CEC Staff Workshop

2010-2011 Alternative Transportation Fuels Investment Plan

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Biomethane

What is “Biogas”?

- Raw manufactured gas from the processing of organic feedstocks
- 60% methane, 39% CO2, and 1% H2S and other constituents of concern

What is “Biomethane”?

- Biogas with impurities and constituents of concern removed (or scrubbed)
- Degree of scrubbing required depends on intended use of biomethane

End uses of biomethane include:

- Flaring
- Onsite electric generation
- Deliver into gas transportation pipeline
- Developing uses include CNG/LNG as vehicle fuel, and fuel cells

End Use Assessment

Flaring

- Last resort, least economic
- Difficult to permit

Onsite electric generation

- Feed-in tariff, well-established, small operations can implement, limited scrubbing
- Difficult to permit (NOx limits)

Inject into gas transportation pipeline

- Negotiated pricing, dispatchable from storage, least cost transportation tariff
- Economics, permitting, gas quality, proximity to pipelines

Developing uses include CNG/LNG as vehicle fuel, and fuel cells

Biomethane Injection to Pipeline as Vehicle Fuel

Utility Role

- Developer delivers biomethane to utility meter
- PG&E does not own or operate projects
- Planning and facilitation – project siting, pipeline capacity analysis,
- Receive biomethane - test gas quality impact of non-traditional organic feedstock
- Transport biomethane – least cost CA production transportation tariff

Pipeline Biomethane - Challenges

Financial incentives

- Production tax incentives
  - State – very difficult
  - Federal – Biogas Production Tax Credit at $4.27 per MMBtu (currently being discussed with House Committee on Science and Technology)

Permitting

- Co-digestion
  - Imported feedstocks render facility to landfill classification
  - Lagoon vs. tank processing ground water impacts
- Time Consuming and Expensive
  - Air, Water, Waste regulations

Pipeline Biomethane - Gas Quality Challenge

CPUC-approved Tariffs

- Approved for agricultural and animal waste
- Acceptance of new feedstocks requires gas quality testing to understand constituents of concern

Gas Quality Testing Requirements

- Test every new feedstock until experience gained
- Initial feedstock research
- Physical testing of biomethane
  - Project start-up
  - Ongoing periodic testing

Pipeline Biomethane - Gas Quality Challenge

Expensive Testing Required

Who will pay for testing?

- Rate base or project developer must pay
- Testing cannot move forward without funding to perform research and testing

Pipeline Biomethane - How Can AB118 Help?

Funding for Gas Quality Testing under RD&D

- Provide funding for feedstocks used for biomethane to produce vehicle fuel
- Data will be shared among all CA gas utilities
- Projects developed will become “template-level” projects and replicated
- Advance program by a factor of years in support of state climate change goals
- Dedicated vehicle fuel purpose can be secured through contracting

Dairy Biomethane Permitting Guidance Funding

- Process streamlining will decrease time requirement down to 20%
- Dan Pellissier of Governor’s Office needs $750,000 of RD&D funding

PG&E's Biomethane Injection Program Contact

Ken Brennan

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- Responsibilities include the development of new gas-related business opportunities with a specific focus on biomethane to pipeline injection projects
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