

RNG Development

Challenges and Opportunities

Luke Morrow



Morrow Renewables

- Morrow has been in LFG gathering and treating since 1998
- Morrow designs and builds physical solvent and other plants
- Morrow has developed 10 high btu RNG projects and operates 8 currently



Recent History

- Prior to 2014, less than 25 RNG projects from landfills existed
- Projects survived on natural gas price and sometimes Section 29 tax credits or any green premium available
- The expiration of Section 29 tax credits and the volatility of the natural gas market made RNG investments risky

More Recent History

- Over 25 LFG projects have been built since RNG received D3 designation in 2014 (54 total in US)
- California LCFS markets have added significant value to RNG projects if available
- Producers have been able to capture strong pricing as a result

Current Reality

- EPA is in the middle of a Reset period, which will guide the RFS through the end of 2022
- California demand for RNG from landfill gas is tightening as the promise of dairy RNG is much more attractive for dispensers
- Natural gas prices are at historic lows
- Breakeven for LFG RNG projects is more than 2x natural gas price

Near Future

- Reset provisions will have a big impact on 2020 through 2022, and will give a preview of post 2022
- If no legislation is passed, EPA will determine how the RFS is administered post 2022 by regulation

Opportunities for RNG Going Forward

- RFS does not end in 2022, nor is it set to sunset at this point
- Many states are considering or establishing LCFS programs
- Some states are investigating an RNG standard for utilities
- Some utilities are working to offer RNG at a premium to customers