



RNG PRODUCTION UPDATE

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Agenda



- Loves/Trillium Intro
- RNG Production
 - RNG Production
 - RFS Quotas vs. Statute
 - RIN Prices
- Demand
 - California is King
 - CNG Alternatives
- RFS Path Forward
 - RFS Reform Requirements
 - RNG Production is Key

Loves/Trillium Intro

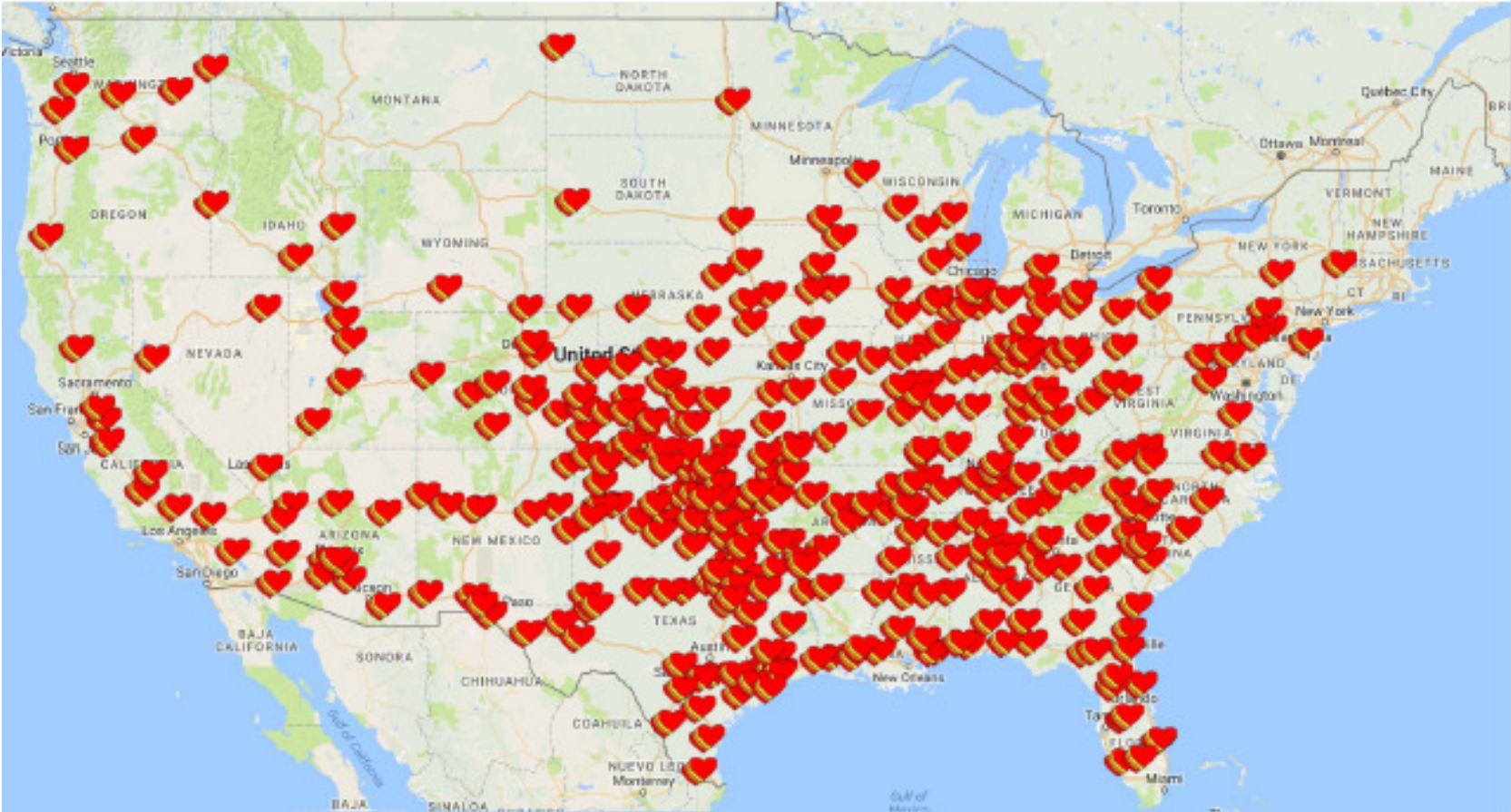


Love's Travel Stops

- 440 locations
- 41 states
- One of largest private companies in America
- Founded by Tom and Judy Love in 1964
- Family owned and operated
- Customer focused and inspired organization



Loves/Trillium Intro



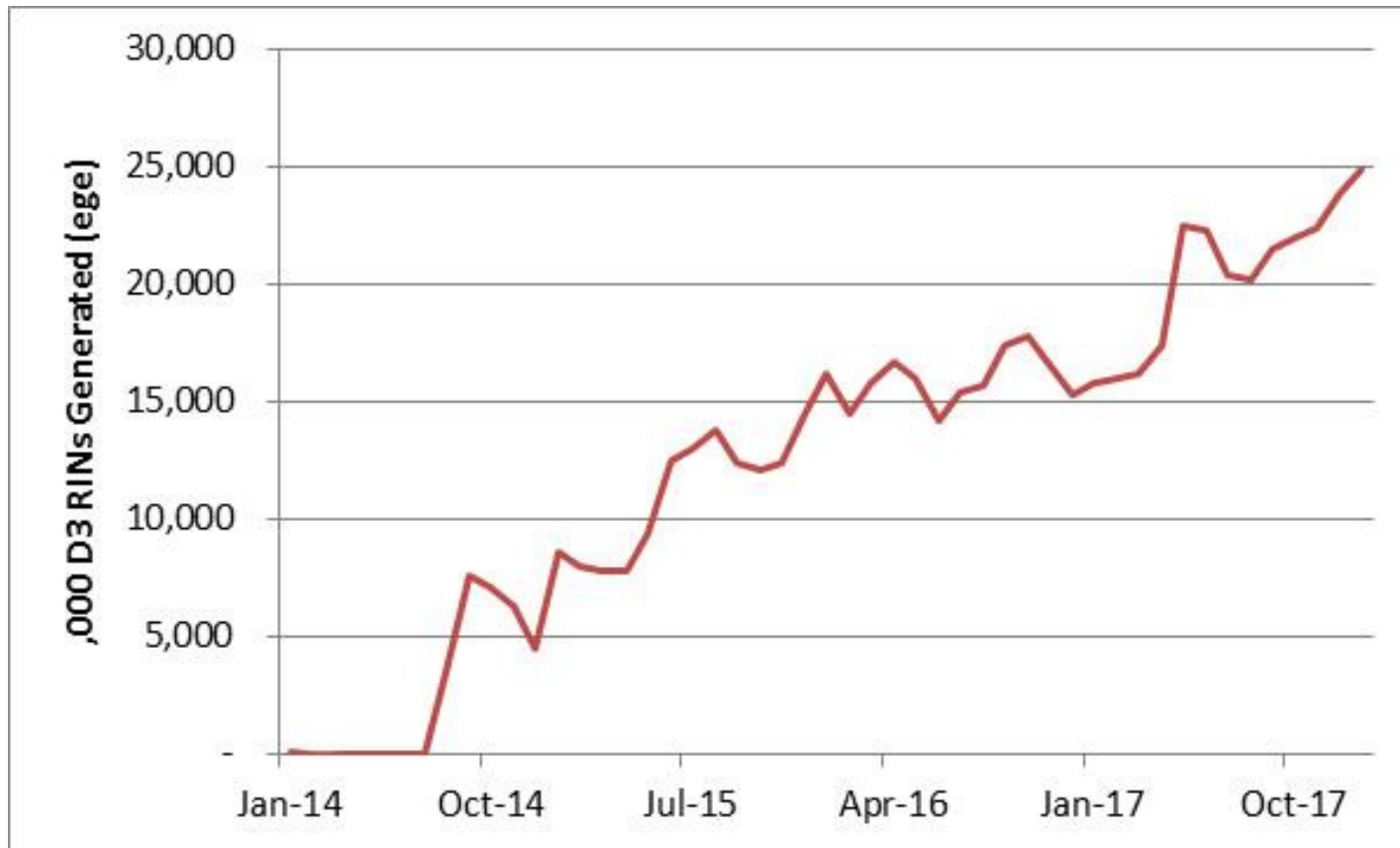
Loves/Trillium Intro



Trillium Provides Turnkey RNG solutions:

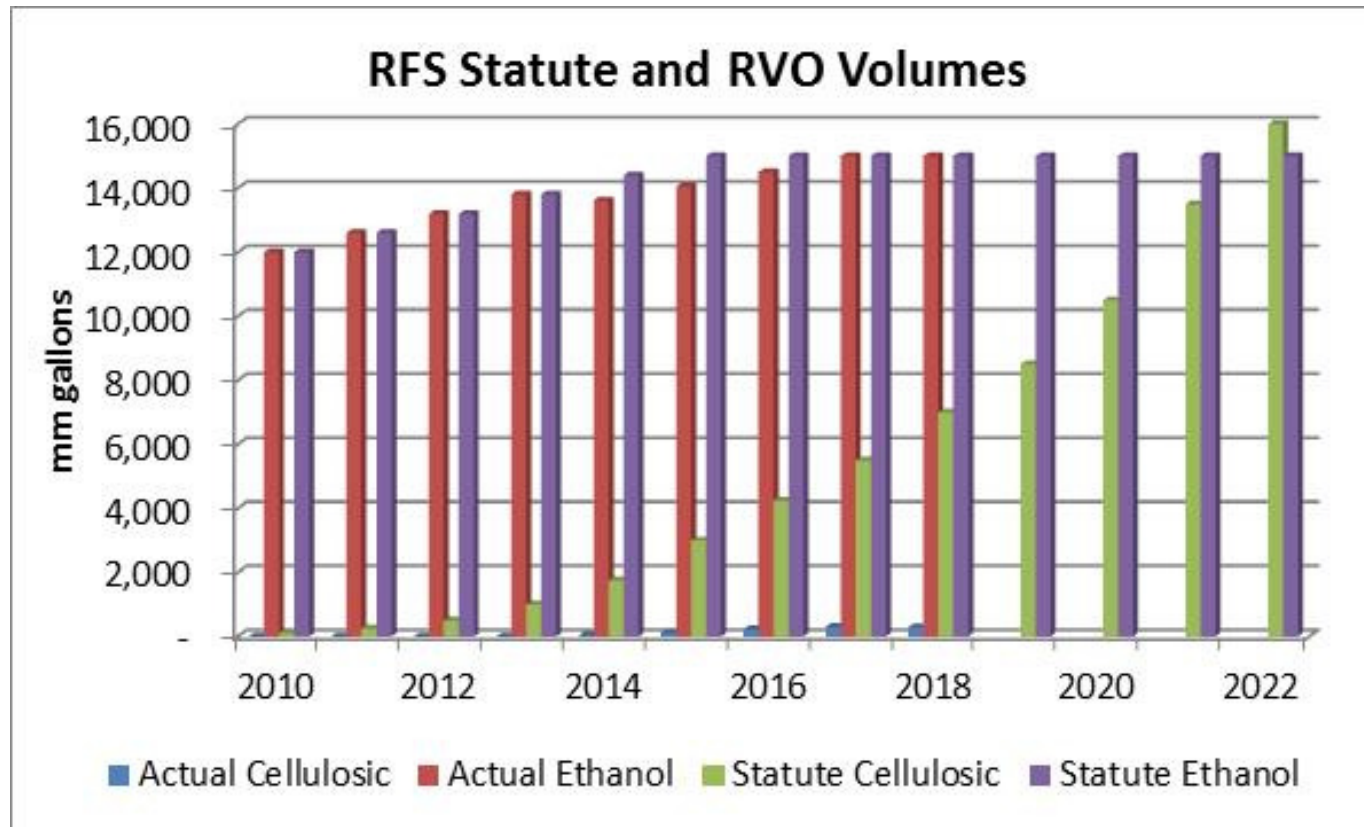
- RNG Production and Offtake
 - 2nd largest natural gas vehicle fuel retailer in the US
- Fuel Supply Management
- Engineering & Design
- Construction
- Operations & Maintenance
- Virtual Pipeline Solutions
- National Footprint
- RIN and LCFS Liquidity
- Grant Assistance
- Compressor and Hydraulic Intensifier Manufacturing

RNG Production



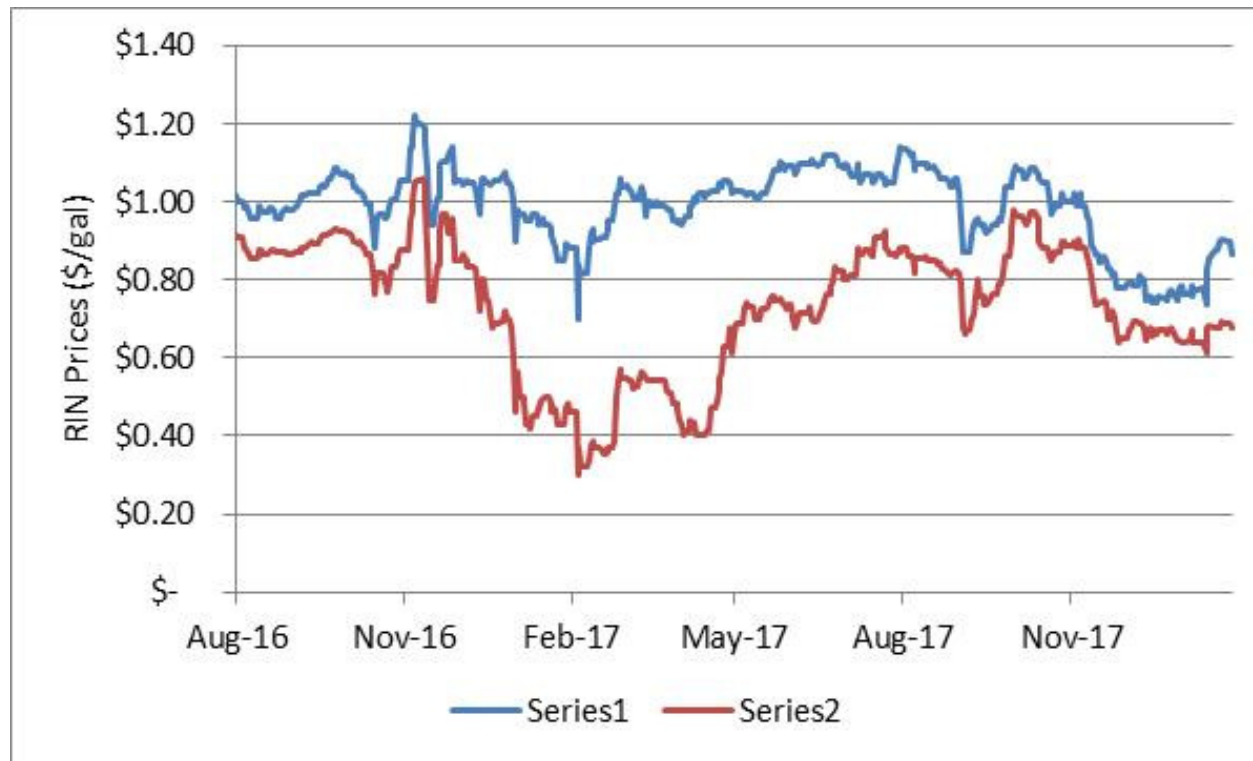
- RNG Production has grown sharply over the past 4 years.
- 44 RNG facilities are currently operating and EPA approved for RIN generation. Vast majority are LFG projects, due to ease of feedstock testing.

RFS Quotas vs Statute



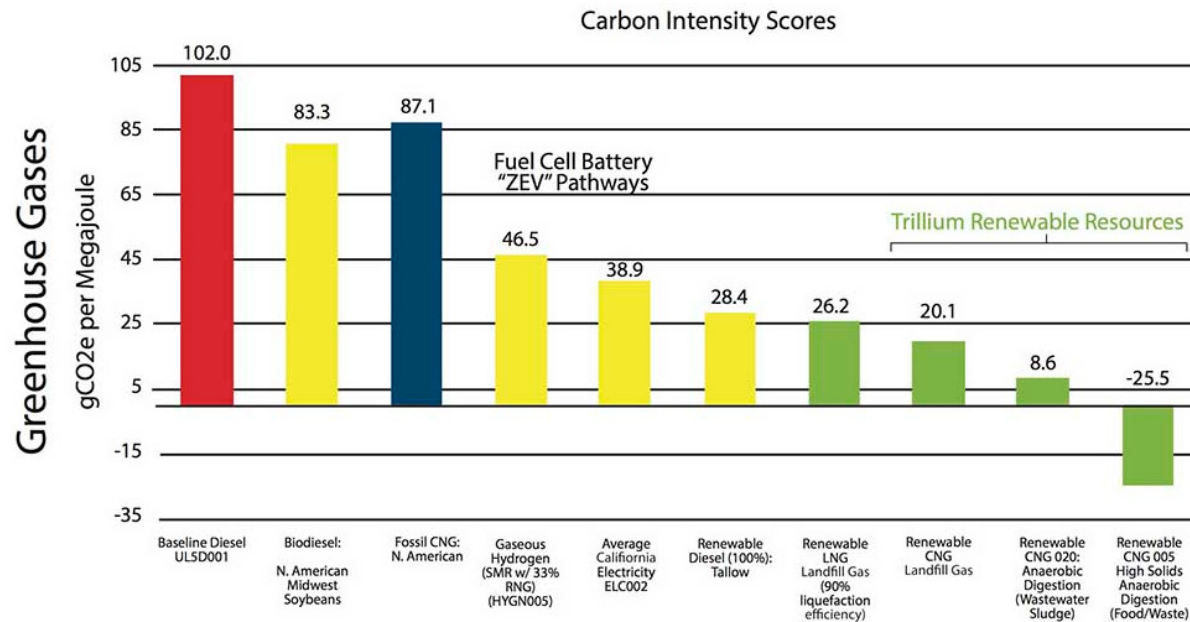
- Cellulosic production has underperformed Congress's expectations since 2010
- RNG has met original growth outlooks, but is five years behind
- Ethanol was an evolved industry prior to the RFS

RIN Prices



- RIN price volatility has skyrocketed over the past 15 months
- Four driving factors: (1) concerns about program stability, (2) expiration of blender tax credit, (3) concerns about market's ability to meet mandate levels
- At current D3 RIN prices (\$2.50/egge), RINs generate \$29/MMBtu in revenue

Demand: California is King



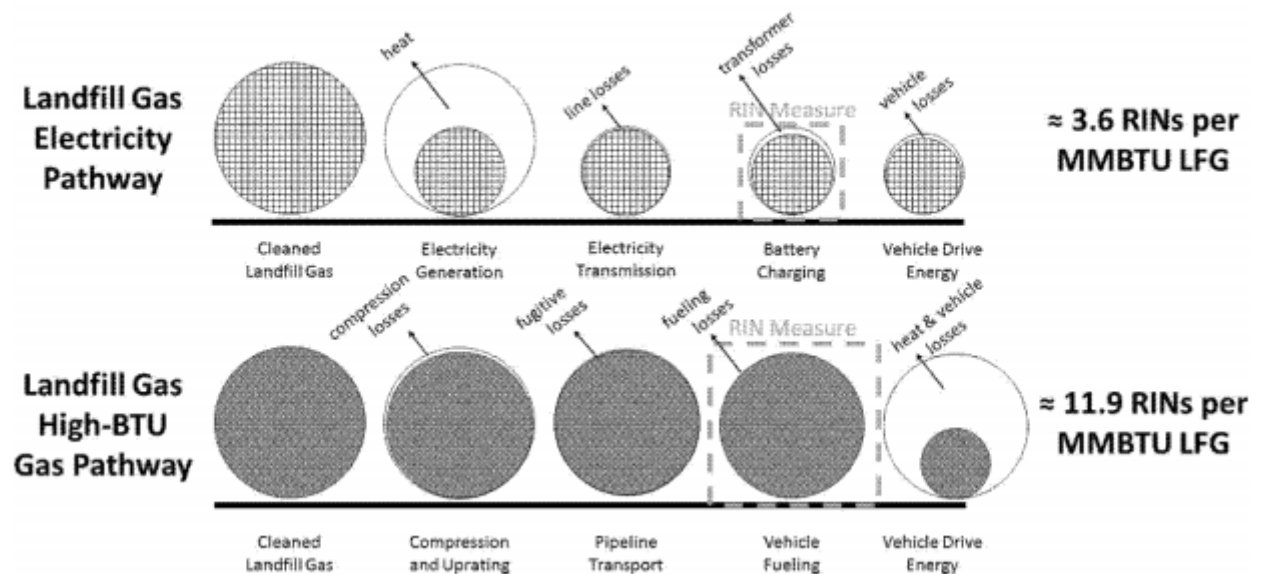
Bar Graph- Data provided by Gladstein, Neandross & Associates "Game Changer" Report, May 2016. For more information, please go to www.gladstein.org.

- CNG for vehicle consumption earns a lower Carbon Intensity score from CARB than diesel or gasoline, but RNG's CI is *much* lower than even CNG
- At current LCFS prices (\$150/Credit), LFG RNG dispensed in California adds ~ \$7.50/MMBtu of revenue. WWTP RNG: \$12.00. Dairy RNG: \$45.00.
- Many producers are requiring California consumption from offtakers in order to generate the additional 25-155% of available revenue
- End-use customers are extracting increasing percentages of this additional revenue

Demand: CNG Alternatives

- NGVs are not the only option available to RNG projects.
- RNG for fuel cells
- RNG for EVs
- RNG for Hydrogen
- RNG for refineries

Figure VII.D.2-1. Hypothetical RIN Generation for Electric and Gas Pathways



- These CNG alternatives are nascent stage technologies in need of regulatory certainty

RFS Reform Requirements



- Maintain support for ethanol
- Stabilize and potentially lower RIN prices
- Address Biointermediates
- Foster continued development of evolving fuels
- Encourage new fuel development
- Legislate and clarify post-2022

Production is Key

- The EPA's message to RNG producers is clear: Put Up or Shut Up
- It is critical for any potential RNG producer to get their gas to market as quickly as possible
- Biogas rights owners need to bring high-quality reliable supply to market with qualified developers and place it with long-term partners
- New technology pathways face a tough battle for EPA pathway certification



Section III.D.2 below, EPA is instead calculating a year-over-year rate of growth in the renewable CNG/LNG industry by comparing RIN generation for CNG/LNG derived from biogas from October 2015–September 2016 to the RIN generation for these same fuels from October 2016–September 2017 (the most recent month for which data are available. We then apply this year-over-year growth rate to the total number of cellulosic RINs available for compliance from CNG/LNG in 2016 (the most recent year for which complete data are available), to estimate the production of CNG/LNG derived from biogas in 2018.⁴⁴