

ATTACHMENT 4


 Check here if additional pages are attached. 48 Pages

AGREEMENT NUMBER:

ARV-12-033

AMENDMENT NUMBER:

2

1. This Agreement is entered into between the State Agency and the Recipient named below:

STATE AGENCY'S NAME

State Energy Resources Conservation and Development Commission

RECIPIENT'S NAME

Mendota Bioenergy, LLC

2. The term of this Agreement: From: 3/25/13 To: 3/31/163. The maximum amount of this Agreement after this amendment is: \$4,998,399.00 [\$0 Amendment Amount]

4. The parties mutually agree to this amendment as follows. All actions noted below are by this reference made a part of the Agreement and incorporated herein:

The purpose of this amendment is to revise Exhibit A Scope of Work, Exhibit A-1 Schedule of Products, Exhibit B Budget, and to extend the term of the agreement by three months. These changes are made to reflect a reduction in the scale of the demonstration project to match the availability of the energy beet feedstock in 2014. Instead of converting 10,000 tons of energy beets into 285,000 gallons of ethanol, Mendota will process 2,400 tons of energy beets into approximately 60,000 gallons of ethanol. Agreement ARV-12-033, approved by the Energy Commission on 3/25/13, and previously amended on 12/18/13 is amended as follows:

- Exhibit A, Scope of Work is attached and replaces the previously approved Exhibit A in its entirety
- Exhibit A, Attachment A-1 is attached and is replaces the previously approved Exhibit A, Attachment A-1 in its entirety
- Exhibit B, Budget is attached and replaces the previously approved Exhibit B in its entirety

RECIPIENT

RECIPIENT'S NAME (If other than an individual, state whether a corporation, partnership, etc)

Mendota Bioenergy, LLC

BY (Authorized Signature)

DATE SIGNED (Do not type)

NAME AND TITLE OF PERSON SIGNING

WILLIAM C. PUCHEU

ADDRESS

2911 E. Barstow Ave. M/S OF 144

Fresno, CA 93740

STATE OF CALIFORNIA

AGENCY NAME

State Energy Resources Conservation and Development Commission

BY (Authorized Signature)

DATE SIGNED (Do not type)

NAME AND TITLE OF PERSON SIGNING

Rachel L. Grant Kiley, Contracts, Grants and Loans Office Manager

ADDRESS

1516 Ninth Street

Sacramento, CA 95814-5512

Exhibit A
Scope of Work
Advanced Biorefinery Center—Mendota Integrated Demonstration Plant

(SOW Revisions 23 July 13 J. Tischer)
SOW Revisions 12 February 2014 J. Tischer, E. Suryadi
SOW Revisions 28 March 2014 J. Tischer

TECHNICAL TASK LIST

Task #	CPR	Task Name
1		Agreement Management
2		Energy Beet Production
3		Design Phase
4		Pre-Construction
4.1		Final Agreements
4.2		Construction and Equipment List
4.3		Approval to Proceed to Construction
5	X	Construction
6		Plant Operations
6.1		Demonstrate Advanced Ethanol Production Plant
6.2		Demonstrate Anaerobic Digestion Plant
6.3		Demonstrate the Pilot Biodiesel Production Plant
6.4		Test Plan Preparation
7		Biofuels Development Analysis
7.1		Perform Lifecycle Analysis
7.2		Quantify Lifecycle Economic and Environmental Benefits
8		Coordination
8.1		Integration of Material and Information Flows
8.2		Optimize and Demonstrate Integrated Biorefinery Model
9		Data Collection and Analysis

KEY NAME LIST

Task #	Key Personnel	Key Subcontractor(s)	Key Partner(s)
1	Ellen Suryadi--MBLLC, Jim Tischer--MBLLC, Bill Pucheu -- MBLLC, Jim Latty PhD, P.E.	MBLLC*, JAL Engineering	
2	John Diener--RRR, Steve Kaffka--UCD, Jim Tischer--MBLLC, Cliff Ohmart--SureHarvest, Steve Libsack--Betaseed/KWS	DelTesta Harvesting; Cartel Transport, LLC; Energy-beet contracted farmers; MAABC; UCD; Fresno State; Betaseed; SureHarvest	
3	Mark Gaalswyck, EZ Energy, Systems Jayden Grupe,	EZ Energy Systems	

	EZES, Jason Greenfield, EZES		
4	Mark Gaalswyck, Jayden Grupe, Jason Greenfield, EZES	Easy Energy Systems <u>JAL Engineering</u>	
4.1	Mark Gaalswyck, Jayden Grupe, Jason Greenfield, EZES	Mark Gaalswyck, Jayden Grupe, Jason Greenfield, EZES	
4.2	Mark Gaalswyck, Jayden Grupe, Jason Greenfield, EZES	Easy Energy Systems	
4.3	Mark Gaalswyck, Jayden Grupe, Jason Greenfield, EZES	Easy Energy Systems	
5	Mark Gaalswyck, Jayden Grupe, Jason Greenfield, EZES	Easy Energy Systems	
6	TBD, Pilot-Plant Manager, Jim Latty JAL,	Easy Energy, MBLLC, JAL Engineering, UCD,	
6.1	TBD, Pilot-Plant Manager, MBLLC, JAL Engineering, Easy Energy Systems	RRR <u>JAL Engineering</u>	
6.2	Ruihong Zhang--UCD	Cartel Transport, LLC, UCD	
6.3	John Diener--RRR, Russ Teall--BIODICO, Gary Bañuelos—USDA-ARS	RRR, BIODICO, USDA-ARS	
6.4	Jim Latty, JAL, Mark Gaalswyck, EZES, John Diener, RRR, Russ Teall, Biodico	JAL, Easy Energy, RRR, Biodico	
7	Jim Tischer--MBLLC, John Diener, RRR, Russ Teall, Biodico		
7.1	Alissa Kendall--UCD, Steve Kaffka--UCD	UCD	
7.2	Dr. Santiago Bucarum --UCD, Mickey Paggi--CSUF	UCD, CSUF	
8	John Diener--RRR, Jim Tischer—MBLLC, , Mark Gaalswyck, EZES, , Ruihong Zhang--UCD, Steve Kaffka-- UCD, Russ Teall—BIODICO, Jim Latty, JAL	<u>JAL Engineering</u>	

8.1	John Diener--RRR, Jim Tischer--CSUF, L Mark Gaalswyck, EZES, Jim Latty, JAL, Ruihong Zhang--UCD, Steve Kaffka--UCD, Russ Teall--BIODICO	MBLLC*, MABBC, IR1, UCD, RRR, BIODICO <u>JAL Engineering</u>	
8.2	Jim Latty, JAL, Jim Tischer, MBLLC	JAL, UCD, MBLLC*	
9	Jim Tischer—MBLLC, Ruihong Zhang—UCD, Mark Gaalswyck, EZES, Jim Latty, JAL, Russ Teall, Biodico, John Diener, RRR	EZES, JAL, MABBC, UCD, Biodico	

* Applicant

GLOSSARY

Specific terms and acronyms used throughout this work scope are defined as follows:

Acronym	Definition
AB-CB	Advanced Biofuel and Cellulosic Biofuel
ABC-M	Advanced Biorefinery Center—Mendota
ARB	Air Resources Board
ARFVT	Alternative and Renewable Fuel and Vehicle Technology
BMP	Best Management Practices
CA-BCAM	California Biomass Crop Adoption Model
CA-GREET	California Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation Model
CARB	California Air Resources Board
CCM	Commission Contract Manager
CGE	Computable General Equilibrium
CI	Carbon Intensity
CNG	Compressed Natural Gas
CPR	Critical Project Review
CSUF	California State University, Fresno
EES	Easy Energy Systems
EMFAC	Emissions Factors
EPC	Engineering, Procurement, and Construction
GHG	Greenhouse Gas
GPM	Gallons per Minute
HP	Horsepower
HDT	Heavy Duty Truck
IDP	Integrated Demonstration Project
ILUC	Indirect Land Use Changes
IMPLAN®	Impact Analysis for Planning. For any given industry, the software model enables quantification of outputs (value of production), labor income,

Acronym	Definition
	direct and indirect jobs and value added, both before and after taking into account the multiplier effects on the entire economy.
IR1	The IR1 Group
JAL	JAL Engineering
LCA	Lifecycle Analysis
LCFS	Low Carbon Fuel Standard
MABBC	Mendota Advanced Bioenergy Beet Cooperative
MBLLC	Mendota Bioenergy LLC
MGD	Million Gallons per Day
MJ	Mega joule
MPU	Modular Production Unit
MW	Megawatt
PE	Partial Equilibrium
RIN	Renewable Identification Number
RRR	Red Rock Ranch
SCF	Standard Cubic Feet
TPY	Tons per year
UCD	University of California, Davis
USDA-ARS	United States Department of Agriculture—Agricultural Research Service
WWT	Waste Water Treatment

Background:

Assembly Bill 118 (Núñez, Chapter 750, Statutes of 2007), created the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVT Program). The statute, subsequently amended by AB 109 (Núñez, Chapter 313, Statutes of 2008), authorizes the Energy Commission to develop and deploy alternative and renewable fuels and advanced transportation technologies to help attain the state’s climate change policies. The Energy Commission has an annual program budget of approximately \$100 million and provides financial support for projects that:

- Develop and improve alternative and renewable low-carbon fuels;
- Optimize alternative and renewable fuels for existing and developing engine technologies;
- Produce alternative and renewable low-carbon fuels in California;
- Decrease, on a full fuel cycle basis, the overall impact and carbon footprint of alternative and renewable fuels and increase sustainability;
- Expand fuel infrastructure, fueling stations, and equipment;
- Improve light-, medium-, and heavy-duty vehicle technologies;
- Retrofit medium- and heavy-duty on-road and non-road vehicle fleets;
- Expand infrastructure connected with existing fleets, public transit, and transportation corridors; and
- Establish workforce training programs, conduct public education and promotion, and create technology centers.

The California Energy Commission issued solicitation PON-11-601 to provide funding opportunities under the ARFVT Program for projects which either create new, low carbon fuel production facilities, or lower the carbon intensity of fuels produced at existing facilities. To be supported, a project must demonstrate both economically competitive yields and lower GHG potential than the Low Carbon Fuel Standard (LCFS) for corn ethanol or soy biodiesel pathways. In response to PON-11-601, Mendota Bioenergy LLC submitted application #38, which was recommended for funding under the round two Notice of Proposed Awards issued on October 5, 2012. Mendota Bioenergy LLC's Application is incorporated by reference to this Agreement in its entirety.

Problem Statement:

The primary problem that the project team is attempting to solve is the lack of a commercial-scale domestic source of cost-competitive, low-carbon-intensity transportation fuels. The principal barriers that hinder the development of such fuels and their widespread deployment in California are:

- **Insufficient Field Demonstrations**

The design and construction of a biorefinery at the scope of the future \$170-million, commercial-scale Advanced Biorefinery Center—Mendota (ABC-M) requires the integration of numerous biofuel production technologies. This project will provide a working pilot-demonstration of a commercial-scale ABC-M biorefinery, allowing design refinements based on field testing, and greatly lowering the investment risks for such a larger plant.

- **Biotechnological Challenges**

The process of cost-effectively releasing sugars and oils from biomass can be quite challenging and costly at the scales required for commercial production. Therefore, this project will allow for the thorough testing and refinement of the final commercial-scale design.

Goals of the Agreement

The goals of the proposed demonstration project are to: 1) demonstrate technologies and processes necessary for commercial-scale California-based production of cost-competitive, low-carbon-intensity transportation fuels; 2) develop high-value biobased products; and 3) demonstrate that the proposed sources of renewable biomass for conversion into biofuels and biobased products are economically, environmentally, and socially sustainable and suitable for commercial scale-up on ABC-M. Mendota Bioenergy LLC ultimately seeks to create a production chain that produces renewable transportation fuels with a carbon intensity lower than any other gasoline substitute biofuels produced in the U.S.

Objectives of the Agreement:

At the end of the project, the project team will gather all data collected and compare all performance metrics targets below to actual results. The objectives of this project are to:

- **Develop Feedstocks**

- Implement an innovative first-in-the-world "All Beets, All the Time" harvest plan, in which ~~40,000~~ **2400** tons of carbon-optimized energy beets are planted, grown, harvested, and transported (~~using a demonstrated paperless tracking system and infrared sampling system~~) from a total of 250 acres divided among nine growers local to the Integrated Demonstration Project (IDP). This Plan will demonstrate that year-round energy beet harvesting can be done cost-effectively.

Performance Metrics:

- Acres of Beets Planted (target = ~~250~~ **61**)
- Tons of Beets Harvested (target = ~~40,000~~ **2400**)
- Energy Beet Crop Yield (target = 40 tons/acre)
- Dry Matter Content (target = 22.5%)
- Convertible Biomass Content (target = 90% dry matter)
- Number of Months in Which Harvesting Occurred (target = 12)

- **Develop Biofuels and Biobased Products**

- Design, construct, and operate a pilot-scale plant that converts approximately ~~40,000~~ **2400** tons per year of carbon-optimized energy beets into ~~285,000~~ **60,000** gallons of 200-proof ethanol. Includes integration of advanced enzyme process and microbial conversion technologies, never before used in the US, that will significantly increase ethanol yield per ton, and reduce capital costs and energy use on the commercial ABC-M.

Performance Metrics:

- Completion of Design Documents
- Construction of Facility on Time & Budget
- Tons of Beets Processed (target = ~~40,000~~ **2400**)
- Gallons of 200-proof AB-CB Ethanol Produced (target = ~~285,000~~ **60,000**)
- AB-CB Ethanol Yield (target = 28 gal/ton)
- Produce fertilizer through the anaerobic digestion of energy beet stillage and glycerin at the University of California, Davis (UCD) Biogas Pilot Plant.

Performance Metrics:

- Tons of Energy Beet Stillage and gallons of glycerin delivered to UCD Digester
- Demonstrate use of locally sourced, low carbon, high-yield, salinity-tolerant varieties of canola and/or safflower used as feedstock in an

existing, small-scale oil seed crushing and biodiesel production unit (BIODICO) at Red Rock Ranch to produce biodiesel (B20 blend) for project's energy beet cultivation, harvest, and transport equipment. Glycerin produced as a by-product will be tested as an accelerant for the co-digestion of multiple substrates at the UCD pilot digester.

Performance Metrics:

- Acres of Canola Planted (target = 40)
- Canola Crop Yield (target = 0.89 tons/acre)
- Canola Oil Content (target = 35%)
- Biodiesel Yield (target = 0.9 gal/gal canola oil)
- Gallons of Biodiesel Produced (target = 3,038)
- Percentage of project equipment using project-produced biodiesel
- Gallons of glycerin produced and delivered to UCD Digester

• **Analyze Biofuels Development**

The following objectives are not easily measured quantitatively. Thus, the success of these objectives will be judged on a qualitative basis. Progress on and completion of the task activities—regardless of their results and implications for commercial-scale ABC-M—will be evaluated by the Commission Agreement Manager on a regular basis, with timely feedback to the Recipient to ensure satisfactory completion.

- Calibrate California Biomass Crop Adoption Model (CA-BCAM) model for farms and production conditions and develop computer-based life cycle assessment (LCA) model tailored to the proposed biofuel production pathway.
- Measure and analyze the lifecycle environmental flows for beet production and calculate fuel carbon intensity from crop production data.
- Estimate the full supply chain burdens of chemical, water, and energy inputs; and waste, pollution, and product and co-product outputs.
- Use data from farmer interviews, CA-BCAM simulation, and the LCA model to calibrate Best Management Practice (BMP) assessment tools.

TASK 1 ADMINISTRATION

Task 1.1 Attend Kick-off Meeting

The goal of this task is to establish the lines of communication and procedures for implementing this Agreement.

The Recipient shall:

- Attend a "Kick-Off" meeting with the Commission Project Manager, the Grants Officer, and a representative of the Accounting Office. The Recipient shall bring its Project Manager, Agreement Administrator, Accounting Officer, and others designated by the Commission Project Manager to this meeting. The

administrative and technical aspects of this Agreement will be discussed at the meeting. Prior to the kick-off meeting, the Commission Project Manager will provide an agenda to all potential meeting participants.

The administrative portion of the meeting shall include, but not be limited to, the following:

- Discussion of the terms and conditions of the Agreement
- Discussion of Critical Project Review (Task 1.2)
- Match fund documentation (Task 1.6). No work may be done until this documentation is in place.
- Permit documentation required (Task 1.7)
- Discussion of subcontracts needed to carry out project (Task 1.8)

The technical portion of the meeting shall include, but not be limited to, the following:

- The Commission Project Manager's expectations for accomplishing tasks described in the Scope of Work
- An updated Schedule of Products
- Discussion of Progress Reports (Task 1.4)
- Discussion of Technical Products (Product Guidelines located in Section 5 of the Terms and Conditions)
- Discussion of the Final Report (Task 1.5)

The Commission Project Manager shall designate the date and location of this meeting.

Recipient Products:

- Updated Schedule of Products
- Updated List of Match Funds
- Updated List of Permits

Commission Project Manager Product:

- Kick-Off Meeting Agenda

Task 1.2 Critical Project Review (CPR) Meetings

The goal of this task is to determine if the project should continue to receive Energy Commission funding to complete this Agreement and to identify any needed modifications to the tasks, products, schedule or budget.

CPRs provide the opportunity for frank discussions between the Energy Commission and the Recipient. CPRs generally take place at key, predetermined points in the Agreement, as determined by the Commission Project Manager and as shown in the Technical Task List above. However, the Commission Project Manager may schedule additional CPRs as necessary, and any additional costs will be borne by the Recipient.

Participants include the Commission Project Manager and the Recipient and may include the Commission Grants Officer, the Fuels and Transportation Division (FTD) team lead, other Energy Commission staff and Management as well as other individuals

selected by the Commission Project Manager to provide support to the Energy Commission.

The Commission Project Manager shall:

- Determine the location, date, and time of each CPR meeting with the Recipient. These meetings generally take place at the Energy Commission, but they may take place at another location.
- Send the Recipient the agenda and a list of expected participants in advance of each CPR. If applicable, the agenda shall include a discussion on both match funding and permits.
- Conduct and make a record of each CPR meeting. One of the outcomes of this meeting will be a schedule for providing the written determination described below.
- Determine whether to continue the project, and if continuing, whether or not modifications are needed to the tasks, schedule, products, and/or budget for the remainder of the Agreement. Modifications to the Agreement may require a formal amendment (please see the Terms and Conditions, Section 8). If the Commission Project Manager concludes that satisfactory progress is not being made, this conclusion will be referred to the Transportation Committee for its concurrence.
- Provide the Recipient with a written determination in accordance with the schedule. The written response may include a requirement for the Recipient to revise one or more product(s) that were included in the CPR.

The Recipient shall:

- Prepare a CPR Report for each CPR that discusses the progress of the Agreement toward achieving its goals and objectives. This report shall include recommendations and conclusions regarding continued work on the projects. This report shall be submitted along with any other products identified in this scope of work. The Recipient shall submit these documents to the Commission Project Manager and any other designated reviewers at least 15 working days in advance of each CPR meeting.
- Present the required information at each CPR meeting and participate in a discussion about the Agreement.

Commission Project Manager Products:

- Agenda and a list of expected participants
- Schedule for written determination
- Written determination

Recipient Product:

- CPR Report(s)

Task 1.3 Final Meeting

The goal of this task is to closeout this Agreement.

The Recipient shall:

- Meet with Energy Commission staff to present the findings, conclusions, and recommendations. The final meeting must be completed during the closeout of this Agreement.

This meeting will be attended by, at a minimum, the Recipient, the Commission Grants Office Officer, and the Commission Project Manager. The technical and administrative aspects of Agreement closeout will be discussed at the meeting, which may be two separate meetings at the discretion of the Commission Project Manager.

The technical portion of the meeting shall present an assessment of the degree to which project and task goals and objectives were achieved, findings, conclusions, recommended next steps (if any) for the Agreement, and recommendations for improvements. The Commission Project Manager will determine the appropriate meeting participants.

The administrative portion of the meeting shall be a discussion with the Commission Project Manager and the Grants Officer about the following Agreement closeout items:

- What to do with any equipment purchased with Energy Commission funds (Options)
 - Energy Commission's request for specific "generated" data (not already provided in Agreement products)
 - "Surviving" Agreement provisions
 - Final invoicing and release of retention
- Prepare a schedule for completing the closeout activities for this Agreement.

Products:

- Written documentation of meeting agreements
- Schedule for completing closeout activities

Task 1.4 Monthly Progress Reports

The goal of this task is to periodically verify that satisfactory and continued progress is made towards achieving the research objectives of this Agreement on time and within budget.

The objectives of this task are to summarize activities performed during the reporting period, to identify activities planned for the next reporting period, to identify issues that may affect performance and expenditures, and to form the basis for determining whether invoices are consistent with work performed.

The Recipient shall:

- Prepare a Monthly Progress Report which summarizes all Agreement activities conducted by the Recipient for the reporting period, including an assessment of the ability to complete the Agreement within the current budget and any anticipated cost overruns. Each progress report is due to the Commission Project Manager within 10 days of the end of the reporting period. The recommended specifications for each progress report are contained in Section 6 of the Terms and Conditions of this Agreement.

Product:

- Monthly Progress Reports

Task 1.5 Final Report

The goal of the Final Report is to assess the project's success in achieving its goals and objectives, advancing science and technology, and providing energy-related and other benefits to California.

The objectives of the Final Report are to clearly and completely describe the project's purpose, approach, activities performed, results, and advancements in science and technology; to present a public assessment of the success of the project as measured by the degree to which goals and objectives were achieved; to make insightful observations based on results obtained; to draw conclusions; and to make recommendations for further projects and improvements to the FTD project management processes.

The Final Report shall be a public document. If the Recipient has obtained confidential status from the Energy Commission and will be preparing a confidential version of the Final Report as well, the Recipient shall perform the following activities for both the public and confidential versions of the Final Report.

The Recipient shall:

- Prepare an Outline of the Final Report.
- Prepare a Final Report following the approved outline and the latest version of the Final Report guidelines which will be provided by the Commission Project Manager. The Commission Project Manager shall provide written comments on the Draft Final Report within fifteen (15) working days of receipt. The Final Report must be completed at least 60 days before the end of the Agreement Term.
- Submit one bound copy of the Final Report with the final invoice.

Products:

- Draft Outline of the Final Report
- Final Outline of the Final Report
- Draft Final Report
- Final Report

Task 1.6 Identify and Obtain Matching Funds

The goal of this task is to ensure that the match funds planned for this Agreement are obtained for and applied to this Agreement during the term of this Agreement.

The costs to obtain and document match fund commitments are not reimbursable through this Agreement. Although the Energy Commission budget for this task will be zero dollars, the Recipient may utilize match funds for this task. Match funds shall be spent concurrently or in advance of Energy Commission funds for each task during the term of this Agreement. Match funds must be identified in writing and the associated commitments obtained before the Recipient can incur any costs for which the Recipient will request reimbursement.

The Recipient shall:

- Prepare a letter documenting the match funding committed to this Agreement and submit it to the Commission Project Manager at least 2 working days prior to the kick-off meeting. If no match funds were part of the proposal that led to the Energy Commission awarding this Agreement and none have been identified at the time this Agreement starts, then, state such in the letter. If match funds were a part of the proposal that led to the Energy Commission awarding this Agreement, then provide in the letter a list of the match funds that identifies the:
 - Amount of each cash match fund, its source, including a contact name, address and telephone number and the task(s) to which the match funds will be applied.
 - Amount of each in-kind contribution, a description, documented market or book value, and its source, including a contact name, address and telephone number and the task(s) to which the match funds will be applied. If the in-kind contribution is equipment or other tangible or real property, the Recipient shall identify its owner and provide a contact name, address and telephone number, and the address where the property is located.
- Provide a copy of the letter of commitment from an authorized representative of each source of cash match funding or in-kind contributions that these funds or contributions have been secured. For match funds provided by a grant, a copy of the executed grant shall be submitted in place of a letter of commitment.
- Discuss match funds and the implications to the Agreement if they are reduced or not obtained as committed, at the kick-off meeting. If applicable, match funds will be included as a line item in the progress reports and will be a topic at CPR meetings.
- Provide the appropriate information to the Commission Project Manager if during the course of the Agreement additional match funds are received.
- Notify the Commission Project Manager within 10 days if during the course of the Agreement existing match funds are reduced. Reduction in match funds must be approved through a formal amendment to the Agreement and may trigger an additional CPR.

Products:

- A letter regarding match funds or stating that no match funds are provided

- Copy(ies) of each match fund commitment letter(s) (if applicable)
- Letter(s) for new match funds (if applicable)
- Letter that match funds were reduced (if applicable)

Task 1.7 Identify and Obtain Required Permits

The goal of this task is to obtain all permits required for work completed under this Agreement in advance of the date they are needed to keep the Agreement schedule on track.

Permit costs and the expenses associated with obtaining permits are not reimbursable under this Agreement. Although the Energy Commission budget for this task will be zero dollars, the Recipient shall budget match funds for any expected expenditures associated with obtaining permits. Permits must be identified in writing and obtained before the Recipient can make any expenditure for which a permit is required.

The Recipient shall:

- Prepare a letter documenting the permits required to conduct this Agreement and submit it to the Commission Project Manager at least 2 working days prior to the kick-off meeting. If there are no permits required at the start of this Agreement, then state such in the letter. If it is known at the beginning of the Agreement that permits will be required during the course of the Agreement, provide in the letter:
- A list of the permits that identifies the:
 - Type of permit
 - Name, address and telephone number of the permitting jurisdictions or lead agencies
- The schedule the Recipient will follow in applying for and obtaining these permits.
- Discuss the list of permits and the schedule for obtaining them at the kick-off meeting and develop a timetable for submitting the updated list, schedule and the copies of the permits. The implications to the Agreement if the permits are not obtained in a timely fashion or are denied will also be discussed. If applicable, permits will be included as a line item in the Progress Reports and will be a topic at CPR meetings.
- If during the course of the Agreement additional permits become necessary, provide the appropriate information on each permit and an updated schedule to the Commission Project Manager.
- As permits are obtained, send a copy of each approved permit to the Commission Project Manager.
- If during the course of the Agreement permits are not obtained on time or are denied, notify the Commission Project Manager within 5 working days. Either of these events may trigger an additional CPR.

Products:

- Letter documenting the permits or stating that no permits are required
- A copy of each approved permit (if applicable)
- Updated list of permits as they change during the term of the Agreement (if applicable)
- Updated schedule for acquiring permits as changes occur during the term of the Agreement (if applicable)

Task 1.8 Obtain and Execute Subcontracts

The goal of this task is for Recipients to identify any subcontracts required to carry out the tasks under this Agreement and to procure them consistent with the terms and conditions of this Agreement and the Recipient's own procurement policies and procedures. It will also provide the Energy Commission an opportunity to review the subcontracts to ensure that the tasks are consistent with this Agreement, that the budgeted expenditures are reasonable and consistent with applicable cost principles.

The Recipient shall:

- Prepare a letter documenting the subcontracts required to conduct this Agreement, and submit it to the Commission Project Manager at least 2 working days prior to the kick-off meeting. If there are no subcontracts required at the start of this Agreement, then state such in the letter. If it is known at the beginning of the Agreement that subcontracts will be required during the course of the Agreement, provide in the letter:
 - A list of the subcontracts that describes the anticipated maximum budget and general scope of work for each,
 - A description of the procurement process to be used, and
 - The schedule the Recipient will follow in applying for and obtaining these subcontracts
- Submit a draft of the subcontract that will include a budget with the information required in the budget details to the Commission Project Manager for review.
- Submit a final copy of the executed subcontract.
- **Per Recipient's request, add JAL Engineering as a major subcontractor to perform the work of the former subcontractor IR-1 which has withdrawn from this project.**

Products:

- Letter describing the subcontracts needed, or stating that no subcontracts are required
- Draft subcontracts
- Final subcontracts

TECHNICAL TASKS

TASK 2 ENERGY BEET PRODUCTION

The goals of this task are to plant, grow, harvest, and transport ~~40,000~~ **2400** tons of carbon optimized energy beets for the ABC-M IDP and demonstrate the viability of year-round energy beet harvesting.

The Recipient shall:

- Perform energy beet agronomic work for energy beets in the western San Joaquin Valley.
 - Monitor test plantings of beets and evaluate a range of fertilizer application rates for yield and quality.
 - Quantify optimum nitrogen use for winter-harvested energy beets.
 - Produce best management practice guidelines for pilot-plant contracted energy beet growers.
- Develop and implement a Best Management Practices (BMP) Self-Assessment Workbook Framework for energy beet growers. Use this framework as the basis for implementing a low-carbon pricing system in the future.
- Create an energy beet grower payment system based in part on the carbon intensity of the harvested beets.
- Employ a new ticketless tracking system and an on-board infrared sugar-content testing system to better manage energy beet harvest operations to reduce carbon and resource inputs.
- Secure contracts with local energy beet farmers who will use the BMPs to plant, grow, cultivate, and irrigate designated energy beet parcels, and supply approximately ~~40,000~~ **2400** tons of energy beets to ABC-M IDP during the period November 2013 to October ~~2014~~ **2015**. Contracted farmers will measure cultural/harvest operation carbon inputs for their respective parcels and report same to Mendota Advanced Bioenergy Beet Cooperative monthly.
- Harvest and deliver energy beets to ABC-M IDP as directed.

Products:

- Best Management Practices Self-Assessment Workbook Framework
- Contracts with local energy beet farmers

TASK 3 DESIGN PHASE – Integrated Demonstration Plant (IDP)

The goal of this task is to design and engineer all components of the proposed Integrated Demonstration Plant.

The Recipient shall:

- Design and engineer a 1 Million gallon per year (“1 MGPY”) pilot scale Advanced Ethanol plant. This plant will be operated to produce approximately ~~285,000~~ **60,000** gallons of 200-proof ethanol over the project period. Produce Design Package for Advanced Ethanol Plant that includes:

- Piping & Instrumentation Diagrams (P&IDs)
 - General Arrangement Drawings
 - Equipment List
 - Electrical One Line Drawings
- Design and engineer modifications to the existing anaerobic digester located at the University of California, Davis Wastewater Treatment Plant. Produce modified Design Package for UCD Anaerobic Digester that includes:
 - Piping & Instrumentation Diagrams (P&ID) revisions
 - Equipment List
 - Installation details as necessary

Products:

- Design Package for Advanced Ethanol plant
- Modified Design Package for UCD anaerobic digester

TASK 4 PRE-CONSTRUCTION

Key Subcontractor Easy Energy Systems (EES) is a manufacturer of modular ethanol production systems (“MEPS”), a deliverable under this contract. Before delivering the MEPS unit to California, EES shall test the MEPS unit currently located in Emmetsburg, Iowa, using a small amount of California beets. Upon successful testing, EES shall demobilize the MEPS unit, truck it to Red Rock Ranch in Five Points, California, and re-assemble it for start-up and operation in California, to produce advanced and cellulosic ethanol from energy beets. At RRR, EES shall integrate the MEPS with a Cross beet washer/pre-processor to prepare the beets for enzyme liquefaction and subsequent conversion to ethanol.

Recipient has hired Dr. Jim Latty PhD, P.E. a seasoned process engineer in the petroleum, chemical, drug and renewable fuels industries to advise and work with EES in order to (1) demonstrate plant start up, and (2) generate key plant operational data sufficient to attract a commercial Engineering, Procurement, Construction (EPC) contractor for providing services needed for Recipient’s planned commercial 15 MGY biorefinery.

Task 4.1 Final Agreements

The goal of this task is to obtain all final agreements necessary to begin construction.

The Recipient shall:

- Prepare an Agreements Letter documenting the agreements necessary to construct the project. At a minimum, this letter will include:

- Land agreement for control of project site
- Supply agreement with feedstock providers
- Purchase Order with fuel purchasers
- Secure the agreements as detailed in Agreements Letter

Products:

- Agreements Letter
- Records of necessary agreements

Task 4.2 Construction and Equipment List, Procurement Schedule, & Construction Estimate

The goal of this task is to finalize the project design and construction costs prior to incurring major construction expenses.

The Recipient shall:

- ~~Prepare an Equipment List documenting the necessary equipment for the completion of the project. The Equipment List will include all items to be purchased, constructed, or installed on the project. For each item, the list shall provide:~~
 - ~~The name of the item~~
 - ~~The make, model, size, capacity or other information as appropriate to the item~~
 - ~~The estimated cost to purchase each item~~
- ~~Prepare a Procurement Schedule for the equipment identified on the Equipment List. The Procurement Schedule will identify the purchase orders needed to acquire the items on the equipment list and shall provide:~~
 - ~~The name of the entity that will be carrying out the purchase and/or installation of the item~~
 - ~~A description of the equipment, by item number, contained in each purchase order~~
 - ~~The schedule for obtaining a binding bid from the supplying or installing entity~~
 - ~~The schedule for placing each purchase order~~
 - ~~The delivery schedule for each equipment item, by purchase order~~
- **Coordinate engineering integration and modular construction of first energy beet to advanced / cellulosic ethanol demonstration plant in the United States.**
 - **Working with key subcontractors prepare accurate production flow diagrams, mass/energy balance and necessary modular equipment modifications to accommodate characteristics of liquefied energy beets.**
 - **Assist equipment vendor to conduct a pre-delivery test run of California energy beets prior to delivery of MEPS to RRR in California.**

- Prepare RRR demonstration facility site to successfully receive 10 low-bed truck loads of energy beets per day.
 - Assemble the MEPS and perform a successful start up of the MEPS upon its arrival at RRR.
- Prepare a Construction Estimate for the completion of the Integrated Demonstration Plant including the estimated costs for the:
 - Site work
 - Foundations & structures
 - Equipment
 - Equipment installation
 - Piping and electrical materials installation

Products:

- Equipment List
- Procurement Schedule
- Construction Estimate

TASK 4.3 Approval to Proceed with Construction

The goal of this task is to document preparedness to build the project and to secure Commission Agreement Manager written approval to begin incurring major construction costs.

The Recipient shall:

- Prepare a Written Notification of Readiness to Construct stating the project has obtained all permits, third party agreements, binding construction and equipment bids, and all other items necessary to begin construction.
- Develop proposed Construction Schedule identifying the necessary tasks and their durations from the projected start of construction until the commercial operations date of the project.

Products:

- Written Notification of Readiness to Construct
- Construction Schedule

TASK 5 CONSTRUCTION

The goal of this task is to construct the IDP and prepare it for operation.

The Recipient shall:

- Execute construction of the project as outlined in the Construction Schedule, Construction Estimate, Procurement Schedule, and Equipment List. The construction of the Integrated Demonstration Plant shall include the following major components:

- Feedstock receiving and transfer system
- Feedstock pre-processing system
- Advanced Ethanol plant
- Modifications to UCD anaerobic digester
- Fuel distribution system
- Commissioning and start-up of the facility
- Prepare a Written Notification of Demonstration Operation and submit it to the Commission Agreement Manager within ten working days of commencement of operations of the project for the intended demonstration usage. The Written Notification shall contain the following elements:
 - The date the project achieved commercial operation(s)
 - A narrative on the current status of the project and initial operations
 - Any changes made from the project schedule as originally proposed and reasons for those changes.
- Conduct Critical Project Review process as per Task 1.2. Prepare Critical Project Review Report.

Products:

- Written Notification of Demonstration Operation
- Critical Project Review
- Critical Project Review Report

TASK 6 PLANT OPERATIONS

The goal of this task is to operate the Advanced Ethanol Production Plant and Pilot Biodiesel Plant as planned and to begin to collect data to document the project's fulfillment of its objectives.

TASK 6.1 Demonstrate Advanced Ethanol Production Plant

The goal of this task is to demonstrate the Advanced Ethanol Production Plant that will produce approximately ~~285,000~~ **60,000** gallons of 200-proof AB-CB Ethanol over the project period.

The Recipient shall:

- ~~Demonstrate two innovative technologies: whole beet inventory storage and liquefied beet inventory storage.~~
- Operate the Advanced Ethanol plant for approximately ~~400~~ **36-60** days over a 12-month period, complying with all applicable regulatory standards and producing approximately ~~285,000~~ **60,000** gallons of 200-proof AB-CB Ethanol. As part of this process, consortium will integrate whole beet and liquefied inventory storage technologies described above.
- Distribute the 200-proof ethanol to local ethanol plant(s) and the spent stillage to the UCD Biogas Energy Pilot Plant and growers.
- Prepare Report on Operations in the Monthly Progress Reports. This reporting shall include, but is not limited to, the following information:

- A narrative on operational highlights from the previous month, including any stoppages in production and a statement as to the project's compliance with regulatory requirements. (Note: Advanced Ethanol plant is designed for approximately ~~100~~ **36-60**-days of operations in a twelve-month period. Project proponents plan on operating it on a campaign basis for approximately ~~4-2~~ **1** week per month.)
- The total amount of feedstock received and processed on a monthly basis
- The total amount of fuel produced on a monthly basis
- Conversion ratio for feedstock to fuel production
- The direct operational costs of the project, total and per volume of fuel.

Products:

- Report on Operations in the Monthly Progress Reports

TASK 6.2 Demonstrate UCD Biogas Energy Pilot Plant

The goal of this task is to demonstrate the project's UCD Biogas Energy Pilot Plant located at the UC Davis Wastewater Treatment Plant.

The Recipient Shall:

- Accept delivery of all feedstock, including stillage from beets and glycerin from the biodiesel facility.
- Conduct a 3-wet-ton-per-day, 4-month anaerobic digestion plant demonstration and collect data to support subsequent technical and economic scale-up efforts.
- Produce liquid organic fertilizer
- Prepare Monthly Operations Reports. The Operations Reports shall include, but are not be limited to, the following information:
- A narrative on operational highlights from the previous month, including any stoppages in production and a statement as to the project's compliance with regulatory requirements.
- The total amount of feedstock received and processed on a monthly basis
- The total amount of finished products produced on a monthly basis
- Conversion ratio for feedstock to fuel/finished products production
- The direct operational costs of the project
- Prepare Feedstock Procurement Plan and Feedstock Characterization Report.
- Modify and/or upgrade pilot digester plan and test plan.
- Create final report describing demonstration test results and recommendation for anaerobic digester system design and technical operations parameters for scale-up operations.

Products:

- Report on Operations in the Monthly Progress Reports
- Feedstock Procurement Plan
- Feedstock Characterization Report

- Final Report

TASK 6.3 Demonstrate the Pilot Biodiesel Production Plant

The goal of this task is to demonstrate and analyze the integration of Project-produced biodiesel into the feedstock production chain of AB-CB Ethanol.

The Recipient shall:

- Select varieties of high-yield, salinity-tolerant canola and safflower for use as feedstock for the biodiesel production unit.
- Use an estimated 36 tons of seed harvested from 40 acres of planted high-yield, salinity-tolerant varieties of canola to produce ~3,038 gallons of specification-grade B-100 biodiesel and then splash-blend it into B-20 biodiesel.
- Verify biodiesel quality at the Naval Base Ventura County, where BIODICO operates a facility.
- Arrange for delivery of the biodiesel for use in the energy beet tractors, cultivators, harvesters, beet delivery trucks, and IDP loaders, and of the glycerin for use as an accelerant at the UC Davis Biogas Pilot Plant.
- Determine the:
 - Benefits of using biodiesel over petroleum diesel and other fossil energy sources, and update data and assumptions currently used in economic and environmental models.
 - Cost of replacing petroleum diesel with biodiesel, including changes in equipment performance, maintenance, and storage.
 - Analyze the results with GREET 1.8b analysis tool.
- Include data from this task in Report on Operations in the Monthly Progress Reports described above in Tasks 6.1, 6.2 and submit as specified there.

Products:

- Report on Operations in the Monthly Progress Reports

TASK 6.4 Test Plan Preparation

The goal of this task is to prepare the test plan to be used during data collection and analysis.

The Recipient shall:

- Finalize the type of monitoring to be conducted.
- Determine the manner in which the team will validate, analyze, and report data. Such determination will be made at one or several of the Project's Quarterly Project Meetings. The data collected in Tasks 2, 6 & 7 will be shared among Project participants for use in accomplishing the analysis & reporting activities in Tasks 1, 7, 8 & 9.

Products:

- Test Plan

TASK 7 BIOFUELS DEVELOPMENT ANALYSIS

The goal of this task is to evaluate the potential of this project to develop an environmentally sustainable domestic source of renewable biomass for conversion to biofuels, bioenergy, and biobased products. To achieve this goal, several models and assessment tools will be integrated in an innovative manner to create accurate estimates of lifecycle effects of energy beet production and transformation to advanced fuels.

TASK 7.1 Perform Lifecycle Analysis (LCA)

The goal of this task is to perform a lifecycle analysis.

The Recipient shall:

- Calibrate the California Biomass Crop Adoption Model (CA-BCAM) model for farms and production conditions within the project's nine major farming regions.
- Develop data for direct integration into LCA model.
- Develop a computer-based LCA model tailored to the proposed biofuel production pathway. This LCA model will be made available to research partners to assist in decision-making over the entire supply chain. The model will calculate net environmental flows (inputs and emissions) over the entire life cycle (beet production, transport, and conversion facility), considering agronomic practices, soil quality, water quality and water use, the generation or reduction of hazardous or toxic substances, greenhouse gas and criteria air emissions. The model will use outputs from economic modeling, biogeochemical models, and life cycle databases available at UC Davis.
- Document the LCA modeling and results in an LCA Report.
- Measure and analyze the lifecycle environmental flows for beet production.
- Consider the allocation of emissions from crop rotation and the multiple co-products produced from the IDP and, ultimately, from ABC-M.
- Calculate fuel carbon intensity from crop production data.

Products:

- Lifecycle Analysis Report

TASK 7.2 Quantify Lifecycle Economic, Social and Environmental Benefits

The goal of this task is to quantify the project's lifecycle economic and environmental benefits.

The Recipient Shall:

- Quantify whole farm management effects resulting from energy beet crop adoption on farms throughout feedstock production region.
- Link field-level record keeping data to CA-BCAM and LCA models.

- Develop an LCA model that includes beet production, transport, and ABC-M facility construction and operation.
- Quantify the net environmental flows attributable to beet production, including direct estimates of changes to water use, fertilizer, and the generation of air emissions and related toxics from the operation of equipment, transport of product, and production of fertilizers and pesticides.
- Estimate the full supply chain burdens of chemical, water, and energy inputs; and waste, pollution, and product and co-product outputs.
- Quantify the economic, social and environmental benefits of using IDP-produced biodiesel in the energy beet production supply chain.
- Use data from farmer interviews, CA-BCAM simulation, and the LCA model to calibrate Best Management Practice (BMP) assessment tools and help monitor subsequent improvements in cropping system resource use efficiency.
- Utilize IMPLAN (Impact Analysis for Planning) software and accompanying 2009 dataset to determine multiplier effects created by the operation of ABC-M.
- Develop Lifecycle Benefits Report that documents the benefits of integrating environmental, economic, and social modeling efforts, and will provide producers with BMP for decision-making that integrates across environmental, economic, and social impacts.

Products:

- Lifecycle Benefits Report

TASK 8 COORDINATION

TASK 8.1 Integration of Material and Information Flows

The goal of this task is to integrate the material and information flows among Tasks 2, 6, and 7.

The Recipient shall:

- Manage the material and information flows among project participants and technical areas
- **Manage the integration of key demonstration plant operational data, based on one week-per-month production runs optimized each month from the previous month's run.**
- **Integrate monthly mass/energy balance operational data from all runs to reduce energy consumption and calculate system carbon inputs.**
- **Evaluate the viability of using Distillers' Dried Beets, Greens & Solids (DDBGS) as a new animal feed product similar to Distillers' Dried Grains & Solids from a corn-ethanol plant.**
- **Use data from the customized data reporting system to accurately forecast scaled-up energy/water/utility requirements for a 15 MGY advanced / cellulosic ethanol commercial facility.**

- **Invite established commercial-scale EPC contractors to advise Mendota on collection of processing data sufficient to insure comprehensive EPC contracts adequate to meet financing community requirements.**
- Manage **reporting of data from** the delivery of:
 - IDP-produced biodiesel to energy beet growers and truckers for use in their diesel engines.
 - Canola to Oilseed Crusher and BIODICO unit.
 - Biodiesel to Energy Beet growers
 - Energy beets to Ethanol Plant
 - 200-proof AB-CB Ethanol to local customers
 - Spent stillage from ethanol plant to UCD AD facility
 - Spent stillage from ethanol plant to energy beet growers for fertilizer
 - Fertilizer from UCD AD facility to energy beet growers for fertilizer
 - Glycerin from biodiesel plant to UCD AD facility

Products:

- None. Information will be included in the Final Report.

TASK 8.2 Optimize and Demonstrate Integrated Biorefinery Model

The goal of this task is to optimize and demonstrate an integrated biorefinery model.

The Recipient Shall:

- ~~Modify existing IR1 Group financial models for IDP AB-CB Ethanol and digester operations, producing an Integrated Production and Financial Model for use in activities in support of commercial scale ABC-M.~~
- **Develop appropriate financial model from demonstration plant operational data to accurately design and process engineer an integrated commercial-scale energy beet biorefinery.**
- **Incorporate demonstration plant data obtained from this project into the Recipient's financial model deliverable sufficient to attract potential commercial financing for a 15 MGY integrated energy beet biorefinery.**
- Combine the modified financial models with data generated from IDP operations to create integrated financial model for the ultimate commercial scale ABC-M.
- Support data collection and analysis activities for the biorefinery components mentioned above through onsite visits by UCD personnel, who will collect and compile data about raw feedstock, intermediate process streams, and final product streams, as well as operations and economic information necessary to support technical, economic or LCA assessment.

Products:

- Integrated Production and Financial Model **sufficient to attract potential commercial financing for 15 MGY energy beet biorefinery.**

TASK 9 DATA COLLECTION AND ANALYSIS

The goal of this task is **for Recipient** to collect and analyze operational data to determine the economic viability and environmental impact of the project. Final analysis of all project data must be included in the Final Report.

The Recipient Shall:

- Collect, unless a lesser amount is approved in writing by the Commission Agreement Manager, 4 months anaerobic digester and 12 months Advanced Ethanol operational data from fuel production system to include:
 - Time operating (up and down time),
 - Efficiency of conversion of feedstock,
 - Biofuel production rate,
 - Quality and quantity of fuel produced,
- Estimate gasoline and/or petroleum-based diesel fuel that will be displaced annually.
- Explain how the project will reduce criteria air pollutants and air toxics and reduce or avoid multimedia environmental impact, and lead to a decrease, on a life cycle basis, in emissions of water pollutants or any other substances known to damage human health or the environment.
- Explain how the project incorporated and achieved the sustainability goals.
- Provide a quantified estimate of the project's carbon intensity values for life-cycle scale greenhouse gas emissions.
- Quantify any water efficiency and water use reduction measures used in the project including, but not limited to, the use of recycled or reclaimed water and the reduction or elimination of point and nonpoint source wastewater discharge.
- Describe any potential use of renewable energy or cogeneration in the project.
- Describe any potential energy efficiency measures used in the project that would exceed Title 24 standards in Part 6 of the California Code of Regulations.
- Provide data on expected job creation, economic development, and increased state revenue.
- Compare any project performance and expectations provided in the proposal to Energy Commission with actual project performance and accomplishments.
- Describe how the project supports new technology advancement for vehicles, vessels, engines, and other equipment, and promote the deployment of such technologies in the marketplace. To the extent possible describe how the project, provided a measurable transition from the nearly exclusive use of petroleum fuels to a diverse portfolio of viable alternative fuels that meets California's petroleum reduction and alternative fuel use goals.
- Describe how the project demonstrated the cost-effectiveness of the proposed technology in achieving greenhouse gas emissions reduction.
- Provide additional data that may be requested by the Energy Commission during the term of this Agreement, as is reasonably available.

Products:

- Information will be included in the Final Report.

Attachment A-1

Schedule of Products and Due Dates

Task Number	Task Name	Product(s)	Due Date
1.1	Attend Kick-off Meeting	Updated Schedule of Products	2 days prior to the Kickoff meeting
		Updated List of Match Funds	2 days prior to the Kickoff meeting
		Updated List of Permits	2 days prior to the Kickoff meeting
		Kick-Off Meeting Agenda (CEC)	Commission
1.2	Critical Project Review Meetings CPR Meeting	CPR Report - Task 5: Construction Completion	4/21/2014 9/30/14
		Written determination (CEC)	Commission
1.3	Final Meeting	Written documentation of meeting agreements	6/29/2015 7/30/15
		Schedule for completing closeout activities	6/29/2015 8/30/15
1.4	Monthly Progress Reports	Monthly Progress Reports	The 10th calendar day after each month during the approved term of this Agreement
1.5	Final Report	Draft Outline of the Final Report	9/30/2014-12/15/14
		Final Outline of the Final Report	12/1/2014-1/30/15
		Draft Final Report	2/2/2015- 4/30/15
		Final Report (no less than 60 days before the end term of the agreement)	4/30/2015 6/30/15
1.6	Identify and Obtain Match Funds	A letter regarding match funds or stating that no match funds are provided	2 days prior to the Kickoff meeting
		Copy(ies) of each match fund commitment letter(s) (if applicable)	2 days prior to the Kickoff meeting
		Letter(s) for new match funds (if applicable)	Within 10 days of identifying new match funds
		Letter that match funds were reduced (if applicable)	Within 10 days of identifying reduced match funds
1.7	Identify and Obtain Required Permits	Letter documenting the permits or stating that no permits are required	2 days prior to the Kickoff meeting

Attachment A-1

1.7 (cont)	A copy of each approved permit (if applicable)	Within 10 days of receiving each permit
	Updated list of permits as they change during the term of the Agreement (if applicable)	Within 10 days of change in list of permits
	Updated schedule for acquiring permits as changes occur during the term of the Agreement (if applicable)	Within 10 days of change in schedule for obtaining permits
1.8	Obtain and Execute Subcontracts	
	Letter describing the subcontracts needed, or stating that no subcontracts are required	2 days prior to the Kickoff meeting
	Draft subcontracts	15 days before the scheduled date of execution
	Final subcontracts	Within 10 days of execution
2	Energy Beet Production	
	BMP Self-Assessment Workbook Framework	11/29/2013
	Contracts with local energy beet farmers	4/3/2013
3	Design Phase	
	Initial Design Package for Advanced Ethanol plant	3/31/2013
	Modified Design Package for UCD Anaerobic Digester	9/4/2013
4	Pre-Construction	
	4.1 Agreements Letter	3/31/2013
	Records of necessary agreements	3/31/2013
	4.2 Equipment List	3/31/2013 3/30/14
	Procurement Schedule	3/31/2013 4/30/14
	Construction Estimate	3/31/2013 4/30/14
	4.3 Written Notification of Readiness to Construct	3/31/2013 4/30/14
	Construction Schedule	3/31/2013 3/31/14
5	Construction	
	Written Notification of Demonstration Operation	2/4/2014 9/30/14
	Critical Project Review	see Task 1.2
	Critical Project Review Report	1/4/2014 10/30/14
6	Plant Operations	
	6.1 Report on Operations in Monthly Progress Reports	1/10/2014 9/30/14
	6.2, 6.3 Report on Operations in Monthly Progress Reports	5/10/2014 10/30/14
	6.4 Test Plan	10/4/2013 6/30/14
7	Biofuels Development Analysis	
	7.1 Lifecycle Analysis Report	12/30/2014 2/28/15
	7.2 Lifecycle Benefits Report	12/30/2014 2/28/15
8	Coordination, Integration & Management	
	8.2 Integrated Production & Financial Model	3/4/2015 6/30/15
9 (Final)	Data Collection and Analysis	
	None - Data from this task included in Final Rpt.	N/A

EXHIBIT B

Exh B-1a Task Summary

Summary Task Budget		Prime Recipient Reimbursable Costs	Major Subcontractor # 1 Reimbursable Costs	Major Subcontractor #2 Reimbursable Costs	Major Subcontractor #3 Reimbursable Costs	Major Subcontractor #4 Reimbursable Costs	Major Subcontractor #5 Reimbursable Costs	Commission-Reimbursable-Costs	Commission Reimbursable Costs	Match Funding	Match Funding	Totals
		Mendota Bioenergy, LLC	Easy Energy Systems, Inc	University of California, Davis	California State University, Fresno	Red Rock Ranch, Inc.	JAL Engineering					
1.0	Administration	\$ 82,672	\$ 1,113	\$ 16,004	\$ 6,715	\$ 4,366		\$ 80,945	\$ 110,870	\$ 141,061		\$ 251,931
2.0	Energy Beet Production	\$ 491,916		\$ 25,000	\$ 138,402	\$ -		\$ 1,070,393	\$ 655,318	\$ 460,717		\$ 1,116,035
3.0	Design Phase	\$ -	\$ 24,312	\$ -	\$ -	\$ 7,081		\$ 94,334	\$ 31,393	\$ 1,096,035		\$ 1,127,428
4.0	Pre-Construction	\$ 50,815	\$ 10,000	\$ -	\$ -	\$ 6,131	\$ 129,921	\$ 64,134	\$ 196,867	\$ 67,577	\$ 82,015	\$ 278,882
5.0	Construction		\$ 2,139,375	\$ 24,000	\$ -	\$ 13,212		\$ 2,276,112	\$ 2,176,587	\$ 3,070,992		\$ 5,247,579
6.0	Plant Operations	\$ 506,373	\$ 196,032	\$ 267,401	\$ 50,000	\$ 108,934	\$ 52,500	\$ 1,011,077	\$ 1,181,246	\$ 1,107,022	\$ 1,225,897	\$ 2,407,137
7.0	Biofuels Development Analysis			\$ 197,734	\$ 62,153	\$ -		\$ 259,887		\$ 71,595		\$ 331,482
8.0	Coordination & Management	\$ 197,578	\$ 96,326	\$ -	\$ 7,000	\$ 20,393	\$ 26,250	\$ 115,833	\$ 347,547	\$ 337,014	\$ 351,452	\$ 698,999
9.0	Data Collection & Analysis			\$ 26,344	\$ 6,215	\$ 6,131		\$ 38,690		\$ 95,960		\$ 134,650
Grand Totals		\$ 1,329,354	\$ 2,467,158	\$ 556,483	\$ 270,485	\$ 166,248	\$ 208,671	\$ 4,068,399	\$ 4,998,399	\$ 6,537,574	\$ 6,595,724	\$ 11,594,123

For these boxes, be sure to include all costs: labor (unloaded rates) and non-labor costs (fringe, overhead, general & administrative, and other direct operating costs). The totals are total costs to perform each task.

EXHIBIT B

Exh B-1b Category Summary

Summary Category Budget	Prime Recipient Reimbursable Costs	Major Subcontractor #1 Reimbursable Costs	Major Subcontractor #2 Reimbursable Costs	Major Subcontractor #3 Reimbursable Costs	Major Subcontractor #4 Reimbursable Costs	Major Subcontractor #5 Reimbursable Costs	Totals	Totals
	Mendota Bioenergy, LLC	Easy Enery Systems, Inc.	University of California, Davis	California State University, Fresno	Red Rock Ranch, Inc	JAL Engineering		
Direct Labor	\$ 107,950		\$ 206,799	\$ 63,759	\$ 42,651	\$ 155,937	\$ 577,096	\$ 577,096
Fringe Benefits	\$ 22,738		\$ 47,770	\$ 27,028	\$ 10,663	\$ 39,234	\$ 147,433	\$ 147,433
Travel				\$ -			\$ -	\$ -
Equipment	\$ 115,000	\$ 2,163,687		\$ -	\$ 95,937		\$ 2,427,999	\$ 2,374,624
Materials/Misc	\$ 655,757	\$ 215,371	\$ 200,775	\$ 146,180	\$ -		\$ 1,282,046	\$ 1,218,083
Minor Subcontractors	\$ 398,347		\$ -	\$ -			\$ 398,347	\$ 398,347
Total Direct	\$ 1,299,792	\$ 2,379,058	\$ 455,344	\$ 236,967	\$ 149,251	\$ 195,171	\$ 4,742,760	\$ 4,715,583
Indirect Overhead			\$ 101,139	\$ 33,518	\$ 7,997	\$ 13,500	\$ 120,289	\$ 156,154
General & Administrative	\$ 29,562	\$ 88,100		\$ -	\$ 9,000		\$ 126,350	\$ 126,662
Total Indirect	\$ 29,562	\$ 88,100	\$ 101,139	\$ 33,518	\$ 16,997	\$ 13,500	\$ 265,639	\$ 282,816
Grand Total	\$ 1,329,354	\$ 2,467,158	\$ 556,483	\$ 270,485	\$ 166,248	\$ 208,671	\$ 4,998,399	\$ 4,998,399

Direct Labor = unloaded rates X number of hours (Att B-3)

* A Minor Subcontractor is any subcontractor receiving less than \$100,000 or 25% (whichever is less) of the Commission Funds.

EXHIBIT B Exh B-2 Recip Labor Rates

Mendota Bioenergy, LLC

Time intervals from the start of the Grant through the Grant Term End Date. (Use your organization's Fiscal Year start / end dates.)		Projected Hourly Unloaded Rates (\$)						Total Hours Worked
		From: 1/1/13		From: 1/1/14		From: 1/1/15		
		To: 12/31/13	To: 12/31/14	To: 12/31/15				
Name	Job Classification/Title	(\$) Unloaded Maximum Rate	(\$) Unloaded Maximum Rate	(\$) Unloaded Maximum Rate				
William Pucheu	General Manager	\$ 75.00	\$ 75.00	\$ 75.00			400	
Jim Tischer	Co-PI/PD	\$ 63.00	\$ 63.00	\$ 63.00			1400	
Sharon Starcher Ellen Suryadi	Project Admin. Coordinator	\$ 50.00	\$ 50.00	\$ 50.00			350	
TBD Veronica Diaz	Asst. Project Manager	\$ 25.00	\$ 25.00	\$ 25.00			1800	

* Actual billable rates cannot exceed the rates specified in this exhibit.
 * Rates listed must be unloaded rates (that is, before fringe benefits, overhead, or G&A). These rates must reflect the highest salary or wage rate that is actually paid to the employee.

EXHIBIT B

Exh B-2b Sub #2 Labor Rates

University of California, Davis

Time intervals from the start of the Grant through the Grant Term End Date. (Use your organization's Fiscal Year start / end dates.)		Projected Hourly Rates (\$)						Total Hours Worked
		From:	1/1/13	From:	1/1/14	From:	1/1/15	
		To:	12/31/13	To:	12/31/14	To:	12/31/15	
Name	Job Classification/Title	(\$) Unloaded Maximum Rate						
Dr. Ruihong Zhang	Co-PI/PD	\$ 70.00	\$ 72.00	\$ 72.00	\$ 72.00	\$ 72.00	\$ 72.00	480
Dr. Alissa Kendall	CO-PI	\$ 61.00	\$ 61.00	\$ 61.00	\$ 61.00	\$ 61.00	\$ 61.00	240
Dr. Stephen Kaffka	CO-PI	\$ 58.00	\$ 58.00	\$ 58.00	\$ 58.00	\$ 58.00	\$ 58.00	300
Dr. Mark Jenner	Economic Analyst	\$ 42.00	\$ 42.00	\$ 42.00	\$ 42.00	\$ 42.00	\$ 42.00	1200
Jinmin Zhang	Beet Agronomy Asst.	\$ 24.00	\$ 26.00	\$ 26.00	\$ 26.00	\$ 26.00	\$ 26.00	1000
Steve Zicari	Plant Data Analyst	\$ 20.00	\$ 20.00	\$ 20.00	\$ 20.00	\$ 20.00	\$ 20.00	1500
TBD (GSRII)	LCA Asst.	\$ 18.00	\$ 19.00	\$ 19.00	\$ 19.00	\$ 19.00	\$ 19.00	2000

* Actual billable rates cannot exceed the rates specified in this exhibit.

* Rates listed must be unloaded rates (that is, before fringe benefits, overhead, or G&A). These rates must reflect the highest salary or wage rate that is actually paid to the employee.

EXHIBIT B

Exh B-2c Sub#3 Labor Rates

California State University, Fresno

Time intervals from the start of the Grant through the Grant Term End Date. (Use your organization's Fiscal Year start / end dates.)		Projected Hourly Rates (\$)						Total Hours Worked
		From: 1/1/13		From: 1/1/14		From: 1/1/15		
		To: 12/31/13	To: 12/31/14	To: 12/31/15	To: 12/31/15	To: 12/31/15	To: 12/31/15	
Name	Job Classification/Title	(\$ Unloaded Maximum Rate	(\$ Unloaded Maximum Rate	(\$ Unloaded Maximum Rate	(\$ Unloaded Maximum Rate	(\$ Unloaded Maximum Rate	(\$ Unloaded Maximum Rate	
Dr. David Zoldoske	CSUF Team Director	\$ 65.00	\$ 65.00	\$ 65.00	\$ 65.00	\$ 65.00	75	
Dr. Mechel Paggi	Economist	\$ 52.00	\$ 52.00	\$ 52.00	\$ 52.00	\$ 52.00	333	
Theresa Sabasto	Community Outreach	\$ 30.00	\$ 30.00	\$ 30.00	\$ 30.00	\$ 30.00	130	
Ellen Suryadi	CSUF Admin	\$ 26.00	\$ 26.00	\$ 26.00	\$ 26.00	\$ 26.00	130	
Diganta Adhikari	Researcher	\$ 40.00	\$ 40.00	\$ 40.00	\$ 40.00	\$ 40.00	600	
Patrick Barnes	Researcher	\$ 30.00	\$ 30.00	\$ 30.00	\$ 30.00	\$ 30.00	580	
Kaomine Vang	Researcher	\$ 30.00	\$ 30.00	\$ 30.00	\$ 30.00	\$ 30.00	209	

* Actual billable rates cannot exceed the rates specified in this exhibit.

* Rates listed must be unloaded rates (that is, before fringe benefits, overhead, or G&A). These rates must reflect the highest salary or wage rate that is actually paid to the employee.

EXHIBIT B

Exh B-3 Recip Non-Labor Rates

Mendota Bioenergy, LLC				Percentage Rate		
Time intervals from the start of the Grant through the Grant Term End Date. (Use your organization's Fiscal Year start / end dates.)				Fringe Benefits (FB)	Indirect Overhead (IOH)	General & Administrative (G&A)
From:	1/1/13	To:	12/31/13	25.0000%	15.0000%	10.0000%
From:	1/1/14	To:	12/31/14	25.0000%	15.0000%	10.0000%
From:	1/1/15	To:	12/31/15	25.0000%	15.0000%	10.0000%

Note: Use the categories that you typically use in your standard business practice.

Non-Labor Rate	List the budget expense items to which the indirect costs or fees are applied.
Fringe Benefits	DL
Indirect Overhead	DL, FB
General & Administrative	M, E, T, S

List items you include in each category (e.g., vacation, retirement plan, telephone, secretarial, rent/lease).		
Fringe Benefits	Indirect Overhead	General & Administrative
Vacation	Payroll Administration	Contract Administration
Retirement	Work Comp Ins.	Accounting
Health Insurance	Payroll Taxes	Insurance
		Lease
		Secretarial
		Procurement
		Computer
		Telephone
		Postage & Delivery
		Printing & Reproduction

* Actual billable rates cannot exceed the rates specified in this exhibit.

EXHIBIT B

Exh B-3a Sub#1 Non-Labor Rates

Easy Energy Systems, Inc.				Percentage Rate		
Time intervals from the start of the Grant through the Grant Term End Date. (Use your organization's Fiscal Year start / end dates.)				Fringe Benefits (FB)	Indirect Overhead (IOH)	General & Administrative (G&A)
From:	1/1/13	To:	12/31/13	25.0000%	15.0000%	10.0000%
From:	1/1/14	To:	12/31/14	25.0000%	15.0000%	10.0000%
From:	1/1/15	To:	12/31/15	25.0000%	15.0000%	10.0000%

Note: Use the categories that you typically use in your standard business practice

Non-Labor Rate	List the budget expense items to which the indirect costs or fees are applied.
Fringe Benefits	DL
Indirect Overhead	DL, FB
General & Administrative	M, E, T, S

List items you include in each category (e.g., vacation, retirement plan, telephone, secretarial, rent/lease).		
Fringe Benefits	Indirect Overhead	General & Administrative
Vacation	Payroll Administration	Contract Administration
Retirement	Work Comp Ins.	Accounting
Health insurance	Payroll Taxes	Insurance
		Lease
		Secretarial
		Procurement
		Computer
		Telephone
		Postage & Delivery
		Printing & Reproduction

* Actual billable rates cannot exceed the rates specified in this exhibit.

EXHIBIT B

Exh B-3b Sub#2 Non-Labor Rates

University of California, Davis				Percentage Rate							
Time Intervals from the start of the Grant through the Grant Term End Date. (Use your organization's Fiscal Year start / end dates.)				Fringe Benefits (FB) - R. Zhang	Fringe Benefits (FB) - Kendall	Fringe Benefits (FB) - Kaffka	Fringe Benefits (FB) - Jenner	Fringe Benefits (FB) - J. Zhang	Fringe Benefits (FB) - Zicari	Indirect Overhead (IOH)	General & Administrative (G&A)
From:	1/1/13	To:	12/31/13	30.3000%	30.3000%	30.3000%	44.2000%	20.1000%	1.3000%	25.0000%	%
From:	1/1/14	To:	12/31/14	31.8000%	31.8000%	31.8000%	46.1000%	20.4000%	1.3000%	25.0000%	%
From:	1/1/15	To:	12/31/15	33.9000%	33.9000%	33.9000%	48.7750%	20.8250%	1.3000%	25.0000%	%

Note: Use the categories that you typically use in your standard business practice.

Non-Labor Rate	List the budget expense items to which the indirect costs or fees are applied. Use the following abbreviations:
Fringe Benefits	DL
Indirect Overhead	DL, FB, M, S
General & Administrative	

List items you include in each category (e.g., vacation, retirement plan, telephone, secretarial, rent/lease, insurance, etc.)							
Fringe Benefits	Indirect Overhead						General & Administrative
For PI's & Staff (Analysts)							
medical	Payroll Compensation						
dental	Work Comp Insurance						
vision	Payroll Taxes						
retirement							
For Post Doc	For Post Doc						
medical	Payroll Compensation						
dental	Work Comp Insurance						
vision	Payroll Taxes						
For Grad Student	For Grad Student						
Medical	Work Comp Insurance, Payroll Taxes						

* Actual billable rates cannot exceed the rates specified in this exhibit.

EXHIBIT B

Exh B-3c Sub#3 Non-Labor Rates

California State University, Fresno				Percentage Rate								
Time intervals from the start of the Grant through the Grant Term End Date. (Use your organization's Fiscal Year start / end dates.)				Fringe Benefits (FB) Zoldoske	Fringe Benefits (FB) Paggi	Fringe Benefits (FB) Sebasto	Fringe Benefits (FB) Suryadi	Fringe Benefits (FB) Adhikari	Fringe Benefits (FB) Barnes	Fringe Benefits (FB) Vang	Indirect Overhead (IOH)	General & Administrative (G&A)
From:	1/1/13	To:	12/31/13	41.6900%	42.2000%	37.8000%	60.3400%	55.0000%	30.0000%	45.0000%	25.0000%	%
From:	1/1/14	To:	12/31/14	41.6900%	42.2000%	37.8000%	60.3400%	55.0000%	30.0000%	45.0000%	25.0000%	%
From:	1/1/15	To:	12/31/15	41.6900%	42.2000%	37.8000%	60.3400%	55.0000%	30.0000%	45.0000%	25.0000%	%

Note: Use the categories that you typically use in your standard business practice.

Non-Labor Rate	List the budget expense items to which the indirect costs or fees are applied. Use the following abbreviations:
Fringe Benefits	DL
Indirect Overhead	DL, FB, M, T
General & Administrative	

List items you include in each category (e.g., vacation, retirement plan, telephone, secretarial, rent/lease, insurance, etc.).									
Fringe Benefits	Indirect Overhead								General & Administrative
For PI's and Staff (Analysts)	For Pis and Staff (Analys)								
medical	Worker Comp Insurance								
dental	Payroll Taxes								
vision	Payroll Administration								
retirement									
For Post Doc	For Post Doc								
medical	N/A								
dental									
vision									
For Grad Student	For Grad Student								
Medical	N/A								

* Actual billable rates cannot exceed the rates specified in this exhibit.

EXHIBIT B

Exh B-3d Sub#4 Non-Labor Rates

Red Rock Ranch, Inc.				Percentage Rate		
Time intervals from the start of the Grant through the Grant Term End Date. (Use your organization's Fiscal Year start / end dates.)				Fringe Benefits (FB)	Indirect Overhead (IOH)	General & Administrative (G&A)
From:	1/1/13	To:	12/31/13	25.0000%	15.0000%	10.0000%
From:	1/1/14	To:	12/31/14	25.0000%	15.0000%	10.0000%
From:	1/1/15	To:	12/31/15	25.0000%	15.0000%	10.0000%

Note: Use the categories that you typically use in your standard business practice.

Non-Labor Rate	List the budget expense items to which the indirect costs or fees are applied.
Fringe Benefits	DL
Indirect Overhead	DL, FB
General & Administrative	M, E, T, S

List items you include in each category (e.g., vacation, retirement plan, telephone, secretarial, rent/lease).		
Fringe Benefits	Indirect Overhead	General & Administrative
Vacation	Payroll Administration	Contract Administration
Retirement	Work Comp Ins.	Accounting
Health Insurance	Payroll Taxes	Insurance
		Lease
		Secretarial
		Procurement
		Computer
		Telephone
		Postage & Delivery
		Printing & Reproduction

* Actual billable rates cannot exceed the rates specified in this exhibit.

EXHIBIT B

Exh B-4 Direct Operating Expens

Pre-approved Travel List *						
Task No.	cost incurred by	Trip #	Who	Trip Purpose	New Amount Commission Funds	Match Funds
1,2	Recipient		William Pucheu	To Growers, Plant Site,		2,400.00
1,3	Recipient		Jim Tischer	To Growers, Plant Site,		24,000.00
1,4	Recipient		Sharon Starcher	To Growers, Plant Site,		1,200.00
8	Recipient		William Pucheu	Annual Project Partner		10,000.00
8	Recipient		Jim Tischer	Annual Project Partner		10,000.00
1	Recipient		William Pucheu	To CEC Kick-off, CPR a		525.00
1	Recipient		Jim Tischer	To CEC Kick-off, CPR a		75.00
1	Recipient		Sharon Starcher	To CEC Kick-off, CPR a		525.00
1	Recipient		Asst. Project Mgr.	To CEC Kick-off, CPR a		525.00
1	Sub1 - IR1		Jeff Manternach	Quarterly Project Meetin		4,000.00
1	Sub1 - IR1		Asst. Project Mgr.			4,000.00
6	Sub1 - IR1		Tom Aumer	Ethanol Plant Startup &		18,000.00
3,5,6	Sub1 - IR1		Joe Winckler	Ethanol Plant Design &		22,500.00
3,5	Sub1 - IR1		Josh Pendergrass	site layout, engineering,		22,500.00
3,5	Sub1 - IR1		Jim Moore	site layout, engineering,		18,000.00
8	Sub1 - IR1		Jeff Manternach	Annual Project Partner		10,000.00
3	Sub1 - IR1		Josh Pendergrass	Annual Project Partner		10,000.00
3	Sub1 - IR1		Jim Moore	Annual Project Partner		10,000.00
1	Sub1 - IR1		Jeff Manternach	To CEC Kick-off, CPR a		1,200.00
1	Sub1 - IR1		Asst. Project Mgr.			1,200.00
1	Sub1 - IR1		Josh Pendergrass	To CEC Kick-off, CPR a		800.00
1	Sub1 - IR1		Jim Moore	To CEC Kick-off, CPR a		1,500.00
6	Sub2 - UCD		Steve Zicari & GSRII	Project Site, and Grower		12,150.00
6,8	Sub2 - UCD		Zhang, Kafka, Kendall, Zicari &/or GSRII	Travel to Conferences (6,550.00
2	Sub3 - CSUF		Teresa Sabasto	Community Outreach to		2,500.00
2,8	Sub3 - CSUF		Michel Paggi	Other travel in project ar		2,500.00
1	Sub4 - RRR		John Diener	To CEC Kick-off, CPR a		600.00
8	Sub4 - RRR		John Diener	Annual Project Partner		10,000.00
8	Sub4 - RRR		John Diener	Other travel in project ar		2,000.00
1	Sub4 - RRR		Russ Teal	Travel to Quarterly Proje		6,400.00
6	Minor Sub1		USDA	Local travel in Project Ar		2,000.00
Total:					\$ -	\$ 213,750.00

* Travel is reimbursed at state rates.

EXHIBIT B

Exh B-4 Direct Operating Expens

Task No.	cost incurred by	Equipment**		Amount Commission Funds	Amount Commission Funds	Match Funds
		Description	Unit Cost			
2	Recipient	Infrared Sugar Sampler	\$ 15,000.00	\$ 15,000.00		
2	Recipient	Data transponders/receivers	\$ 60,000.00	\$ 60,000.00		
2	Recipient	Energy Beet Harvesters	\$ 36,000.00	\$ -	\$ 38,900.00	
2	Recipient	Cross RHINO beet washer	\$ 150,000.00	\$ 75,000.00	\$ 100,000.00	\$ 75,000.00
3	Recipient	Ethanol Plant - Engineering Modifications	\$ -	\$ 54,313.00		
3	Sub1 - EES	Design Engineering	\$ 24,312.00	\$ 24,312.00		\$ 1,084,591.00
5	Sub1 - EES	Glycol Heat System - Module	\$ 144,692.00	\$ 144,692.00		
5	Sub1 - EES	Beet Front End Processing - Module	\$ 134,500.00	\$ 134,500.00		
5	Sub1 - EES	Beet/Yeast/CIP/CO2 - Module	\$ 520,440.00	\$ 301,657.00	\$ 218,783.00	
5	Sub1 - EES	Ferment Racks - Module	\$ 517,681.00	\$ 300,058.00	\$ 217,623.00	
5	Sub1 - EES	Distillation Module	\$ 775,390.00	\$ 449,526.00	\$ 325,964.00	
5	Sub1 - EES	Molecular Module	\$ 653,329.00	\$ 378,674.00	\$ 274,655.00	
5	Sub1 - EES	Cooling Tower - Module	\$ 52,715.00	\$ 30,554.00	\$ 22,161.00	
5	Sub1 - EES	Ferment and Beer Tanks - Module	\$ 71,299.50	\$ 25,280.00	\$ 545,116.00	
5	Sub1 - EES	Liquorfaction/Pretreatment - Module	\$ 570,396.00	\$ 258,436.00	\$ 18,898.00	
5	Sub1 - EES	Construction	\$ 125,458.00	\$ 115,998.00		
6	Sub2-UCD	Pilot Biogas Plant	\$ 262,500.00	\$ -	\$ 262,500.00	
2	Sub3-CSUF	Drip Irrigation	\$ 35,000.00	\$ -	\$ 35,000.00	
6	Sub4- RRR	Insta-Pro Seed Crusher Plant	\$ 150,000.00	\$ -	\$ 150,000.00	
6	Sub4- RRR	BIODICO Biodiesel Plant	\$ 150,000.00	\$ -	\$ 150,000.00	
6	Sub4- RRR	Biodiesel Tanks	\$ 10,000.00	\$ 30,000.00	\$ -	
6	Sub4- RRR	Biodiesel Transfer Pumps & Related	\$ 10,000.00	\$ 30,000.00	\$ -	
6	Sub4- RRR	Biodiesel Transfer Pumps & Related			\$ 95,937.00	
				\$ 2,428,000.00	\$ 2,374,624.00	\$ 3,419,191.00

** Equipment is defined as having an acquisition unit cost of at least \$5,000. See

MBLLC

Task 1	\$ 82,672.00
Task 2	\$ 491,916.00
Task 4	\$ 50,815.00
Task 6	\$ 506,373.00
Task 8	\$ 197,578.00
G & A / Task	\$ 29,562.00
	\$ 1,329,354.00

EES

Task 1	\$ 89,213.00
Task 3	\$ 24,312.00
Task 4	\$ 10,000.00
Task 5	\$ 2,139,375.00
Task 6	\$ 196,032.00
Task 8	\$ 8,226.00
G & A / Task	\$ 88,100.00
	\$ 2,467,158.00

EXHIBIT B

Exh B-4 Direct Operating Expens

		Material(s)/ Miscellaneous Costs					
Task No.	Task No.	cost incurred by	Description	Unit Cost	Amount Commission Funds	Amount Commission Funds	Match Funds
2		Recipient	8800 tons Energy Beets	\$ 50.00	\$ 460,000.00	\$ 155,000.00	\$ -
2		Recipient	Energy Beet Seeds	\$ 100.00			\$ 25,000.00
2		Recipient	SureHarvest BMP grower licesne fees	\$ 25,000.00	\$ -		\$ 25,000.00
2		Recipient	Agronomic work on pest control	\$ 30,000.00	\$ 32,916.00	\$ 5,916.00	
6		Recipient	71,374 lbs Canola seeds	\$ 0.30	\$ 3,472.00		\$ -
6		Recipient	USDA-ARS materials & supplies match	\$ 69,000.00	\$ -		\$ 69,000.00
6		Recipient	Energy Beet Treatment material	\$ 10.00	\$ 5,000.00	\$ -	\$ -
6		Recipient	Energy Beet Treatment material	\$ 20.00	\$ 10,000.00	\$ -	\$ -
6		Recipient	Nat Gas for IDP - Ethanol Plant	\$ 80,998.00	\$ 80,998.00	\$ -	\$ -
6		Recipient	Chemicals, Enzymes & Yeast for IDP	\$ 67,498.00	\$ 67,498.00	\$ -	\$ -
6		Recipient	Electricity for IDP - Ethanol Plant	\$ 84,373.00	\$ 84,373.00	\$ -	\$ -
6		Recipient	Repairs & Maintenance on IDP - Ethanol	\$ 84,373.00	\$ 84,373.00	\$ -	\$ -
6		Recipient	Misc. Other IDP-Ethanol Ops Costs	\$ 17,499.00	\$ 17,499.00	\$ 339,498.00	
1		Sub 1 - EES	Administration	\$ 1,325.00	\$ 1,113.00		\$ 35,058.00
4		Sub 1 - EES	Pre-Construction	\$ 10,000.00	\$ 10,000.00		\$ 52,728.00
6		Sub 1 - EES	Operations	\$ 30,448.00	\$ 30,661.00	\$ 196,032.00	\$ 351,639.00
8		Sub 1 - EES	Coordination and Management	\$ 8,226.00	\$ 8,226.00		\$ 82,861.00
9		Sub 1 - EES	Data Collection and Analysis				\$ 34,486.00
2		Sub2 - UCD	Agronomic Work on beet yield	\$ 25,000	\$ 25,000	\$ 5,000.00	
5	2	Sub2 - UCD	Mobile Weather Station	\$ 4,000	\$ 4,000		
5		Sub2 - UCD	Supplies for biogas plant upgrading and repair	\$ 20,000	\$ 20,000	\$ 19,200.00	
6		Sub2 - UCD	Chemicals and fuel	\$ 12,000	\$ 12,000		
6		Sub2 - UCD	Lab supplies and fees; biogas plant operations	\$ 58,000	\$ 58,000	\$ 80,987.00	
6		Sub2 - UCD	Plant ope Plant operation permit and software license	\$ 3,300	\$ 3,300		
6		Sub2 - UCD	Digester effluent treatment system lease	\$ 15,000	\$ 15,000		
6		Sub2 - UCD	Digester solids effluent disposal	\$ 10,500	\$ 10,500		
6		Sub2 - UCD	Graduate Digester solids effluent disposal	\$ 56,000	\$ 56,000	\$ 25,394.00	
	7	Sub2 - UCD	Biofuels Development			\$ 25,394.00	
2		Sub3 - CSUF	1200 tons Energy Beets	\$ 40.98	\$ 49,180.00		\$ -
2		Sub3 - CSUF	Agronomic Work on beet yield/irrigation	\$ 90,000.00	\$ 90,000.00		\$ 166,000.00
8		Sub3 - CSUF	Meeting Supplies	\$ 300.00	\$ 3,000.00		\$ -
8		Sub3 - CSUF	Office Supplies	\$ 4,000.00	\$ 4,000.00		\$ -
6		Sub4 - RRR	Ag Bags or Similar, plus drainage materials	\$ 30.00	\$ 15,000.00	\$ -	\$ -
6		Sub4 - RRR	Chemical, R&M, Elec. & Other	\$ 10,937.00	\$ 20,937.00	\$ -	\$ -
5		Sub4 - RRR	RRR Site	\$ 75,000.00			\$ 1,425,000.00
					\$ 36,937.00	\$ -	
					\$ 1,282,046.00	\$ 1,218,083.00	\$ 2,266,772.00

EES

EXHIBIT B
Exh B-4 Direct Operating Expens

Task No.	cost incurred by	Minor Subcontractors		Amount Commission Funds	Match Funds	
		Subcontractor Legal Name	Purpose			
1	Recipient	Baker, Manock & Jensen		\$ 25,000.00		
1	Recipient	Baker, Peterson & Franklin		\$ 25,000.00		
2	Recipient	Del Testa Harvesting, Inc.		\$ 96,000.00	\$ 36,000.00	
2	Recipient	SureHarvest		\$ 95,000.00		
2	Recipient	Cartel Transport, LLC		\$ 96,000.00	\$ 50,000.00	
2	Recipient	Jerry Baird Insurance		\$ 35,000.00		
4	Recipient	FSS and/or Merjent/JAL		\$ 85,800.00	\$ -	
4	Recipient	Zicari/Technicon			\$ 50,815.00	
6	Recipient	TBD		\$ 5,832.00		
6	Recipient	TBD		\$ 5,400.00		
6	Recipient	TBD		\$ 300.00		
6	Recipient	TBD		\$ 84,373.00		
8	Recipient	The Grant Farm		\$ 40,000.00	\$ 25,000.00	
8	Recipient	The Leon Woods Group		\$ 30,000.00		
				\$ 623,705.00	\$ 398,347.00	
6	Sub2 -UCD	TBD		\$ 61,496.00	\$ -	
Total:				\$ 675,110.00	\$ 398,347.00	\$ 25,000.00

Total for Travel, Equipment, Materials/Misc. & Subs	\$ 4,385,156.00	\$ 3,991,054.00	\$ 5,899,713.00
Total Funding for Direct Labor, Fringe Benefits, Indirect Overhead, and G&A	\$ 613,243.00	\$ 1,007,345.00	\$ 696,011.00
GRAND TOTAL	\$ 4,998,399.00	\$ 4,998,399.00	\$ 6,595,724.00

EXHIBIT B

ExhB-4a Ethanol Plant Equip

Equipment Description	Quantity	Size	Material of Construction
AIR COMPRESSOR & AIR DRYER	1		CS
AGITATORS	9		
BEET RECEIVING & STORAGE	1		CS
BEET CLEANING	1		CS
BEET SIZE SLICING & SLURRYING	1		CS
BOILER (economizer, deaerator, feedwater system, etc.)	1	100 HP	
TRAYED COLUMNS			
Distillation	2		304 SS
COOLING TOWER & FANS	1		
PLATE & FRAME HEAT EXCHANGERS	4		CS/304 SS
SHELL & TUBE HEAT EXCHANGERS	3		316 SS
EVAPORATOR	3		304 SS/304 SS
FLASH EVAPORATOR	1		304 SS/304 SS
FILTERS	2		304 SS/304 SS
PRESSURE VESSELS			CS
Regen Receiver	1		304SS
Condensate Separator	1		304SS
Fusel Oil Separator	1		304SS
Evap Condensate Receiver	1		304SS
Evap Vacuum Receiver	1		304SS
PUMPS			
Centrifugal	20		CD-4MCu
Rotary	3		CD-4MCu
Metering	3		316SS
Cooling Tower	1		DCI
SCRUBBER			
CO ₂	1		304 SS
TANKS			
Slurry	1	500 gal	CS or Poly
Liquefaction	1	1,000 gal (ea)	CS or Poly
Liquid Inv Storage	1	250 gal	CS or Poly
Yeast Prop	1	2,000 gal	CS or Poly
Fermenters	4	15,000 gal (ea)	CS or Poly
Beer Well	1	20,000 gal	CS or Poly
Stillage	2	4,000 gal (ea)	CS or Poly
Denaturant	1	4,000 gal	CS or Poly
Ethanol Day	2	4,000 gal (ea)	CS or Poly
Product Storage	2	12,000 gal (ea)	CS or Poly
Process Condensate	1	4,000 gal	CS or Poly
VACUUM EDUCTOR	2		

EXHIBIT B Exh B-5 Match Funding

Task Match Funding Budget		Prime Contractor Match Contribution	Major Subcontractor #1 Match Contribution	Major Subcontractor #2 Match Contribution	Major Subcontractor #3 Match Contribution	Major Subcontractor #4 Match Contribution	Major Subcontractor #5 Match Contribution	Match Funding
		Mendota Bioenergy, LLC	Easy Energy Systems, Inc	University of California, Davis	California State University, Fresno	Red Rock Ranch, Inc.	JAL Engineering	
1.0	Administration	\$ 94,099	\$ 35,058	\$ 3,274	\$ 2,576	\$ 6,054		\$ 141,061
2.0	Energy Beet Production	\$ 239,105	\$ -	\$ -	\$ 221,612	\$ -		\$ 460,717
3.0	Design Phase	\$ -	\$ 1,084,591	\$ -	\$ -	\$ 11,444		\$ 1,096,035
4.0	Pre-Construction	\$ 3,500	\$ 52,728	\$ -	\$ -	\$ 11,349	\$ 14,438	\$ 82,015
5.0	Construction	\$ -	\$ 1,623,200	\$ -	\$ -	\$ 1,447,793		\$ 3,070,992
6.0	Plant Operations	\$ 77,792	\$ 351,639	\$ 275,594	\$ 166,000	\$ 325,997	\$ 28,875	\$ 1,225,897
7.0	Biofuels Development Analysis	\$ -	\$ -	\$ 45,830	\$ 25,765	\$ -		\$ 71,595
8.0	Coordination & Management	\$ 209,157	\$ 82,861	\$ -	\$ -	\$ 44,997	\$ 14,438	\$ 351,452
9.0	Data Collection & Analysis	\$ 44,275	\$ 34,486	\$ 3,274	\$ 2,576	\$ 11,349		\$ 95,960
Grand Totals		\$ 667,927	\$ 3,264,563	\$ 327,972	\$ 418,529	\$ 1,858,983	\$ 57,750	\$ 6,595,724

STATE OF CALIFORNIA
STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION REGARDING: AMENDMENT OF GRANT AWARD TO MENDOTA
BIOENERGY LLC UNDER PON-11-601

WHEREAS Mendota Bioenergy, LLC has applied to the State Energy Resources Conservation and Development Commission (Energy Commission) for an amendment to grant agreement ARV-12-033 originally entered into subsequent to PON-11-601, to convert energy beets into ethanol; and

WHEREAS the proposed amendment would extend the term of the Agreement by three months; make minor budget revisions; and revise the Scope of Work so that instead of converting 10,000 tons of energy beets into 285,000 gallons of ethanol, Mendota Bioenergy LLC will process 2,400 tons of energy beets into approximately 60,000 gallons of ethanol; and

WHEREAS the County of Fresno, as the Lead Agency, has in 2012 issued a Negative Declaration and filed a Notice of Determination indicating that Mendota Bioenergy, LLC's proposed project will not have a significant effect on the environment; and

WHEREAS the Energy Commission has independently reviewed the potential environmental effects of the proposed project as amended;

THEREFORE BE IT RESOLVED that the Energy Commission finds that the proposed project will have no significant environmental impacts; and

BE IT FURTHER RESOLVED, that the Energy Commission approves the proposed amendments to grant Agreement ARV-12-033 with **Mendota Bioenergy, LLC** to revise the scope of work, make minor budget revisions, and extend the term of the agreement by three months; and

BE IT FURTHER RESOLVED that this document authorizes the Executive Director or his/her designee to execute the revised agreement on behalf of the Energy Commission.

CERTIFICATION

The undersigned Secretariat to the Commission does hereby certify that the foregoing is a full, true, and correct copy of a Resolution duly and regularly adopted at a meeting of the California Energy Commission held on May 14, 2014.

AYE: Weisenmiller, Douglas, McAllister, Hochschild, Scott
NAY: None
ABSENT: None
ABSTAIN: None



Harriet Kallemeyn,
Secretariat