

## Greater Charlotte Region Biofuels Project

### Economic Analysis RFQ # 2009-001

#### Questions & Answers

January 27, 2010

1. Is CCOG preparing the Life Cycle Assessment (LCA)? **Yes.**
2. If yes, will the consultant use the scenarios assessed in the LCA to develop the Economic Analysis or will the CCOG use the process diagrams developed by the consultant to complete the LCA? **We have scoped the LCA, however, we would welcome the opportunity to work interactively with the Economic Analysis team to coordinate pertinent elements of the LCA and economic analysis. We envision that these processes would run in parallel.**
3. If no, is the consultant expected to prepare the LCA as part of this contract and could more information be provided about the LCA scenarios? **N/A. The consultant is not expected to prepare the LCA.**
4. Will CCOG provide the consultant with the current brown grease related capital, O&M, collection, treatment and transport costs and grease tipping fees and diesel consumption? **Neither CMU nor CCOG collects brown grease. Private grease haulers and septage firms perform brown grease transportation, processing, and disposal. Therefore, our expectation is that the Consultant will gather this information.**
5. Should the Scope of Work include a third scenario “(c) cost of doing nothing” in addition to scenarios (a) and (b) in order to accurately compare the proposed scenarios with the current operation? **The expectation is that the economic analysis will show some new and avoidance costs associated with the proposed project, so it would make sense to show the baseline against which the new project is compared. Our expectation is that the Consultant will show the baseline which would be the cost of doing nothing.**
6. Are the agricultural capital and annual costs related to growing biofuel crops on the arable land next to the McDowell WWTF, and refining the crop into feedstock part of the Scope of Work of this Economic Analysis? **Yes. This is the heart of the LCA, so the inclusion of these project elements in the cost analysis would be important.**
7. Has a brown grease feedstock analysis been completed and will this information be provided to size the facility with only grease as the feedstock? **We are in the process of completing this analysis now. We have analyzed preliminary samples, calculated the number of samples needed for a representative sample of Charlotte restaurant grease traps, and we will characterize that representative sample. We have also conducted an analysis of Charlotte-Mecklenburg grease generation rates and can provide that information to the selected Consultant.**
8. For the multiple feedstock options, will the facility rely on biofuel crops exclusively grown and processed at the McDowell WWTF, or will it purchase other feedstock such as virgin canola oil and spent cooking oils? **At this point, we will assume that all plant-based feedstock is grown on CMU land. This land is available at no or low cost and is adjacent to a potential supply of reclaimed water**

for irrigation. If the consultant wanted to look at a scenario where other feedstocks outside the scope of the current project were included to evaluate yet another scenario, this would certainly be acceptable if it would not change the cost of the analysis.

9. Will the scenario with grease curbside pickup include a fleet of CMU-owned and operated grease trap pumper trucks with regularly scheduled grease pick-ups at restaurants and other grease producing locations? **No. We currently do not have a developed residential collection program. Therefore, we would require suggestions for implementation that can be used in scenario (a).**
10. It is our understanding that—if awarded this contract—the consultant would be solely responsible for the Economic Analysis, and the results of the Life Cycle Assessment (provided by Client) will be made available for incorporation into the Economic Analysis. Is this correct? **Yes.**
11. Has a specific technology been identified for pretreatment and conversion of high free fatty acid feedstock (i.e. brown grease, waste vegetable oil, etc.)? The costs associated with the available technologies vary significantly and will have a large impact upon the results of the Economic Analysis. Is it the Awardee's responsibility to include a survey of available technologies? **As part of the research project we are vetting a number of brown grease-to-biodiesel technology vendors, and we anticipate that we will be able to learn from them what scenarios for operation and management would be most feasible for us. Therefore, we will be able to provide this information at some point in the future, but we will probably not be able to provide it at the start of the consultant's work. No, it is not the Awardee's responsibility to conduct the vetting survey.**
12. What is expected components of facility in respects to time and operations? **As part of the research project we are vetting a number of brown grease-to-biodiesel technology vendors, and we anticipate that we will be able to learn from them what scenarios for operation and management would be most feasible for us. Therefore, we will be able to provide technology descriptions at some point in the future, but we will expect the consultant to estimate the appropriate facility needs.**
13. What is CMUD monthly diesel consumption? **Information about CMU's diesel consumption will be provided to the selected consultant.**
14. What is the expected man hours for project? **See #12 above.**
15. Yellow grease pick up from what sources? (restaurant, etc.) **We currently do not have a developed residential collection program. Therefore, we would require suggestions for implementation that can be used in scenario (a).**
16. Small scale production facility per treatment plant or one main production facility to collect from all five WWTP? **This will be part of the consultant's proposed scenarios.**
17. What grease is scenario (b) based on? **In scenario (b) we envision that the facility would be able to accept any grease dropped off on-site.**

18. What will wash water contain? **As part of the research project we are vetting a number of brown grease-to-biodiesel technology vendors, we anticipate that their process will dictate the manner in which the water separation is accomplished. This will determine the composition of the wash water.**
19. What design, capital, operating and maintenance cost data for the full-scale version of the GCRBF (including the biofuels processing facility and the grease trap waste receiving and dewatering facility) will be provided to the consultant as a part of the GCRBF Master Plan and what design and cost data will the consultant be required to provide? **The consultant will be required to provide the data listed.**
20. What are the required design throughputs for the two facility options - 1) the larger canola/brown grease facility with curbside grease pickup and 2) the smaller grease-only facility without curbside pickup? **We are expecting the selected consultant to propose a potential design including throughputs.**
21. Should it be assumed that CMU will own and operate the facilities and that tax-exempt financing will be available to finance the facilities? **No. Currently, CMU does not have plans to own and operate the facilities.**
22. What capital and operating cost data will be provided to the consultant regarding CMU's current method of grease management? **CMU is currently the regulatory body for grease management in Charlotte Mecklenburg service area. We can provide our study of Charlotte Mecklenburg grease generation rates and also some characteristics about the grease (as well as the raw data collected for this study). We are in the process of completing this analysis now. We have analyzed preliminary samples, calculated the number of samples needed for a representative sample of Charlotte restaurant grease traps, and we will characterize that representative sample. We have also conducted an analysis of Charlotte-Mecklenburg grease generation rates and can provide that information to the selected Consultant. We have no data for regions outside of the Charlotte-Mecklenburg Utilities service area.**
23. Are data available regarding the locations and service needs (i.e., load sizes and collection frequencies) of potential canola oil and grease pickup locations to facilitate the estimation of curbside pickup costs? Should the consultant assume that both canola oil and brown grease will be picked up at the curb or only brown grease? **No. We currently do not have a developed residential collection program. Therefore, we would require suggestions for implementation that can be used in scenario (a).**
24. Is it correct to assume that only one on-site project meeting is required for this project? **No. At least two (2) on-site meetings have been proposed in the RFQ, schedule page 3, however, the selected consultant on-site project meetings will be determined with finalized contract with the selected consultant.**
25. We have assumed that the site for the trap grease water separation and biodiesel plant would be located at the McDowell Water Reclamation Facility. If not, please identify the location of the trap grease separation facility. If a final site has not been selected, how many sites are being considered and who is going to provide that data to the Economic Analysis? **The McDowell facility is the primary**

site we are interested in for the evaluation. There is an alternate site possibility, but we were not planning to include that in the economic analysis. If more details about the alternate site become available so that we could provide economic data for its consideration, we will discuss that with the selected consultant as the economic analysis commences.

26. Can CCOG provide the Economic Consultant with your resource assessment study, or estimates of trap grease volume available per year or other time period for the region? In not, does CCOG have data on the number of traps registered in a 50 mile radius of the potential site and the capacity of each? What other resource assessment data can be provided? **We can provide our study of Charlotte Mecklenburg grease generation rates and also some characteristics about the grease (as well as the raw data collected for this study). We are in the process of completing this analysis now. We have analyzed preliminary samples, calculated the number of samples needed for a representative sample of Charlotte restaurant grease traps, and we will characterize that representative sample. We have also conducted an analysis of Charlotte-Mecklenburg grease generation rates and can provide that information to the selected Consultant. We have no data for regions outside of the Charlotte-Mecklenburg Utilities service area.**
27. If some or all of the waste water from trap grease separation will be used for land applications to produce oilseeds, where will the water go during the off-season and other times of the year where land application cannot be accommodated? **The Consultant can propose this as part of either scenario – we see this as part of the evaluation. We can provide waste water treatment facility process data, and if the consultant deemed that plant expansion were necessary, for the full facility, at this time, there are no known constraints that would preclude plant expansion.**
28. What is the largest increase on de-greased waste water volume that can be accommodated at the waste water treatment facility? Is CCOG planning to expand their current waste water treatment facility to accommodate the increased flows of waste water created by trap grease separation? Is this capacity expansion technically feasible given the current site constraints? **See answer to #27 (Note: CCOG is not the Utility; the Utility is Charlotte Mecklenburg Utilities, a partner in the project).**
29. Will the cap ex and op ex costs associated with the expanded waste water treatment volumes and/or capacity be provided to the Economic Consultant? **No. See #27 above.**
30. Who will be the technology provider for the oilseed and oilseed product storage, material handling, crushing, and crude oil degumming? **The identity of the technology providers for these activities in the pilot project can be provided to the selected consultant. They are members of the research team. For a full scale project, we anticipate that the oilseed will be provided by a local farmer, who will be subcontracted each season to provide the necessary agricultural services. CMU will provide a potential oilseed storage location, and the consultant will provide storage options that can be included in the economic analysis. As to the material handling, crushing, and crude oil degumming, the consultant should provide likely scenarios. We can provide data from one of our project advisors who has a crop-to-biodiesel operation.**
31. What is the expected operating capacity of the oilseed crushing plant? **The consultant will be able to calculate the estimated crop yields from the land available to us, they should assume that the oilseed crushing operation would be sized to accommodate this crop size.**

32. Will the cap ex and op ex costs associated with oilseed production, storage, crushing, and degumming be provided by CCOG or CCOG's technology providers, or will the Economic Consultant be responsible for these estimates? **See #30 above. We do not have these estimates and do not plan to directly provide them to the consultant.**
33. Does CCOG have contracts for the oilseed meal, product specification sheets, market prices, and other data to describe the meal marketing side of the project? **We do not have contracts for the meal. We would like the consultants to look at the options available to us.**
34. If these estimates will be the responsibility of the Economic Consultant, then what is the acreage of oilseed crop estimated? Who owns and operates these lands? What will be the contract price of the oil seeds delivered to the crushing facility? **CMU owns and operates the land under consideration and will provide information about pilot acreage and potential future acreage to the selected consultant. The consultant should evaluate contract pricing of oilseed as part of scenario development.**
35. Will the trap grease water separation facility be operated and managed by a utility, a not for profit organization, or a for-profit organization? Will the trap grease water separation facility be operated and managed by a utility, a not for profit organization, or a for-profit organization? **This is yet to be decided. CMU is not currently interested in operating such a facility. The consultant will need to look at various scenarios for the operation and management of water separation. As part of the research project we are vetting a number of brown grease-to-biodiesel technology vendors, and we anticipate that because their process will dictate the manner in which the water separation is accomplished, we will be able to learn from them what scenarios for operation and management would be most feasible for us. Therefore, we will be able to provide this information at some point in the future, but we will probably not be able to provide it at the start of the consultant's work.**
36. Will the biodiesel plant be operated and managed by a utility, a not for profit organization, or a for-profit organization? **See #35.**
37. How large is the fleet of vehicles that CCOG intends to displace diesel fuel for biodiesel? What are the types and ages of the vehicles? How much diesel is currently sold for? At what price? Who will provide the capital, maintenance, and operating costs of the fleet? What is the target biodiesel blend rate? Does the capital and operating costs of the blending and storage equipment included? Is splash blending or some other type of blending technology envisioned? **CMU equipment will use the produced biodiesel. Information pertinent to the fleet will be provided to the selected consultant.**
38. Who will buy the excess biodiesel? **See #37.**
39. Every biodiesel technology vendor holds its process technology and detailed equipment lists and cost structure proprietary and nondisclosure agreements are the norm. How does CCOG intend to use this confidential data and provide a public report and public model? Will CCOG negotiate the release of public data from the technology vendors? **We anticipate that the vetting described in #35 will lead vendors to disclose sufficient non-confidential information for us to evaluate their technology. This information will be provided to the selected consultant. [North Carolina General](#)**

[Statutes](#) would require that all information obtained through this process be made publicly available.