

## Department of Resources Recycling & Recovery

### SCOPE OF WORK

#### *Used Oil Economic Study Contractor*

## I. INTRODUCTION/OBJECTIVES

As part of Senate Bill (SB) 546 of 2009, CalRecycle was directed to, among other things; submit a report to the Legislature on the results of a comprehensive Lifecycle Analysis (also referred to as Lifecycle Assessment in this document) of the used lubricating and industrial oil management process from generation through collection, transportation and re-use alternatives and “any recommendations for statutory changes that may be necessary to promote increased collection and responsible management of used oil.” Public Resources Code (PRC) §48651.5

As part of the overall project that CalRecycle is conducting pursuant to SB 546, this economic study is necessary in order to fully analyze the impacts of the current fee/incentive system on the used oil market (which includes but is not limited to used oil generation, collection, transportation, infrastructure for various processing mechanisms, technology availability, etc.) in California, to determine the effects of various policy scenarios (to be both provided by CalRecycle, after consulting with stakeholders, as well as to be recommended by the Economic Contractor and/or the LCA Contractor) on the used oil market, and to determine the most efficient ways to realize positive changes in the used oil market. In addition (but not exclusively), this analysis also must “Evaluate the positive and negative impacts of the testing requirements established in Section 25250.29 of the Health and Safety Code, the tiered fee on lubricating oil established in Section 48650, and the tiered incentive payments established in Section 48652, on used oil collection rates.” (PRC § 48651.5(C))

The overall project consists of the following four separate contracts:

- 1) the Economic Study Contract arising from this SOW (hereafter “this Contract” or “this SOW”) (the contractor referred to hereafter as the “Economic Contractor”);
- 2) a Lifecycle Assessment (LCA) Contract, (contractor hereafter referred to as the “LCA Contractor”); the LCA Contract includes an Economic Expert Subcontractor (referred to hereafter as the “LCA Economic Subcontractor”) to help coordinate work between the LCA Contractor and the Economic Contractor.
- 3) an International Organization for Standardization (ISO) Peer Review Contract, (contractor hereafter referred to as the “Review Contractor”), that will ensure adherence of the LCA to appropriate international standards; and
- 4) an Expert Facilitator Contract to assist CalRecycle in coordinating input from industry stakeholders.

All of these contracts will be managed by a single CalRecycle Contract Manager, with assistance from the CalRecycle Project Team, which consists of other CalRecycle staff and management and designated DTSC staff. It is essential that the Economic Contractor work closely with every member of the Project Team and coordinate efforts where appropriate.

Under SB 546, CalRecycle must conduct this project with input from a broad stakeholder group. This group has been involved to date in providing input on a variety of topics including project scope, boundaries, and data needs, among others. Working groups have been created to provide an opportunity for these stakeholders to collaborate and discuss issues in order to present recommendations to CalRecycle. These working groups will continue throughout this project and the Economic Contractor will be expected to respond to suggestions by this stakeholder group, explain process issues, and explain its recommendations.

#### *Overview of the Economic Model*

The following features as set out below are integral to the Economic Model described more fully under Work to be Performed:

The boundaries

The functional unit and systems approach to be adopted

The need to base the analysis on a firm baseline of the current system

The use of scenarios to evaluate environmental and economic effects of changes that may occur over a timescale of approximately 1-20 years (or short and long term effects, for example using existing capital resources or investing in new capacity).

- Boundaries – the geographic scope encompasses all used oil generated or treated in California (i.e., the model must account for all sources and uses of used oil whether currently collected or not and whether treated in California or elsewhere), all processes currently in use to treat used oil from California and over a time frame of approximately the next 20 years to allow for potential changes in policy as well as in technology, volumes, markets and investment in new capacity.
- Systems based approach and baseline – the environmental and economic models will be based on consideration of the whole system (i.e., all the used oil generated in California or treated in California, as well as avoided burdens in virgin petroleum product manufacturing or elsewhere) and based on a detailed assessment of a current baseline condition, both environmental and economic. Taking the systems approach and constructing a model of the whole system will ensure that changes in volumes and composition of used oil over time can be handled and that outputs can be put into a wider context (e.g., the environmental profile and the sum of economic costs/activity in the system as a whole). The system examined must be consistent with the LCA Contract to the extent possible with respect to these issues.

- Scenarios will be developed to assess and evaluate the effects of changes in the used oil system – for example, making deliberate changes to the regulatory regime, modeling changes in technology, and/or optimizing for various environmental impacts or economic parameters. The development of scenarios will be an interactive process involving CalRecycle (with input from stakeholders), the LCA Contractor, and the LCA Economic Contractor.

Primary objectives are:

- To develop, test and calibrate, and then apply, a model of the used oil management system in California<sup>1</sup> that is suitable to model the economics of the current system and, using scenarios (policy options), model impacts of changes that may occur over the next 20 years (or so).
- To coordinate closely with the LCA Contractor, CalRecycle and stakeholders.
- The model must be transparent, consistent and suitably documented so that it can be used by CalRecycle in the future. Assumptions used and data relied upon shall be assessed for quality and completeness, and the model shall be tested for sensitivity and uncertainty.
- The model must be compatible (to the extent possible) with the environmental model of the used oil management system being developed by the LCA Contractor such that the two models can be run in parallel and information and scenarios from one can be used as inputs to the other.
- Consider scenarios (including regulatory and other changes) that would increase collection of and ensure responsible management of all used oil.

## **II. WORK TO BE PERFORMED**

As stated above, it is critical that the Economic Contractor communicate regularly with the other members of the project (contractors listed above, the CalRecycle Contract Manager and the CalRecycle Project Team). Besides communication, a significant amount of coordination will be necessary with the LCA Contractor so that the results of both studies (the LCA environmental study and this economic study) are compatible and the models developed can be used in conjunction with each other. In some instances, outputs from the LCA Contract will be used as inputs for this economic study, and vice versa. In order to ensure that CalRecycle maintains control of the project as well as to ensure transparency, all such coordination and information exchanges between contractors or between contractors and stakeholders will be facilitated by the CalRecycle

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<sup>1</sup> All lubricating and industrial used oil generated or treated in California

Contract Manager, except as prohibited by confidentiality agreements for data collection and approved by the Contract Manager.

The Economic Contractor will model volume/process flows and the economics of the used oil management system in California from generation, through collection, transportation and disposition (including recycling and re-use). The economic model must be sensitive enough to capture the effects of various potential policy changes and possible market changes including but not limited to changes in: technology, raw material prices, fees/incentives, penalties/fines, locations of material processing facilities, etc. Additional detail is found in **Task 2** below.

The economic model developed by the Economic Contractor must reflect the current used oil management system and must be calibrated using a baseline set of volume/process flows and economics developed in conjunction with the CalRecycle Contract Manager and the LCA Contractor to ensure the modeling is realistic, accurate and effective. Where available, initial real world data will be provided by the CalRecycle Contract Manager, using information obtained by the State and from the stakeholder working groups. This is likely to include virgin oil sales data, processing volume data, and used oil hauling data among other things. Additional data will likely be required in order to effectively construct, calibrate and apply the model; such additional data shall be collected by the Economic Contractor if feasible.

The Economic Contractor will then model various potential market and policy changes, as mentioned above, to determine their most likely effects on the market as well as distributional effects on various affected parties. The Economic Contractor will work with the CalRecycle Contract Manager and the LCA Contractor to develop a range of scenarios to evaluate; the CalRecycle Contract Manager shall obtain input from the stakeholder group on what scenarios (policy options) should be evaluated. These policy changes will be provided by the CalRecycle Contract Manager and may include input from industry stakeholders, the Project Team and suggestions from the Economic Contractor. The Economic Contractor will also work with the LCA Contractor and the CalRecycle Contract Manager to determine a set of “optimal scenarios” to balance economic impacts and environmental impacts, and then determine possible policy changes that would be necessary to encourage the market into those configurations while being sure to address the effects on the entire used oil management system (industrial as well as lubricating oils), resilience to future changes (e.g., in performance requirements, volumes, external market influences) and other relevant factors.

The draft final report will be submitted to CalRecycle for review, and the Economic Contractor will present its draft findings and the draft final report to the Stakeholder working group for review and comment. The Economic Contractor shall work with the CalRecycle Contract Manager in determining responses to the stakeholder comments. The Final report will be submitted to CalRecycle and presented during a CalRecycle public meeting or workshop.

### III. TASKS IDENTIFIED

All written deliverables are subject to the CalRecycle Contract Manager's written approval. Economic Contractor's and subcontractor's (if any) attendance at meetings and participation in conference calls will be as determined by CalRecycle Contract Manager.

#### **Task 1. Project Planning and Coordination.**

**Task 1a. Prepare work plan.** The Economic Contractor (with assistance from the Economic Subcontractor) will work with the CalRecycle Contract Manager, the CalRecycle Project Team, the LCA Contractor, the Expert Facilitator, and the Review Contractor (as necessary) to develop a detailed Work Plan, which describes with specificity the project objectives, budget allocation, timelines, tasks, activities, general model/structure, assumptions, and deliverables. This workplan must also specify key milestone dates and opportunities for involvement by the Internal Review Team (see **Task 1e**).

*Deliverables:* Work plan.

*Timeline:* This deliverable is expected to be completed by January 2012

**Task 1b. Convene with Project Team.** The Economic Contractor will participate in discussions among the CalRecycle Contract Manager, CalRecycle Project Team, the Expert Facilitator, the LCA Contractor and the Review Contractor to ensure that the economic study is conducted in the most efficient and effective manner. At a minimum, the Economic Contractor will meet in person or by phone (depending on the nature of the meeting) with the CalRecycle Contract Manager and the CalRecycle Project Team after each stakeholder meeting and economic study milestone.

*Deliverables:* None

*Timeline:* Beginning December 2011 and ending March 2013

**Task 1c. Participate in meetings and calls.** Due to the fact that a stakeholder group will be providing input to CalRecycle on the scope and design of the economic study, the Economic Contractor will attend and participate in stakeholder and/or CalRecycle public meetings in person and conference calls as specified by the CalRecycle Contract Manager. CalRecycle expects that this will entail 8 public meetings/workshops in Sacramento.

*Deliverables:* Participation, in person, at meetings in Sacramento as well as participation in conference calls/webinars.

*Timeline:* Beginning December 2011 and ending March 2013

**Task 1d. Identify data needs and data gaps.** Particular attention will be taken by the Economic Contractor to identify data needs and data gaps as early as possible to minimize the need for primary data-gathering by the Economic Contractor during later stages of the project. Prior to the time the Economic Contractor begins work, the CalRecycle Contract Manager with input from the LCA Contractor and LCA Economic Subcontractor will gather preliminary data in consultation with the stakeholder group. The LCA's Economic Subcontractor will assist in these efforts to ensure (when possible) that data collected in these early stages will conform to data format requirements likely to be necessary for the Economic Contractor. Once the Economic Contractor begins work under this SOW he/she will then identify additional primary and secondary data sources to fill any gaps. The Economic Contractor will present these proposed data sources for consideration to the CalRecycle Contract Manager. Should additional primary or secondary data collection become necessary, the Economic Contractor shall supply the CalRecycle Contract Manager with the required format for such data as well as any additional required parameters for the required data. In the event that proprietary data must be collected, the Economic Contractor must justify the need of the proprietary data to the CalRecycle Contract Manager. It is also the responsibility of the Economic Contractor to verify and document the quality and source of the data.

*Deliverables:* List of missing or inadequate data, recommendations regarding the priority of data collection, recommendations regarding data collection methodology, and expected data collection costs.

*Timeline:* May 2012

**Task 1e. Establish Internal Peer Review Team.** The Economic Contractor shall identify (with approval by the CalRecycle Contract Manager) no fewer than three individuals to participate in an Internal Peer Review Team in order to provide periodic checks and balances relating to model development, model calibration, data gathering, and analysis. This team shall be comprised of individuals with experience and knowledge of economics and the sort of analysis being performed under this Economic Contract. The team shall be comprised of individuals not directly associated with the analysis but may involve individuals familiar with the project, however members of this team must be unbiased and have no personal or professional stake in the outcome of the analysis. At a minimum, the LCA Economic Subcontractor shall participate in this Internal Peer Review Team. This team shall meet no less frequently than once every four months to review key aspects of the project and provide feedback to the CalRecycle Contract Manager. It is possible that the team would need to meet more frequently at times in order to provide expeditious feedback.

*Deliverables:* Retain services of at least 3 individuals to serve as Internal Review Team

*Timeline:* January 2012

**Task 1f. Retain Final External Peer Review Services.** The Economic Contractor shall identify and retain the services of at least three individuals for an external peer review of the draft final report and of the final report. The individuals that perform this review must be independent from all aspects of this project and have no bias regarding the outcome of the analysis. These individuals must be respected in the field of economics and be familiar with performing reviews of complex analyses such as the one described in this Scope of Work. Members of academia should be considered however individuals from outside the academic world are acceptable assuming that they meet the above-referenced qualifications. Qualifications of the individuals proposed to perform this review shall be submitted for approval to the CalRecycle Contract Manager (at least three months prior to allow for review and approval).

*Deliverables:* Retain services for External Peer Review Services

*Timeline:* December 2012

## **Task 2. Economic Model Development**

CalRecycle makes no presumptions regarding the specific model type to be developed and/or used by the Economic Contractor, but requires that the model reflect the entire used oil management system in California and be able to:

- Support complex interactions and reactions across the entire supply chain of used oil in California. This would include but not be limited to virgin oil production, transportation, primary use, subsequent use, collection, processing, re-use, improper disposal, etc.
- Determine likely responses by the used oil market to various potential statutory changes (see **Task 3** below) including but not limited to changes in incentive fees, changes to permitting requirements, addition of processing infrastructure, education campaigns, possible technology changes, increased drain intervals, etc.
- Accurately depict the conditions in California and take into account various factors from outside California to the extent that they are influenced by or influence California used oil markets (due to the national/global nature of the used oil environment).

The Economic Contractor may develop an economic model specific to the Used Oil business sector, or adapt an existing economic model in order to sufficiently analyze this business sector.

All data, assumptions, algorithms, inventory information, simplifications, averages, data conglomeration, etc. will be made available to CalRecycle (and by extension the public) to the extent allowed under the law and according to confidentiality agreements that may affect the dissemination of this information. This is to assure transparency of the process as well as to provide interested parties with the information that they might need should

they wish to perform additional analyses on their own after the work performed under this contract is completed.

Simplifications and assumptions shall be justified. Explicit sensitivity and uncertainty analysis is required of the model, approach and data.

This project will be performed in conjunction with Lifecycle Assessment (LCA) study in a coordinated process. CalRecycle requires the Economic Contractor to coordinate its efforts (with the assistance of the LCA Economic Subcontractor) with the LCA Contractor in order to create compatible models (to the extent possible) and a final report that is meaningful for policy analyses and coordinated with the environmental work.

**Task 2a. Perform data-gathering.** The Economic Contractor has primary responsibility for gathering the necessary data by the most effective means possible. As discussed earlier, though, data gathering has commenced for this project and will continue with input from the stakeholder group, the LCA Contractor, and the LCA Economic Subcontractor. Every effort will be made to ensure that data gathered will meet the needs of both the LCA Contractor and the Economic Contractor.

Any data of a sensitive or confidential nature will be collected under a confidentiality agreement that will be negotiated between the Economic Contractor and the entity providing the data. This confidentiality agreement shall be made to clearly exclude the data from any requests made to CalRecycle, the Department of Toxic Substances Control, or any other State Agency or Department pursuant to the California Public Records Request Act. In the case of data collected by the LCA Contractor prior to the Economic Contractor beginning work, every effort will be made to utilize the same agreement negotiated by the LCA Contractor to ensure expediency.

Regardless of the above, it is likely that the Economic Contractor will need to perform additional data-gathering in order to conduct the economic study. To ensure compatibility with the LCA Contract, the LCA Economic Subcontractor shall assist in coordinating data collection between the Economic Contractor's efforts to collect economic data and the LCA Contractor's efforts to collect LCA-related data. Should it be determined in **Task 1d** that additional primary or secondary data are needed, a detailed list of data needed will be provided to the CalRecycle Contract Manager, along with a proposal for the methodology necessary in order to gather the data. Upon approval of the methodology and data needs by the CalRecycle Contract Manager, the Economic Contractor will collect (to the extent possible) all necessary data to be used in preparation of the economic study. The Economic Contractor shall describe any data needs that it cannot meet, and describe the importance of those data needs, and possible alternative means of collecting those data, to the CalRecycle Contract Manager as well as the reasons why those data cannot be collected. The Internal Review Team will

review data collection procedures and ensure that data to be used are suitable and valid.

*Deliverables:* Full data collection required to complete analysis as well as any required precautions necessary to keep sensitive data secure.

*Timeline:* January 2012 through March 2013

**Task 2b. Create/customize model.** The model will portray the existing (near-term) Used Oil industry sector, and will be able to adequately respond to significant changes that are likely to occur within a longer-term time frame. As part of the model, the Economic Contractor will establish a baseline scenario against which all alternatives will be evaluated. Supply conditions to consider include but are not limited to existing and anticipated future technology; production methods; ability to increase production (including the shift of production facilities used for other products and the use, cost, or availability of major inputs into production); and factors related to the ability to shift supply among different markets, including barriers that may exist to market entry or exit. Demand conditions to consider include end uses and applications; the existence and availability of substitute products; and the responsiveness of consumers to the policy changes considered at a minimum. Overall, the model should effectively analyze the competitive impacts to the used oil market and management system of policy changes, as well as the impacts of changes to the existing oil extraction industry and other up-stream or down-stream impacts as relevant. Specific study boundaries, units, scope, etc. will be determined by the CalRecycle Contract Manager in consultation with the Stakeholder group as well as both the Economic Contractor and LCA Economic Subcontractor.

*Deliverables:* Economic model capable of accurately modeling the used oil management system in California

*Timeline:* June 2012

**Task 2c. Calibrate model.** In order to ensure that the model is effective and appropriate, the Economic Contractor shall calibrate the model to a pre-determined base year/baseline common to the LCA. This will provide basic baseline information regarding the sensitivity of the model to changes in the input assumptions and establish a context so that impacts of policy changes can be discerned from general uncertainties within the model. The Economic Contractor shall present the results of this calibration along with a description of limitations to the CalRecycle Contract Manager for approval prior to proceeding with the analysis.

*Deliverables:* Report explaining the results of the economic model calibration analysis

*Timeline:* August 2012

### **Task 3. Scenario development and analysis**

A series of scenarios to be modeled will be developed by the Economic Contractor, the LCA Contractor, and the CalRecycle Contract Manager. Some scenarios will require inputs that derive from the LCA environmental model and some scenarios modeled will

take outputs from the economic model so that both models are run in parallel to assess and evaluate potential changes.

The Economic Contractor, CalRecycle Contract Manager, and the LCA Contractor shall collaborate to determine which combination or combinations of policy changes are most likely to maximize the collection of used oil, and ensure responsible and safe management of used oil. Any proposed change should be assessed for susceptibility to market changes (e.g., oil price, new entrants or exits from the business), volume and quality changes (e.g., relative amounts and types of used oil, spatial effects (relation of used oil arising to treatment facility), competition effects, displacement of virgin oil, etc. This integrated approach will be done in close consultation with the CalRecycle Contract Manager.

**Task 3a. Develop scenarios.**

**Task 3a.i. Develop scenarios.** The Economic Contractor is expected to provide recommended alternative scenarios based on past experience, expertise, initial model application results, and/or any other means that would suggest a possible scenario that would be appropriate for analysis and contribute to achieving the objectives of the project. The Economic Contractor shall work closely with the LCA Contractor and CalRecycle Contract Manager to develop a series of scenarios to be evaluated. As noted above, the CalRecycle Contract Manager shall also consider input from the stakeholder working group regarding which scenarios should be evaluated.

At a minimum, the Economic Contractor must create scenarios intended to fully address the requirements in PRC §48651.5(C) which states, “Evaluate the positive and negative [economic] impacts of the testing requirements established in Section 25250.29 of the Health and Safety Code, the tiered fee on lubricating oil established in Section 48650, and the tiered incentive payments established in Section 48652, on used oil collection rates”

*Deliverables:* List of scenarios to be evaluated

*Timeline:* June 2012

**Task 3a.ii. Develop “optimal” scenarios.** Working closely with the LCA contractor and the CalRecycle Contract Manager, the Economic Contractor shall determine a series of “optimal” scenarios that consider environmental and economic impacts. These scenarios should attempt to reconcile any possible trade-offs between economic and environmental factors. This should be an effort in compromise and should result in multiple scenarios (on the order of 4 to 8) wherein each scenario, while attempting to balance between economic and environmental impacts, represents a slightly different set of assumptions or values.

*Deliverables:* List of scenarios most likely to balance economic and environmental impacts in order to realize the greatest benefit in both areas.

*Timeline:* August 2012

**Task 3b. Conduct economic analysis of selected scenarios.** Using the model developed in **Task 2b**, the Economic Contractor shall analyze the effects of the various potential scenarios described in **Task 3a**, on the volumes and economics related to the collection and responsible management of used oil. This analysis should include market impacts, both short-term and long-term, with explicit consideration of reasonable technology changes and capital malleability. Impacts should be based upon changes from the current-day baseline information determined during calibration in **Task 2c**. Descriptions of analyses to be completed during the model application phase are provided immediately below, whereas further background in this regard can be found on the CalRecycle Used Oil LCA Web Portal (See section V Resources, below)

**Task 3b.i. Economic, Social, and Environmental Cost Analysis.** The Economic Contractor shall analyze and report on the economic, social, and environmental costs of regulatory actions and/or incentive options, both for affected industries or entities and for the economy as a whole. The Economic Contractor shall achieve the following analytical and procedural objectives in conducting these analyses:

- a. Analyze economic costs associated with varying used oil collection efficiencies and the various used oil disposition scenarios.
- b. Analyze potential changes in market prices and quantities for goods and services directly or indirectly affected by the regulatory program and/or action.
- c. Analyze industry-level impacts that include, but are not limited to, changes in capacity utilization and/or growth projections, process and/or facility closures, process substitution, energy usage, worker dislocation, international trade, and profitability.
- d. Quantify and compare the distributional impact on different entities or populations by economic, financial, or physical characteristics. This includes, but is not limited to, small entities, low-income and/or high-minority populations, and governmental (State, Tribal, county, city) and non-profit entities.
- e. Address the potential for regional and/or community impacts for those regulatory alternatives that may have significant economic impacts as a result of a regional or local concentration of affected entities/populations.
- f. Estimate the social costs of the regulatory program and/or action and their distribution across stakeholders and address the socioeconomic effects of the regulatory actions.

*Deliverables:* No deliverable, however a preliminary description of the results should be made available.

*Timeline:* November 2012

**Task 3b.ii. Economic, Social, and Environmental Benefit Analysis.** The Economic Contractor shall identify, quantify, value, and report on the economic, social, and environmental benefits expected to result from regulatory actions. Where applicable, the Economic Contractor shall compare the benefits of innovative regulatory strategies to traditional regulatory alternatives (where “innovative regulatory strategies” means something outside of traditional or typical governmental incentive options involving

taxes, fees, or refunds). All regulatory alternatives identified in **Task 3a** shall be analyzed. The Economic Contractor shall achieve the following analytical and procedural objectives:

- a. Analyze economic benefits associated with the various used oil collection and disposition scenarios.
- b. Identify the benefits to society that result from the regulatory action, including, but not limited to, human health benefits, ecosystem benefits, use or recreation benefits, aesthetic benefits, materials damage benefits, silvicultural benefits, agricultural benefits, climate benefits, and visibility benefits.
- c. Assign monetary value to the extent possible to the identified benefits using economic valuation techniques that have either been established in the academic or scientific literature, or that have been developed under this contract and approved by the CalRecycle Contract Manager. In order to value the identified benefits, the Economic Contractor may have to quantify the benefits. This may include changes in resource depletion, emissions, mortality and morbidity, the number of lost work days, soil or surface/groundwater contamination, frequency of maintenance and repair activities, etc.
- d. Characterize qualitatively and if possible quantitatively, benefits to affected low-income and/or minority populations, children, the elderly and other sensitive populations identified by the Project Team.

Environmental benefits shall be compatible with those identified in the LCA Contract to the extent possible. The Economic Contractor shall work closely with the LCA Contractor as well as with the LCA Economic Subcontractor in order to ensure this compatibility.

*Deliverables:* No deliverable, however a preliminary description of the results should be made available.

*Timeline:* November 2012

#### **Task 4. Reporting, Recommendations and Presentation.**

The Economic Contractor shall maintain regular contact with the CalRecycle Contract Manager throughout the term of the contract. This will be accomplished through, at a minimum, quarterly progress reports and update calls. The progress of the analysis, interim results, and draft reports will be shared with and discussed with the CalRecycle Contract Manager. The Final report shall adhere to CalRecycle format requirements and the Economic Contractor shall present the findings of the analysis at a public meeting to be held in Sacramento.

**Task 4a. Progress reports.** The Economic Contractor will prepare and submit written quarterly progress reports to the CalRecycle Contract Manager on the progress of each task.

The Economic Contractor shall also provide updates to the CalRecycle Contract Manager, who is responsible for communication with the entire Project Team and stakeholders. These updates shall be in the form of conference calls (conference call coordination to be provided by CalRecycle Contract Manager) and shall be scheduled as needed by the CalRecycle Contract Manager.

The Economic Contractor shall inform the CalRecycle Contract Manager of issues with data, particularly regarding the quality or reliability of data. The CalRecycle Contract Manager shall work with the Project Team and stakeholders to address the data issues as they arise.

*Deliverables:* Quarterly progress reports.

*Timeline:* Beginning December 2011 and ending March 2013

#### **Task 4b. Economic Report**

**Task 4b.i. Policy Analysis and Recommendations.** Prior to completing the draft report, the Economic Contractor will meet with the CalRecycle Project Team to discuss the results of the policy analysis and recommendations based on that analysis.

*Deliverables:* Recommendations based on policy analysis

*Timeline:* November 2012

**Task 4b.ii. Draft Economic Report and Presentation.** The Economic Contractor shall prepare and submit a Draft Final Report.

As part of this report, the Economic Contractor shall identify and/or review the key analysis parameters and assumptions that include, but are not limited to, definition of base year, period of analysis, and affected facilities and/or entities; inputs used to develop current and future year emission inventories and air quality results; inputs to develop current and future year emission control and administrative costs; and inputs to develop benefit, risk, and economic analyses. The Economic Contractor also will discuss in detail the uncertainty and sensitivity analyses to ensure that the impacts on the model and the applicability of the results are clear, understandable, and adequately managed.

In the Draft Report to CalRecycle, the Economic Contractor shall discuss any difficulties in obtaining complete, accurate, and reliable data. The Economic Contractor shall also discuss what steps were taken and make explicit any assumptions made to address any problems with data accuracy, completeness or reliability.

Where appropriate, the Economic Contractor shall develop supporting documentation such as technical reports, user manuals, and procedures and guidelines documents for various aspects of data bases. In the case of models developed with a programming language, the Economic Contractor shall provide source backup with no proprietary coding, a source code manual, a user's manual, and complete programming instructions.

In the case of models developed as companions to common application software, the Economic Contractor shall provide a comprehensive user's manual for the model and a complete model development report.

*Deliverables:* Draft Final Economic Report

*Timeline:* December 2012

**Task 4b.iii. Final Economic Report.** The Economic Contractor shall prepare and submit a Final Report. The Economic Contractor shall update and revise the Draft Report prepared under **Task 4b.ii** incorporating and responding, in consultation with the CalRecycle Contract Manager, to new analysis inputs, the considerations and findings of the Project Team reviews (which will include input from stakeholders), and the external peer review.

*Deliverables:* Final Economic Report

*Timeline:* February 2013

**Task 4b.iv. Final Economic Report Presentation.** The Economic Contractor shall make a presentation at a public meeting in Sacramento. The Contractor shall develop and prepare presentation materials, and make a presentation of the Final Report at a CalRecycle public meeting.

*Deliverables:* Presentation at CalRecycle Public Meeting, and availability for public questions and answers.

*Timeline:* March 2013

#### **IV. CONTRACT/TASK TIME FRAME**

NOTE: Deliverables are briefly listed in the table below. See description of each task for full description of what shall be included in each deliverable.

The term of the contract will be approximately 15 months with all project deliverables completed by March 2013.

<b>Task</b>	<b>Timeframe</b>	
	<b>Begin</b>	<b>End</b>
Workplan Development	December 2011	January 2012
Attend meetings	December 2011	March 2013
Identify Data Gaps	December 2011	May 2012
Data Gathering	January 2012	March 2013
Model Creation	January 2012	June 2012
Model Calibration	May 2012	August 2012
Scenario Development	January 2012	June 2012
Economic cost/benefit Analysis	August 2012	November 2012
Policy Analysis	January 2012	November 2012
Draft Report	June 2012	December 2012
Final Report	December 2012	February 2013
Final Presentation		March 2013

## V. Resources

- CSUS Web Portal
  - <http://www.cce.csus.edu/portal/index.cfm?forumID=369>
  - Site Password: usedoillca