California Public Utility Commission

May 23, 2019 Workshop
Interconnection Issues

1. Uniform program – across both utilities
   - Same study process
   - Same contracts

2. Uniform Flow rate – based on hours of operation
   - Systems (upgraders, compressors, interconnections) are built for growth – decreasing emissions, improving economies.
   - Biological process – with significant seasonal variation
   - Equipment has minimum flow rates. Result only a number of hours a day operating, in the winter and initial years
   - Consistent flow rates in contracts need to be limited to hours of operation, not requiring operations 24 hours/day
Interconnection Issues

3. Imbalances – need to watch
   - Expectation – CP agreement provides needed flexibility, including balancing across projects and with outside parties
   - Concern – over delivery: utility will buy the excess gas. Financial penalty is not the issue. Issue is what happens to the credits

4. Btu Districts
   - Understandable – but expensive and not needed in transmission line interconnections

5. Transparency into long-term demand
   - Rural pipelines. Pressure to reduced natural gas use. Don’t want stranded assets/failed projects
Interconnection Issues

6. Expansion of AB 2313 program: 50% of interconnection costs up to $5MM for a dairy cluster. Projects need certainty
   - Significant funding expansion
   - Queue, transparency – know you will receive reimbursement
   - Fund dairy gathering line expansions –
     - Match funding after initial build
     - Leverage infrastructure
     - Benefit smaller dairy projects

7. Maintain flexibility on EPC
   - Provides an option to projects
   - Utility helpful long-lead equipment ordering
Hub (gas cleanup) & Spoke (dairy digester)

Hub & Spoke Model

- High pressure gas pipeline to utility interconnection

- Hub
  - Gas Cleaning & Conditioning
  - Gas Pressurizing

- Dairy 1
  - Low pressure PVC gathering line

- Dairy 2

- Dairy 3

- Dairy 4

- Dairy 5

- Dairy 6

- Dairy 7

- Dairy 8

- Dairy 9

- Dairy 10
Cluster – North Visalia
Cluster – South Tulare
Cluster – Buttonwillow

Explanation of Attachment 4:
1) The biogas collection line will be buried with 6 feet of cover.
2) The biogas collection line material will be PE4713, inside HDPE.
3) The minimum discharge pressure will be 1 Hg quantify.
4) The operating pressure will be approximately 75 psi at the diaries, falling to 10 psi at the upgrading plant inlet at maximum rates during the summer.
5) The operating pressure will be approximately 10 psi at the diaries, falling to 10 psi at the upgrading plant inlet at minimum rates during the winter.
6) The pre-processed biogas will enter the biogas collection line at each dairy at 50 deg F and may hit 90 deg F by the time it reaches the upgrading plant inlet.