RNG WORKS

THE COALITION FOR RENEWABLE NATURAL GAS

How to Deal with Start-ups & Outages at RNG Production Facilities

Importance of Owners/Developers/Operators Maintaining an Open Line of Communication with the Pipeline

Importance of Owners/Developers/Operators Maintaining an Open Line of Communication with The Pipeline

Introduction

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Project of Discussion
Renewable Power Producers, LLC
Lawrence, KS

Importance of Owners/Developers/Operators Maintaining an Open Line of Communication with The Pipeline

Your end of the line:

Before the gas leaves your plant, you should have analyzed it for all of the main constituents in the pipeline's Tariff and be prepared to shut the gas in and flare it at the plant if it is out of specification.

Your plan should include installation of gas analyzers and control valves just before leaving the process to be able to allow to pass to pipeline or reject to flare.

You do not want to pack the pipeline between your plant and the interconnect point with bad gas – it's hard to get that gas to flow back to you.

Most Tariffs will include limits on:

- Minimum Energy content (BTU/scf)
- CO2
- O2
- Moisture
- There are others, but most will need to come out in almost any of the typical gas cleaning processes (H_2S, sulfurs, dirt)

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Their end of the line:

Get to know your local pipeline technician early

- Some have the local authority to work with you in the early days to help with the startup process
  - High H_2O Example
- Best lunch you ever bought!

Does your pipeline have experience with Bio-Gas (landfill gas in particular)?

- Is there any flexibility at startup? – ASK NOW!!
  - You probably won't get much flexibility – if any – on O_2 or H_2S because of the inherent dangers
  - CO_2 and Gas quality – usually a function of N_2 – are not as critical in some cases and the pipeline may be more willing to work with you as your gas stream may not be a large contributor to their flow

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What to know before you approach a pipeline company about a connection:

Regulations

- Interstate Pipelines are highly regulated thus project timelines can be longer than producers expect or anticipate
- Meeting pipeline quality gas standards is critical and producers must show they can **reliably** provide pipeline quality gas.

Pressures

- Know the pipeline MAOP. Transmission companies typically operate at higher pressures. Producers must be able to flow into (buck) interstate pipeline pressures which can be costly in terms of equipment and power (compression). Your interconnect pressure today may change tomorrow. It is recommended that you plan your compression on the pipeline's MAOP or at least have the discussion with the pipeline on any planned pressure changes.

Interconnects

- Interstate Pipeline interconnects can be expensive.
- Location of the interconnect onto the pipeline does matter – previous quality and flexibility discussion.
- There may be an option for the owner to build the interconnect, however; the owner must use pipeline approved vendors and often it's more expensive.
- Preliminary project scopes may change – size of the interconnect, double tap for blending, etc.

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What went well for our project:

Successfully brought Renewable Gas to the market.

The gas produced is equivalent to the gas in the receiving pipeline.

This project changed a lot of minds within the receiving pipeline management team on the capabilities of the available technologies for cleaning landfill gas and converting it to renewable natural gas.

Volumes have been steady and have increased since the projects inception.

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What could have been improved:

More collaboration between pipeline and producer on where to locate the interconnect site.

More collaboration on developing win-win timeline(s) for first flows.

More collaboration about limitations of both pipeline and producer.

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Conclusion – Questions?

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