Overview of an Interconnection Facility

CPUC RNG Workshop

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Differences Between Biogas & Renewable Natural Gas (RNG)

<table>
<thead>
<tr>
<th>Primary Constituents</th>
<th>Biogas</th>
<th>“Conditioned” Biogas for Onsite Generation</th>
<th>“Conditioned and Upgraded” Biogas for Onsite CNG</th>
<th>“Conditioned and Upgraded” Biogas for Pipeline Injection (aka RNG or biomethane)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gas Composition and Heating Value</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CH4</td>
<td>61.0%</td>
<td>61.0%</td>
<td>95.7%</td>
<td>98.0%</td>
</tr>
<tr>
<td>CO2</td>
<td>37.6%</td>
<td>37.6%</td>
<td>2.9%</td>
<td>0.85%</td>
</tr>
<tr>
<td>O2</td>
<td>0.4%</td>
<td>0.4%</td>
<td>0.4%</td>
<td>0.15%</td>
</tr>
<tr>
<td>N2</td>
<td>1.0%</td>
<td>1.0%</td>
<td>1.0%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Heating Value (btu/scf)</td>
<td>625</td>
<td>625</td>
<td>971</td>
<td>994</td>
</tr>
<tr>
<td><strong>Two of the Key Trace Constituents</strong></td>
<td></td>
<td></td>
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<tr>
<td>H2S</td>
<td>300 ppm</td>
<td>1 ppm</td>
<td>1 ppm</td>
<td>1 ppm</td>
</tr>
<tr>
<td>Siloxanes</td>
<td>4,000 ppb</td>
<td>70 ppb</td>
<td>1 ppb</td>
<td>1 ppb</td>
</tr>
</tbody>
</table>
Two Primary Components of the Term “Interconnection”

“Interconnection” = “Point of Receipt” + “Pipeline Extension”

The Interconnection Facility is funded by the developer and owned/operated by the utility.
“Point of Receipt” Component of the Interconnection

The Point of Receipt:

1. **Monitors gas quality** to ensure it meets SoCalGas Rule 30 Gas Quality Specifications (e.g. CO\(_2\), O\(_2\), total inerts, heating value, H\(_2\)S)

2. **Prevents non-compliant gas** from entering the utility pipeline network should the monitored Rule 30 parameters not be met

3. **Meters and odorizes** the volume of RNG put into the utility pipeline network

Point of Receipt at CR&R Perris
Pipeline extension is the pipe installed from the outlet of the Point of Receipt to the nearest utility pipeline having the capacity to accept the interconnector volume of RNG.

Majority of the pipelines in streets are **distribution lines with limited takeaway capability to accept interconnector gas** during summer months (particularly in the early a.m. hours)

- May result in high pipeline extension costs because the nearest pipeline having the capacity is miles away.
Overview

- Installation of ~1.4 miles of 8” high pressure steel pipe (directional bore method)
- Majority of the street where pipe was installed does not have curb and gutter (minimized the need to cut asphalt/concrete)
- Pipeline crossed the San Jacinto Canal
Interconnection Capacity versus Takeaway Capacity
(Separate and Distinct Services)

» Interconnection Capacity
  - The maximum physical capacity of the interconnection will be determined by the sizing of the point of receipt. It is not:
    • the capacity of the Utility’s pipeline system to transport gas away from the interconnection point,
    • and is not any commitment by the Utility of takeaway capacity

» Takeaway Capacity
  - The Utility separately provides takeaway services, including the option to expand system capacity to increase takeaway services, through its otherwise applicable tariffs
    • Gas Marketers/Energy Providers or end use customers can also contract for this service on behalf of interconnectors
Questions?