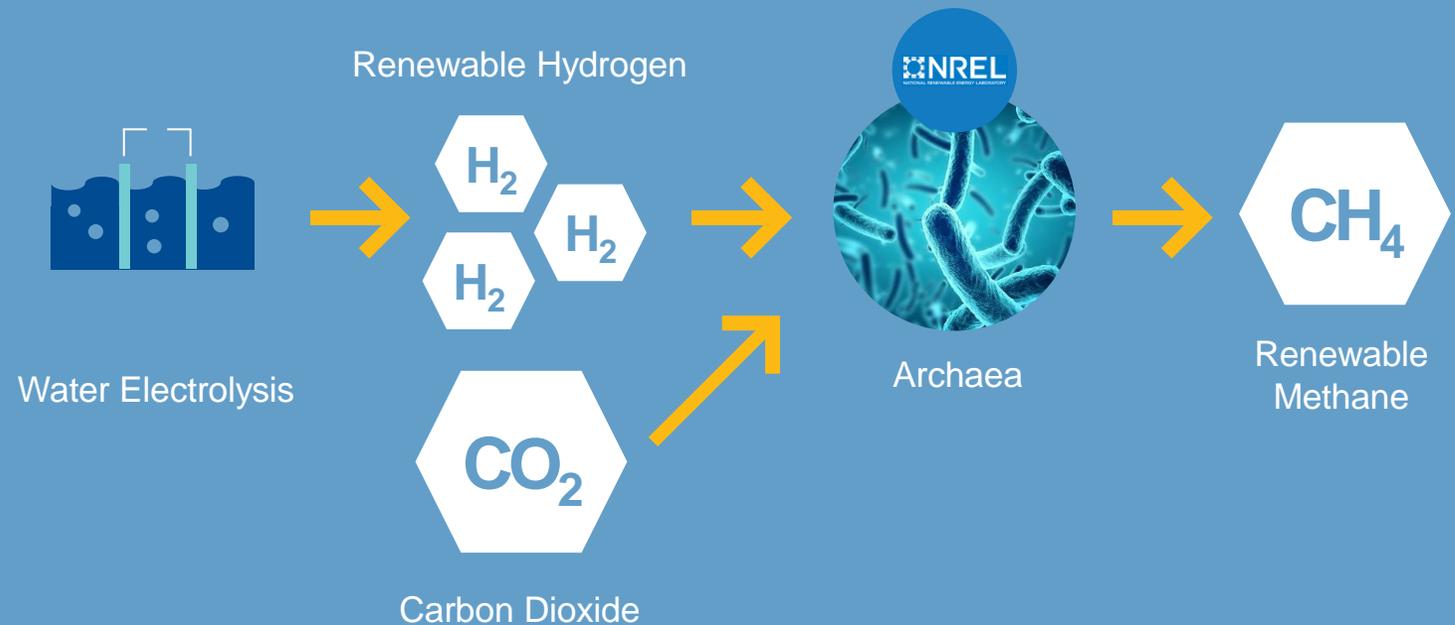
- Started injecting RNG into SoCalGas' pipeline in early 2021
- Facility will produce up to 985,000 MMBtu/year of RNG using up to 300,000 tons of waste diverted from local landfills
- Facility will produce RNG, renewable electricity (~13 MW), and Class A organic fertilizer
- The net carbon dioxide emissions reduction will be approximately 220,000 metric tons annually, which is the equivalent of taking 47,500 cars off the road



Biomethanation

Teaming up with the NREL to launch P2G biomethanation

- » Showing real world feasibility of P2G with the DoE and the National Renewable Energy Laboratory



Thank You

