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SoCalGas Comments: Demonstrating Innovative Solutions to Convert California's Residual Forest Biomass Resources into Renewable Natural Gas

Please find attached SoCalGas' comments on the CEC's Draft Solicitation on Demonstrating Innovative Solutions to Convert California's Residual Forest Biomass Resources into Renewable Natural Gas. Please let me know if you have any questions.

Additional submitted attachment is included below.



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California Energy Commission
Dockets Office, MS-4
1516 Ninth Street
Sacramento, CA 95814-5512

Subject: Request for Comments on Draft Solicitation on Demonstrating Innovative Solutions to Concert California’s Forest Biomass Resources into Renewable Natural Gas (Draft Solicitation), Docket: 19-ERDD-01

Southern California Gas Company (SoCalGas) is pleased to see the California Energy Commission (CEC) is developing a competitive Grant Funding Opportunity (GFO) through the Natural Gas Research and Development (R&D) Program aimed at developing and demonstrating innovative technologies for the conversion of forest waste biomass to renewable natural gas (RNG).

Converting dead trees and other flammable biomass sources into renewable natural gas not only creates a reliable and low-carbon energy source, but also enhances public safety, reduces black carbon and other greenhouse gas emissions from large-scale destructive fires, which in turn minimizes human exposure to wildfire smoke.

Below you will find input to the questions asked about the proposed research targets presented in the Draft Solicitation.

Questions

1. Are the technical targets for the pilot demonstration clear and reasonable? Should they be narrowed further? If not, why not? Please identify the specific targets that should be changed and the recommended change.

- *Project scale should not include an upper bound. For example: “>50 scfm pipeline ready gas based on SoCalGas Rule 30.” Larger scale projects might reduce cost by utilizing “off-the-shelf” components.*
- *Project runtime should include some constraint. For example: “>500 hours of runtime, **over a period of 6 weeks**, including at least 16 hours of continuous run time.” (This example represents ~50% uptime for the 6 week test period).*

2. Are the target cost and technical specifications for a commercially-mature system clear and reasonable? Should they be narrowed further? If not, why not? Please identify the specific targets that should be changed and the recommended change.

- *Estimating current and future costs will be very challenging. Cost estimate data will be valuable information for the CEC to collect, but this metric should not be the prime determinant of a winning proposal.*
- *\$12-\$21/MMBtu LCOE is competitive with other RNG production technologies and represents a significant improvement in production cost for gasification systems.*
- *Target price should exclude the cost of or payment for feedstock, any subsidies or credits (e.g. Low Carbon Fuel Standard, Renewable Identification Numbers, etc.) and the cost of pipeline interconnection. Produced gas delivery pressure should be 30 psi.*
- *The CEC should consider including carbon intensity estimates for the RNG produced as this will materially impact the viability of a commercial scale project.*

3. Will a technology that achieves these targets have the characteristics required for a commercially-viable woody biomass to RNG system? What targets are missing that would help improve commercial viability?

- *Emphasis should be placed on reproducibility and potential economies of hardware mass production. Commercial system should be capable of being produced in a factory in the hundreds of units per week and ready for turn-key installation.*
- *Emphasis should be placed on containerized, modular, or skid mounted commercial system designs.*
- *Systems should be autonomous, i.e., capable of remote monitoring.*

4. Are the feedstock requirements clear and reasonable?

- *Yes*

5. Are the correct technologies being focused on (conversion, cleanup, and upgrading systems)? Are there components that offer more opportunity for cost reduction?

- *Yes*

6. What is the best way to evaluate the levelized cost of methane presented by proposed projects? Would requiring a technical overview of the pathway, assumptions used, and economic estimates be sufficient?

- *Estimating current and future costs will be very challenging. Cost estimate data will be valuable information for the CEC to collect, but this metric should not be the prime determinant of a winning proposal.*
- *The CEC should provide a standard Levelized Cost of Energy (LCOE) model that will be used to analyze each project. Applicants would fill-out a simple data entry table supported by:*

- *Piping and instrumentation diagram (P&ID)*
- *List of capital items*
- *Estimated fabrication time and cost*
- *List consumables and replacement schedules*
- *Applicant input would be validated by an independent process or mechanical engineering firm.*

Please let us know if you have any questions.

/s/ Tim Carmichael

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