



RNG Project Development

October 20, 2020





About Peoples Gas



Market reach

Peoples Gas service territory extends throughout Florida.



Local presence

600+ employees make Peoples Gas a core part of the communities we serve.



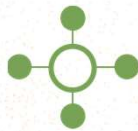
Customer base

400,000+ diversified customers — growing at a rapid pace.



Substantial assets

13,000 miles of main
7,200 miles of service lines
25 miles of transmission.



Diversified supply

Upstream transportation contracts with multiple interstate pipelines.

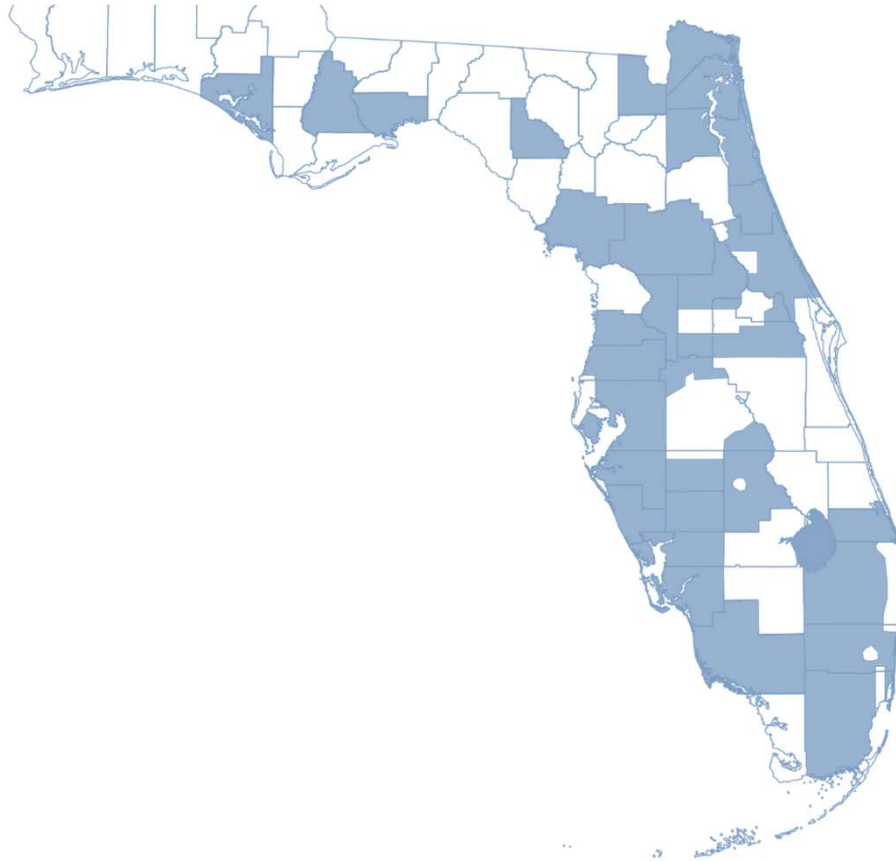


Corporate support

Owned by Emera, one of North America's largest energy companies.



Peoples Gas: At the Heart of Florida's Energy





Renewable Natural Gas

01



Waste Gas

produced from waste material and put to beneficial use

02



Methane

biogas that is mainly methane and carbon dioxide

03



Cleaned

to remove carbon dioxide and trace chemicals

04

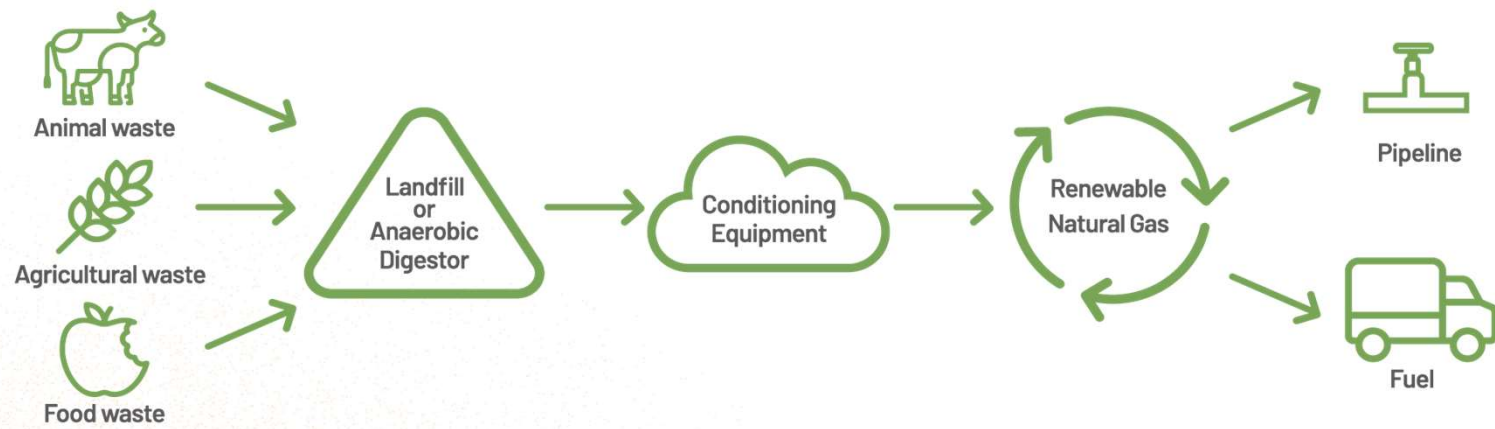


Blended

with propane in some cases to increase heat content



RNG Value Chain



Sources of waste gas include landfills, wastewater treatment plants, animals and food.





Florida's RNG Potential



- **Ranks #13 in the U.S.** for methane production potential from biogas sources.
- Has **70 operational biogas projects** with potential for **375 new projects** to be developed based on the estimated amount of available organic material.
- **Generate \$1.13 Billion** in capital investment and create 9,383 construction jobs and 623 long term jobs.
- Produce 52 BCF/yr of biogas or **33 BCF/yr of renewable methane**



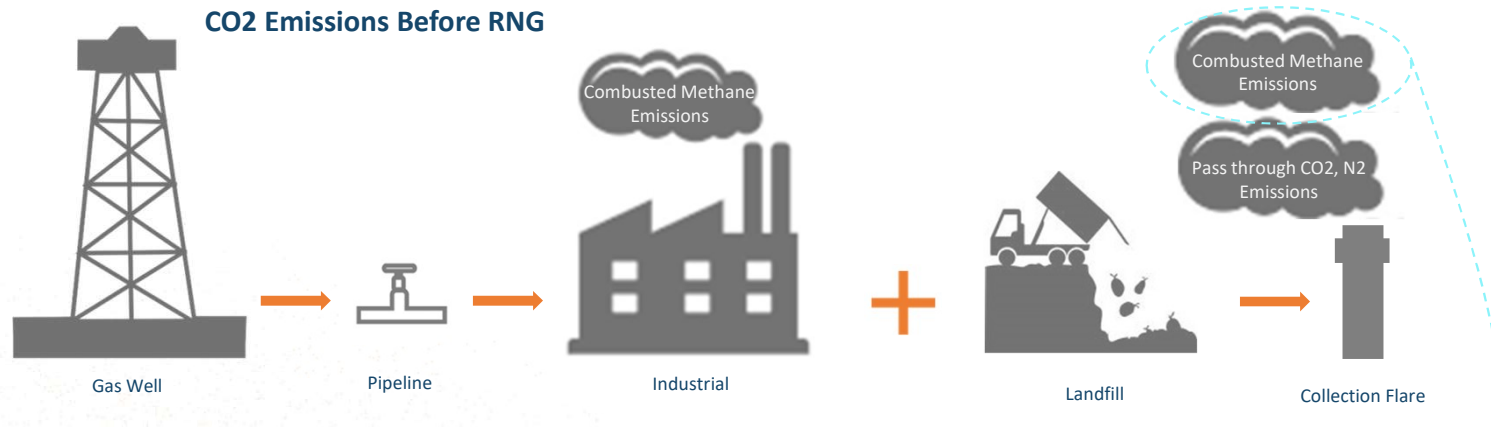


Benefits of RNG

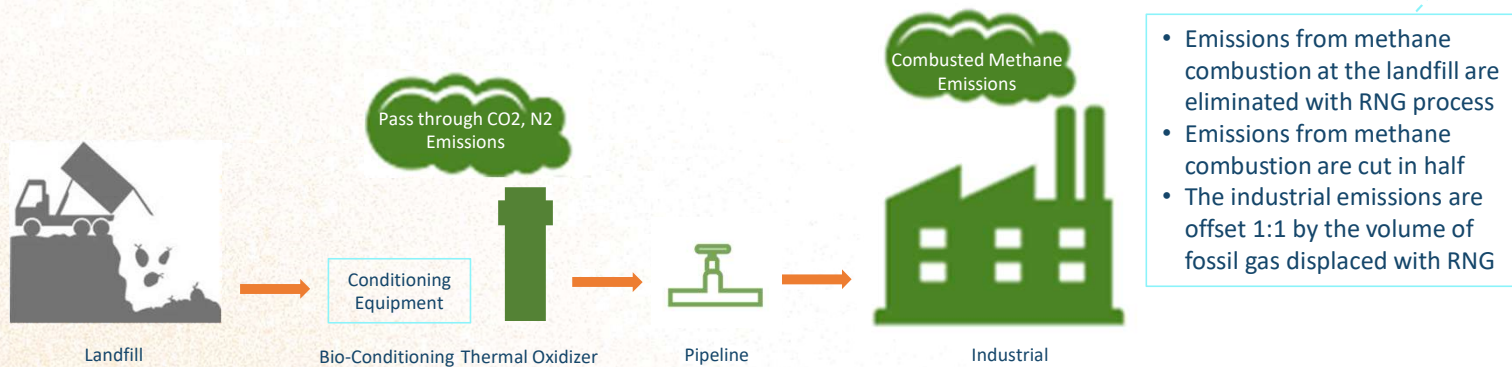
- **Renewable** source of energy.
- Cleaned and injected into the gas utility system or into vehicles.
- Provides major reductions in greenhouse gas emissions plus clean air gains.
- Zero, and sometimes negative emissions.
- Resilient, consistent and low cost.
- Local gas source that enhances system reliability, infrastructure and economic development.



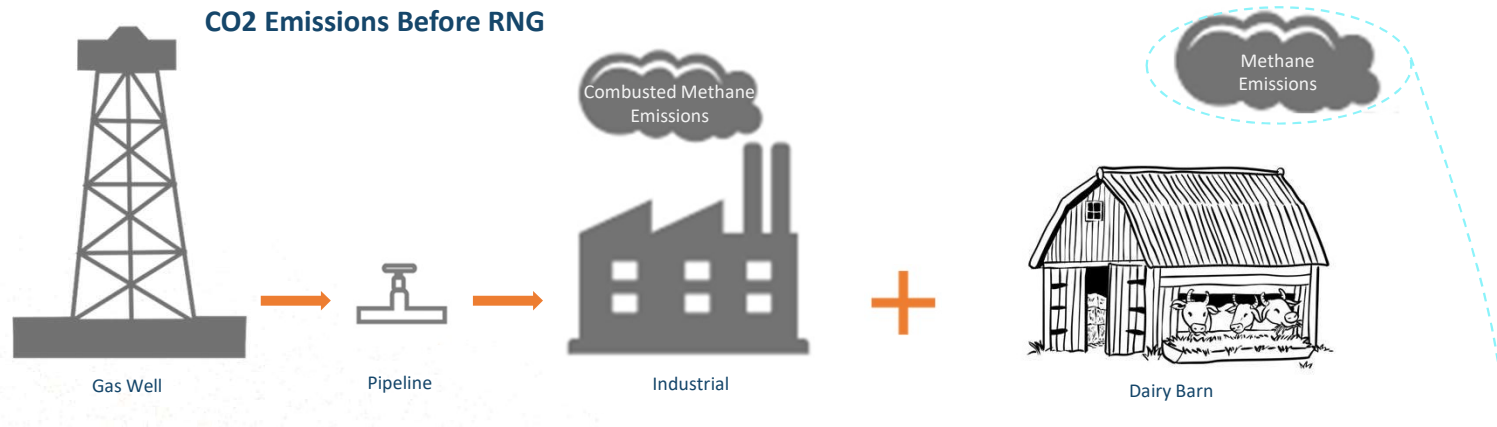
Zero or Negative Emissions? Landfill



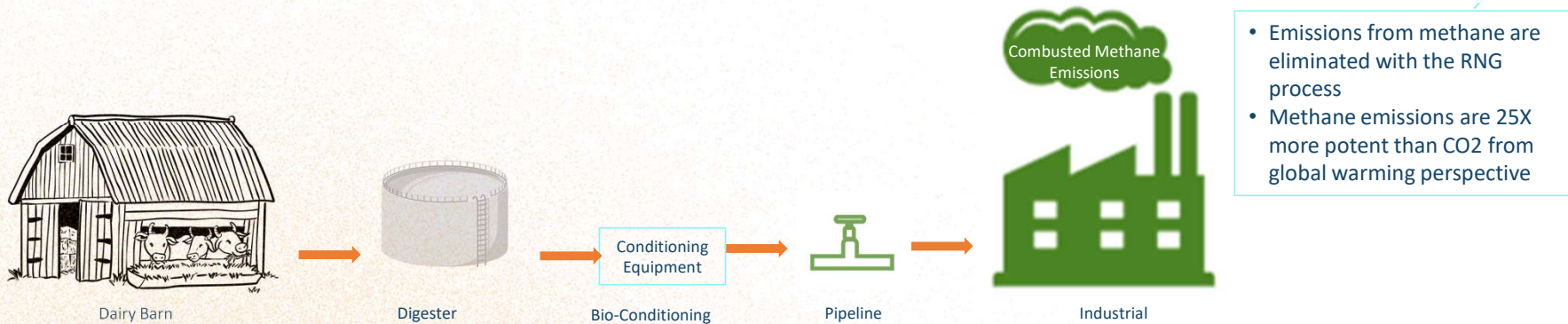
CO2 Emissions After RNG (Not including added benefit of switching from diesel trucks to CNG)



Zero or Negative Emissions? Dairy



CO2 Emissions After RNG (Not including added benefit of switching from diesel trucks to CNG)





Natural Gas: Production to Consumption



CLIMATE



REVENUE



CLEAN AIR

- RNG provides the only identified alternative for natural gas utilities to meet increasing carbon reduction demands.
- A local fuel without need for interstate gas pipeline transportation.
- Often sited at the end of a gas system and supports infrastructure projects that may not be justified otherwise.
- A physical hedge against gas price volatility.
- Further reduces air emissions.





Regulatory Drivers

- Natural gas has led most of the decarbonization of the grid in the last decade
- Residential decarbonization through electrification being promoted on West Coast
- Despite the benefits, natural gas being looked at like coal
 - States passing mandates 100% renewable/clean energy
 - CA 2045, NM 2050, WA 2045, HI 2045, PR 2050 ...
 - NY banning new natural gas pipelines
- Environmental incentives being developed to use RNG in vehicles
 - US EPA RFS program
 - CA LCFS program
 - OR, NY, and WA considering LCFS programs



Value of the Gas

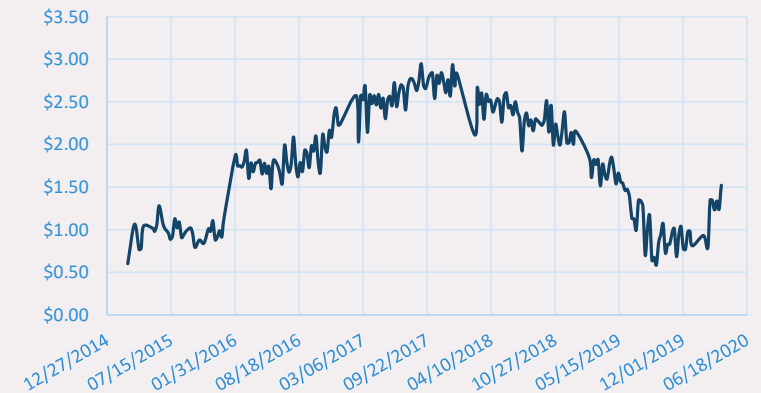
- Commodity Price
- LCFS Value
 - Quantity of Gas Produced
 - Number of Credits per MMBTU (CI Score)
 - Carbon Pricing under LCFS
- RIN Value
 - Quantity of Gas Produced
 - Pricing of RINs (11.7 RINS/MMBTU)

Historical CA LCFS Pricing (\$)



Source: CA Air Resources Board – LCFS credits are currently ~\$195/MT

Historical RIN Pricing (\$)



Source: US EPA - RINs are currently ~\$1.60/RIN

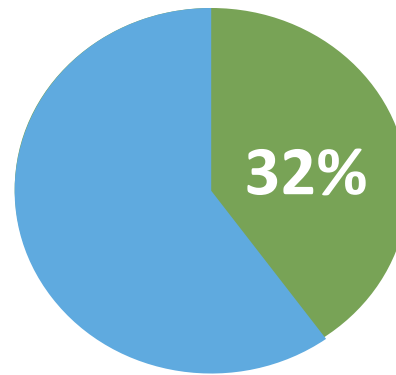




Driving Down Emissions with RNG



Proven natural gas vehicle technology is 90% cleaner than current U.S. EPA standards. Fueling NGVs with RNG improves emissions even further. RNG yields ultra-low, carbon-neutral, or even carbon-negative lifecycle emissions.



- Total NGV Fuel Use
645 Million GGE
- RNG Component
204 Million GGE

2018 NGV Fuel Use

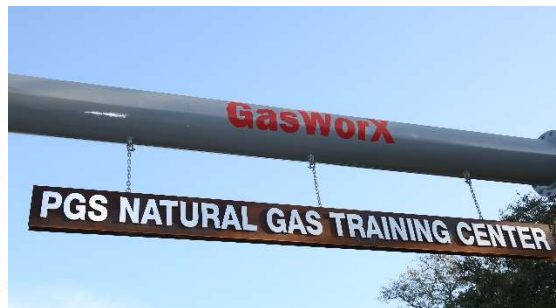
In 2018, **32%** of all on-road fuel used in natural gas vehicles was RNG

Over the last 5 years, RNG use as a transportation fuel has increased 577%, displacing 7+ million tons of carbon dioxide equivalent.





Natural Gas: Production to Consumption



01

Safety

Primary goal is always safety.

02

Consensus

Assess differences between RNG and fossil gas.
Work with engineering team and identify concerns.
Understand RNG constituents with third-party review.

03

Interconnection

Review others; SoCal Gas often referenced.
Develop an interconnection process.



Variability Among Sources of Supply

Parameter	Landfill	Dairy, Swine	WWTP	Food Waste	Gasifier, Syngas
Water Content					
Sulfur, including Hydrogen Sulfide					
Hydrogen					
Carbon dioxide					
Nitrogen					
Oxygen					
Ammonia					
Biologicals					
Mercury					
Volatile metals					
Siloxanes					
Volatile Organic Compounds					
Semi-volatile Organic Compounds					
Halocarbons					
Aldehydes and Ketones					
Polychlorinated biphenyls (PCBs)*	*				
Pesticides*	*		*	*	

*If suspected





Our RNG Interconnection Process

1. Capacity study
 - Evaluate pipeline system ability to take quantity of gas
 - Review gas source and gas quality
 - Identify source gas or material testing needs
2. Preliminary engineering study
 - Estimate pipeline development costs, including land acquisition, site development, metering, permitting, O&M, etc.
 - Provide interconnection customer with a service rate
3. Interconnection customer assesses utility rates and project viability
4. Gas transportation agreement executed
5. Finalize detailed engineering study
6. Design, permitting and construction
7. Interconnection of RNG facility





RNG Partnership

- Convert waste into usable energy.
- Develop workable strategies to interconnect RNG supply to the Peoples Gas system, the largest in Florida.
- Invest in raw biogas generation and cleanup technology to produce pipeline quality RNG under a tariff-based rate.
- Create opportunities for purchase of biogas with additional assistance to secure environmental incentives.
- Reduce the carbon footprint of natural gas, in some cases above and beyond displacing fossil fuel usage.





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