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INTER-OFFICE COMMUNICATION

Energy Supply

DATE: March 21, 2006

TO: Michael L. Kurtz, General Manager

FROM: Chip Allen, Assistant General Manager for Energy Supply

SUBJECT: DOE Biorefinery System for Production of Liquid transportation Biofuels

At the March 6, 2006 meeting the City Commission asked staff to review a US DOE funding opportunity presented by Mr. Dave Bruderly. The DOE funding opportunity is for applications to design, construct, build and operate an integrated biorefinery employing lignocellulosic feedstocks for the production of combinations of (i) liquid transportation fuels, (ii) biobased chemicals, (iii) substitutes for petroleum based feedstocks and products and energy in the form of electricity and useful heat. The biorefinery is to be operational within 3-4 years.

The project timeline is:

- Letter of intent due 3/30/06 – Must include title of project, name of project director, amount of fuels requested, one page abstract of feedstock to be used, outputs of biorefinery including volumes and masses, whether the facility will be stand alone or integrated into an existing facility or operation.
- Application due August 10, 2006 – Must include up to 100 page project narrative, project summary abstract, construction program budget spreadsheet for design, engineering and construction, budget spreadsheet for start-up, commissioning and operating and maintenance costs during total project period, budget justification file, sub award budget file covering each party costing more than $100,000 or 50% of the work effort, Certification/Assurances, commitment letters for firm funding from third parties contributing to the cost sharing, biographical sketches for key personnel including related experience in designing, construction and operating biomass, fuel and chemical processing facilities, and an environmental checklist.
- Oral presentations in early November 2006 for selected parties.
- Award announcements in January 2007
- Award funds available in May 2007.

Project specifics

1. The advanced biorefinery must be operating profitably (a stated project goal) without federal subsidies after initial construction loans are repaid. Minimum biomass feedstock is at least 700 dry metric tons per day (this equates to 950 – 1400 tons of wet biomass as that is the way it usually is received). All biomass feedstocks are lignocellulosic feedstocks but not those grown specifically for food (including animal food).

2. The applicants are responsible for at least 60% of the total allowable costs of the project for the commercial application projects. All pre-award costs are incurred at the applicants risk whether an applicant receives an award or if the award is less than the applicant expected to receive.

3. If transportation biofuel is produced it must be ethanol, biodiesel or any fungible replacement for gasoline or diesel as a transportation fuel produced from lignocellulosics.

Potential Issues & Risks

- It appears that this is for operation of a biorefinery and that the products of this refinery are then used in cogeneration for electricity and steam for heating. Primary mission is for the production of biofuel or bioproducts. Funding would not be applied to the commercial generation portion of the project.
- Plant will have significant biomass material supply needs.
- GRU would have to find partners who can design and operate the refinery as well as providing firm funding commitments.
- There is a high financial risk if the refinery does not produce a positive cash flow after the end of DOE funding. This risk is higher given the developmental nature of this type of project.
- GRU has no expertise in refining design, operation, construction or permitting.
- The required timeline is tight and GRU may have to invest as much as $500,000 to hire the expertise required to meet the deadlines for the application.
- The viability of the schedule to have the facility operational in three years is questionable. Cost over-runs pose a high risk given the nature of material costs in the market place today. Equity holders would have to bear all costs and performance related costs as well as operational reliability and supply risk for biomass feedstocks.

Recommendation

Staff recommends that the City not participate in the proposed funding opportunity.