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West Coast Wastes Comments on the Forest Waste Solicitation

On behalf of West Coast Waste, one of the largest wood waste processors in the Central Valley, I am transmitting the attached comments

Additional submitted attachment is included below.

West Coast Waste's Comments on Draft Solicitation on Demonstrating Innovative Solutions to Convert California's Residual Forest Biomass Resources into Renewable Natural Gas

Thank you for the opportunity to provide input prior to the release of this important RFP. West Coast Waste is in the process of developing several biomass to energy projects in central California. For the past five years we have been researching and investigating woody waste conversion technologies and our comments are based largely on the lessons we have learned so far.

Our comments and questions that we request be considered are:

1. Preamble states “developing and demonstrating innovative technologies for the conversion of forest waste biomass to renewable natural gas (RNG).”
 - a. The text describes a small pilot plant. Can these include current technologies that have already been pilot tested or demonstrated on biomass other than forest wastes or specifically the types of forest wastes in California?
 - b. What composition does the RNG need to meet, i.e. pipeline quality for blending with natural gas; a specific % methane etc.?
 - c. RNG output is specified as 2.97 – 5.94 MMBtu/hr. This will require 7-15 tons/day of wood. The largest biomass gasification to methane demonstration plant is the GoBiGas plant in Sweden, rated at approximately 150 dry tons/day of biomass. How did CEC select this specific size point of 2.97 – 5.94 MMBtu/hr? Are you open to considering larger inputs?
2. Table 1 – the total sulfur value of 12.5 ppm is more stringent than found in PG&E Rule 21 for biomethane (17 ppmv). Why?
 - a. Is the 12.5 ppm value in ppmw (weight) or ppmv (volume)?
3. Do the cost values in Table 2 assume that the forest wastes are delivered to the pilot plant site at zero cost? If not, what is the delivered cost of the forest waste to be used for the financial modeling?
4. The notice states “Include a techno-economic analysis for a full-scale facility”. What level of forest waste input/RNG output (MMBtu/hr) does the CEC consider as “full-scale”? Does full-scale also mean “commercially mature” as noted later in the document?
5. For purpose of calculating the production economics, do we assume that all the forest wastes be delivered already chipped or shredded, or is that in the scope of the pilot plant program?
6. It is important that all proposers present their information with a common set of assumptions. The RFP should clearly state the assumptions to be used.
7. The notice states “All feedstock used for test and demonstration activities must be waste biomass only – not purpose-grown energy crops”. Please confirm that agricultural wastes that are not “purpose-grown energy crops”, such as nut tree trimming and removal wastes and processing residues like almond hulls, do qualify for blending with

forest wastes per the next statement “At least half of all feedstock used for test and demonstration activities must be **forest waste** biomass.”

8. The text states: “A gasification to methanation process which uses innovative components and/or methods to significantly reduce capital and operating costs compared to conventional systems.”
 - a. What does the CEC consider as “innovative”? Can it be simply an improvement of a commercially proven/commercially available technology already used to convert biomass to methane?
 - b. Since there have been only a handful of biomass gasification to methane pilot/demonstration plants worldwide, what does the CEC consider as “conventional systems”?
 - c. Why would it have to “significantly reduce capital and operating costs compared to conventional systems, as long as the technology is capable of meeting the cost targets in Table 2?
9. On Page 4, Question 2:
 - a. Based on the pilot plant wood input level of 7-15 tons/day, what input level does the CEC consider to be “commercially mature”?
 - b. Is the CEC interested in a demonstration level to follow this pilot plant level of R&D? If so, at what daily input/output?/

Thank you for the opportunity to present these comments. Please let us know if you need any clarification or wish to discuss them further.