



COORDINATING RESEARCH COUNCIL, INC.

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August 30, 2012

In reply, refer to:
CRC Project No. E-102

Dear Prospective Bidder:

The Coordinating Research Council (CRC) invites you to submit a written proposal to provide services for "Transportation Fuel Life Cycle Assessment: Validation and Uncertainty of Well-to-Wheel GHG Estimates." (CRC Project No. E-102). A description of the project is presented in Exhibit A, "Statement of Work."

Please indicate by letter, fax, or email by **September 14th, 2012** if you or your organization intends to submit a written proposal for this research program. CRC will answer technical questions regarding the Request for Proposal if they are submitted in writing. CRC will then return written answers to all of the bidders, along with a copy of the original questions.

A CRC technical group composed of industry representatives will evaluate your proposal. CRC reserves the right to accept or reject any or all proposals.

The reporting requirements will be monthly progress reports and a summary technical report at the end of the contractual period. The reporting requirements are described in more detail in the attachment entitled "Reports" (Exhibit B).

The proposal must be submitted as two separate documents. The technical approach to the problem will be described in part one, and a cost breakdown that is priced by task will be described in part two. The cost proposal document should include all costs associated with conducting the proposed program. The technical proposal shall not be longer than 10 pages in length.

CRC expects to negotiate a cost-plus fixed fee or cost reimbursement contract for the research program.

Contract language for intellectual property and liability clauses is presented in Exhibit C and in Exhibit D, respectively.

Important selection factors to be taken into account are listed in Exhibit E. CRC evaluation procedures require the technical group to complete a thorough technical evaluation before considering costs. After developing a recommendation based on technical considerations, the costs are revealed and the recommendation is modified as needed.

Electronic copies of the technical and cost proposals should be submitted to:

Dr. Chris Tennant
Coordinating Research Council
3650 Mansell Road, Suite 140
Alpharetta, GA 30022

Phone: 678-795-0506
Fax: 678-795-0509
E-mail: ctennant@crcao.org

The deadline for receipt of your proposal is **September 28th, 2012.**

Yours truly,

Chris Tennant
Deputy Director

EXHIBIT A

Transportation Fuel Life Cycle Assessment: Validation and Uncertainty of Well-to-Wheel GHG Estimates

Background

On October 18-19, 2011, the Coordinating Research Council (CRC) hosted a workshop at Argonne National Laboratory outside of Chicago, Illinois, which focused on technical issues associated with life cycle assessment (LCA) of transportation fuels, with particular emphasis on biofuels.¹ The following goals were established for the workshop:

- Outline technical needs arising out of policy actions and the ability of LCA to meet those needs.
- Identify research results and activities that have come to light in the past two years that have helped to close data gaps previously outlined as outstanding issues.
- Identify remaining gaps, areas of uncertainties, validation/verification, model transparency, and data quality issues.
- Establish priorities for directed research to narrow knowledge gaps and gather experts' opinions on where scarce research dollars would best be spent.

Session 2 of the workshop focused on LCA gaps and uncertainties. In particular, this session highlighted several areas of uncertainty and variability in the application of LCA models that significantly influence the final predicted carbon intensity of a particular fuel. The sources of uncertainty and variability discussed at the workshop included treatment of co-products, assessment of agricultural N₂O emissions, the selection of general approach to LCA (i.e., attributional or consequential analysis), and choice of boundary conditions.

As outlined in the Scope of Work below, the E-102 project is intended to better quantify sources of uncertainty and variability in LCA models by conducting an in-depth evaluation of model inputs and uncertainties around those inputs for several specific fuel pathways. Methods to validate the inputs and resulting outputs from the models should be discussed, and overall model uncertainty for the different pathways should be assessed.

¹ For a summary of that workshop, see http://www.crao.org/workshops/LCA%20October%202011/Final%20CRC_LCA_Workshop_Summary%2012202011.pdf

Scope of Work

Task 1: Selection of Fuel Pathways – Under this task, the contractor will work with the CRC project team to identify the specific fuel pathways for evaluation. Initially, we would suggest the following:

- Petroleum gasoline/diesel
- Corn ethanol
- Soy biodiesel/renewable diesel
- Sugarcane ethanol
- Cellulosic ethanol
- Natural gas

Based on further discussion, the list above may change slightly. However, the contractor should budget for a detailed analysis of up to six pathways.

Task 2: Identification of and Critical Review of Model Inputs – For the primary LCA models used for regulatory purposes (i.e., CA-GREET, EPA’s modeling for RFS2, GHGenius, and Biograce), the inputs to the models for each fuel pathway, and the basis of those inputs, should be identified and validated. The focus of this assessment should be on the inputs that have the greatest impact on the final GHG results (e.g., fertilizer use and production for corn ethanol is likely to be an important input to consider, while the source of electricity used in ethanol production would have less of an impact on the overall carbon intensity of the fuel pathway). It will be important to establish those inputs with the greatest influence for each pathway, or the level of effort required could be well beyond the available budget. The contractor should also identify any inputs that may be missing from a pathway and inputs that are derived from process models rather than data from operating plants (e.g., that may be the case with certain advanced biofuel pathways that are not yet at commercial scale).

Task 3: Assessment of Variability/Uncertainty – For the model inputs identified above, the contractor should assess the variability and uncertainty in those inputs. Alternative data sources for the inputs should be identified where possible, and a reasonable range for the most important input parameters should be established. Overall uncertainty in the model results should be estimated based on the range of uncertainties established above (via Monte Carlo simulation, propagation of errors, or other methodology proposed by the contractor). Again, the focus of this effort should be on those inputs that have the greatest influence on the overall results.

Task 4: Reporting – The results of this evaluation should be documented in a draft report to CRC. Comments received on the draft report would be addressed prior to issuing a final report. Monthly progress reports would also be submitted by the contractor.

EXHIBIT B

REPORTS

MONTHLY TECHNICAL PROGRESS REPORTS

The contractor shall submit a monthly technical progress report covering work accomplished during each calendar month of the contract performance. An electronic Microsoft® Word compatible file (<1 MB) of the monthly technical progress report shall be distributed by the contractor within ten (10) calendar days after the end of each reporting period. The report shall contain a description of overall progress, plus a separate description for each task or other logical segment of work on which effort was expended during the reporting period.

FINAL REPORT

The contractor shall submit to or distribute for CRC an electronic pdf-compatible copy transmittable via email) of a rough draft of a final report within thirty (30) days after completion of the technical effort specified in the contract. The report shall document, in detail, the test program and all of the work performed under the contract. The report shall include tables, graphs, diagrams, curves, sketches, photographs and drawings in sufficient detail to comprehensively explain the test program and results achieved under the contract. The report shall be complete in itself and contain no reference, directly or indirectly, to the monthly report(s).

Within thirty (30) days after receipt of the approved draft copy of the final report, the contractor shall make the requested changes and deliver to CRC thirty (30) hardcopies including a reproducible master copy of the final report. The final report shall also be submitted as an electronic copy in a pdf or pdf-convertible file format. The final report may be prepared using the contractor's standard format, acknowledging author and sponsors. An outside CRC cover page will be provided by CRC. The electronic copy will be made available for posting on the CRC website.

EXHIBIT C

INTELLECTUAL PROPERTY RIGHTS

Title to all inventions, improvements, and data, hereinafter, collectively referred to as (“Inventions”), whether or not patentable, resulting from the performance of work under this Agreement shall be assigned to CRC. Contractor X shall promptly disclose to CRC any Invention which is made or conceived by Contractor X, its employees, agents, or representatives, either alone or jointly with others, during the term of this agreement, which result from the performance of work under this agreement, or are a result of confidential information provided to Contractor X by CRC or its Participants. Contractor X agrees to assign to CRC the entire right, title, and interest in and to any and all such Inventions, and to execute and cause its employees or representatives to execute such documents as may be required to file applications and to obtain patents covering such Inventions in CRC’s name or in the name of CRC’s Participants or nominees. At CRC’s expense, Contractor X shall provide reasonable assistance to CRC or its designee in obtaining patents on such Inventions.

To the extent that a CRC member makes available any of its intellectual property (including but not limited to patents, patent applications, copyrighted material, trade secrets, or trademarks) to Contractor X, Contractor X shall have only a limited license to such intellectual property for the sole purpose of performing work pursuant to this Agreement and shall have no other right or license, express or implied, or by estoppel. To the extent a CRC member contributes materials, tangible items, or information for use in the project, Contractor X acknowledges that it obtains only the right to use the materials, items, or information supplied for the purposes of performing the work provided for in this Agreement, and obtains no rights to copy, distribute, disclose, make, use, sell or offer to sell such materials or items outside of the performance of this Agreement.

EXHIBIT D

LIABILITY

It is agreed and understood that _____ is acting as an independent contractor in the performance of any and all work hereunder and, as such, has control over the performance of such work. _____ agrees to indemnify and defend CRC from and against any and all liabilities, claims, and expenses incident thereto (including, for example, reasonable attorneys' fees) which CRC may hereafter incur, become responsible for or pay out as a result of death or bodily injury to any person or destruction or damage to any property, caused, in whole or in part, by _____'s performance of, or failure to perform, the work hereunder or any other act of omission in connection therewith.

EXHIBIT E

PROPOSAL EVALUATION CRITERIA

- 1) Merits of proposed technical approach.
- 2) Previous performance on related research studies.
- 3) Personnel available for proposed study – related experience.
- 4) Timeliness of study completion.
- 5) Cost.