

CONTRACT REQUEST FORM (CRF)

CEC-94 (Revised 10/2015)

CALIFORNIA ENERGY COMMISSION



I) List all key partners: (attach additional sheets as necessary)
Legal Company Name:

J) Budget Information			
Funding Source	Funding Year of Appropriation	Budget List No.	Amount
EPIC	14-15	301.001B	\$648,716
R&D Program Area: EDMFO: EDMF		TOTAL:	\$648,716
Explanation for "Other" selection			
Reimbursement Contract #:		Federal Agreement #:	

K) Contractor's Administrator/ Officer		Contractor's Project Manager	
Name:	Sabine Brueske	Name:	Elaine Weber
Address:	7164 Columbia Gateway Dr	Address:	7164 Columbia Gateway Dr
City, State, Zip:	Columbia, MD 21046-2979	City, State, Zip:	Columbia, MD 21046-2979
Phone:	/	Fax:	- -
E-Mail:		E-Mail:	eweber@energetics.com

L) Selection Process Used (For amendments, address amendment exemption or NCB, do not identify solicitation type of original agreement.)			
<input checked="" type="checkbox"/> Solicitation RFP	Solicitation #:	RFP-15-316	# of Bids: 3
<input type="checkbox"/> Non Competitive Bid (Attach CEC 96)			Low Bid? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes
<input type="checkbox"/> Exempt	Select Exemption (see instructions)		

M) Contractor Entity Type
<input checked="" type="checkbox"/> Private Company (including non-profits)
<input type="checkbox"/> CA State Agency (including UC and CSU)
<input type="checkbox"/> Government Entity (i.e. city, county, federal government, air/water/school district, joint power authorities, university from another state)

N) Is Contractor a certified Small Business (SB), Micro Business (MB) or DVBE?	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes
If yes, check appropriate box:	<input type="checkbox"/> SB	<input type="checkbox"/> MB <input type="checkbox"/> DVBE

O) Civil Service Considerations
<input type="checkbox"/> Not Applicable (Agreement is with a CA State Entity or a membership/co-sponsorship)
<input type="checkbox"/> Public Resources Code 25620, et seq., authorizes the Commission to contract for the subject work. (PIER)
<input checked="" type="checkbox"/> The Services Contracted:
<input type="checkbox"/> are not available within civil service
<input type="checkbox"/> cannot be performed satisfactorily by civil service employees
<input checked="" type="checkbox"/> are of such a highly specialized or technical nature that the expert knowledge, expertise, and ability are not available through the civil service system.
<input checked="" type="checkbox"/> The Services are of such an:
<input type="checkbox"/> urgent
<input checked="" type="checkbox"/> temporary, or
<input type="checkbox"/> occasional nature
that the delay to implement under civil service would frustrate their very purpose.

Justification:

California has adopted policy goals, including Senate Bill 96 (2013), that direct the Energy Commission to award EPIC funds for projects that will benefit electricity ratepayers and lead to technological advancement and breakthroughs to overcome the barriers that prevent achieving the state's statutory energy goals. Recent California legislation and executive orders have also called for an update to the scoping plan to reduce carbon and other greenhouse gas emissions, and for the prioritization of drought-related efforts related to water conservation, storage and supply.

Energetics, Incorporated, the proposed contractor, has the experience, expertise, knowledge and skills to provide an in-depth assessment of the technical, financial and market barriers that must be addressed to meet the critical needs and expectations of California's utilities, ratepayers, and customers in the industrial, agricultural and water (IAW) sectors.

This work will involve developing technology performance targets and success metrics for a wide range of technologies needed to make the IAW sectors more sustainable and reliable, and evaluating the technical merits of



current research and development being conducted in the United States. This work will also involve comparing new technologies being developed with existing commercial products available in California, and identifying research and development gaps to overcome technical and cost barriers for the IAW sectors.

The breadth of skills required to do this highly complex work, including in-depth familiarity with private companies and commercial markets, is not available within civil service. The proposed work is of such a highly specialized or technical nature such that the nexus of expert knowledge, expertise, and ability to evaluate a range of multiple, complex technical and financial components are not available through the civil service system.

The roadmap created by this contract will be a snapshot of the technical and non-technical gaps hindering the mass market adoption of IAW and bioenergy technologies. The work is temporary because there is no need for a continuously updated roadmap after the two year contract is finished. This is because the roadmap will serve as a standing document that marks the current gaps that need to be addressed to maximize the market potential for IAW and bioenergy technologies.

P) Payment Method

- A. Reimbursement in arrears based on:
- Itemized Monthly Itemized Quarterly Flat Rate One-time
- B. Advanced Payment
- C. Other, explain:

Q) Retention

1. Is Agreement subject to retention? No Yes
- If Yes, Will retention be released prior to Agreement termination? No Yes

R) Justification of Rates

This contract was selected through a competitive solicitation process. As part of this competitive solicitation process, 30 percent of the total score is based on the average loaded hourly rate. The score for Average Loaded Hourly Rate is derived from a mathematical cost formula which compares the cumulative average loaded hourly rate of all loaded hourly rates listed in the subject Bidder's Cost Bid, with the cumulative average loaded hourly rate of all loaded hourly rates listed in the Lowest Bidder's cost bid.

S) Disabled Veteran Business Enterprise Program (DVBE)

1. Exempt (Interagency/Other Government Entity)
2. Meets DVBE Requirements DVBE Amount:\$ 37,116.00 DVBE %: 5%
- Contractor is Certified DVBE
- Contractor is Subcontracting with a DVBE: DAV Energy Solutions, Inc.
3. Contractor selected through CMAS or MSA with no DVBE participation.
4. Requesting DVBE Exemption (attach CEC 95)

**T) Miscellaneous Contract Information**

- | | | |
|---|--|---|
| 1. Will there be Work Authorizations? | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes |
| 2. Is the Contractor providing confidential information? | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes |
| 3. Is the Contractor going to purchase equipment? | <input checked="" type="checkbox"/> No | <input type="checkbox"/> Yes |
| 4. Check frequency of progress reports
<input checked="" type="checkbox"/> Monthly <input type="checkbox"/> Quarterly <input type="checkbox"/> | | |
| 5. Will a final report be required? | <input type="checkbox"/> No | <input checked="" type="checkbox"/> Yes |
| 6. Is the agreement, with amendments, longer than a year? If yes, why? | <input type="checkbox"/> No | <input checked="" type="checkbox"/> Yes |

The California Energy Commission is requesting an exemption to do a multi-year contract of two years. The proposed extended agreement would result from the Energy Commission's pending request for proposals under the Electric Program Investment Charge (EPIC) Program, RFP-15-316, entitled "Research Roadmap for Advancing Technologies in California's Industrial, Agricultural, and Water Sectors."

The time necessary to develop a high-quality, stakeholder-driven IAW Roadmap is greater than one year. Development of this roadmap will begin with the development of a methodology for collecting information, incorporating expert input, and seeking and incorporating stakeholder and public comments. As this work is being completed the contractor will first perform an in-depth literature review, then will conduct interviews with subject matter experts, and lastly analyze the data. This first portion of the contract is anticipated to take approximately 9 months as each of the aforementioned steps are path-dependent and build on the finished results of the previous step. After the initial research is complete the contractor will need to hold several stakeholder workshops to collect information and inform the contractor's analysis of the data and preparation of the draft roadmap, adding an additional 9 months to the roadmap process. This is because each workshop needs to be separated by an adequate time to allow for full stakeholder review, submission of comments/input, and incorporation of that input by the contractor before the next workshop can take place. The remainder of the project term will be focused on finalizing the roadmap, including a final public workshop and incorporation of final comments. This remaining work is expected to take 3-6 months, as the contractor can go through multiple rounds of edits and approval with the Energy Commission to ensure the roadmap adequately represents stakeholder and expert input.

As required by CPUC Decision 12-05-037, the Energy Commission must make efficient use of ratepayer monies in administering the EPIC Program.

Staff's request for a two-year contract will:

1. Allow for a more cost-effective approach. A shorter term contract would result in interrupting the flow of knowledge and additional person-hours spent by staff and a new contract team in gaining familiarity with the intricacies of the Program and the clean energy market.
2. Allow for a more full range of stakeholder input. A shorter term contract would result in insufficient time for stakeholders to provide multiple rounds of feedback and input while additionally allowing time for the roadmap to be finalized.

U) The following items should be attached to this CRF (as applicable)

- | | | |
|---|---|--|
| 1. Exhibit A, Scope of Work | <input type="checkbox"/> N/A | <input checked="" type="checkbox"/> Attached |
| 2. Exhibit B, Budget Detail | <input type="checkbox"/> N/A | <input checked="" type="checkbox"/> Attached |
| 3. CEC 96, NCB Request | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |
| 4. CEC 30, Survey of Prior Work | <input type="checkbox"/> N/A | <input checked="" type="checkbox"/> Attached |
| 5. CEC 95, DVBE Exemption Request | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |
| 6. CEQA Documentation | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |
| 7. Resumes | <input type="checkbox"/> N/A | <input checked="" type="checkbox"/> Attached |
| 8. CEC 105, Questionnaire for Identifying Conflicts | | <input checked="" type="checkbox"/> Attached |

Agreement Manager _____

Date _____

Office Manager _____

Date _____

Deputy Director _____

Date _____

Exhibit A Scope of Work

Task List

Task #	Task Name
1	Contract Management
2	Technical Assessment of Industrial, Agricultural, and Water Sector Technologies and Strategies
3	Finalize Methodology for Developing the Research Roadmap
4	Develop the Research Roadmap
5	Finalize the Research Roadmap

KEY WORDS/TERMS

Word/Term	Definition
CAM	Commission Agreement Manager, the person designated by the Energy Commission to oversee the performance of a contract and to serve as the main point of contact for the Recipient
CAO	Commission Agreement Officer
Contractor	Awardee who will perform the tasks specified in this Scope of Work under the direction of the Energy Commission's Agreement Manager
CPUC	California Public Utilities Commission
DVBE	Disabled Veteran Business Enterprise
EPIC	Electric Program Investment Charge, the source of funding for this Contract
Energy Commission	California Energy Commission
IOU	Investor-Owned Utility, including Pacific Gas and Electric Co., San Diego Gas and Electric Co., and Southern California Edison Co.
Project Manager	The person designated by the contractor to oversee the project and to serve as the main point of contact for the Energy Commission
Research Roadmap	Research Roadmap for Advancing Technologies in California's Industrial, Agricultural, and Water Sectors
Recipient	The recipient of this Contract
RDD&D	Research, Development, Demonstration and Deployment
State	State of California
TAC	Technical Advisory Committee

BACKGROUND/PROBLEM STATEMENT

California's industrial, agriculture, and water sectors use nearly 30 percent of all energy consumed in the state. These sectors are vital to California's economy, yet each sector faces special energy-related challenges.

Exhibit A Scope of Work

- Industry must keep operating costs low, while maintaining environmentally clean and energy-efficient operations. Data centers have special needs for electricity reliability.
- Agriculture is highly dependent on electricity and natural gas for irrigation and post-harvest food processing. This sector can benefit from advanced irrigation and processing techniques for water conservation, water re-use, and heat recovery.
- The water and wastewater sectors vary in energy intensity across the state, with varying availability of local surface and groundwater resources, pumping needed for conveyance of water across long distances, and energy needs for water treatment, and reclamation.

Senate Bill 96 (2013) directs the Energy Commission to award Electric Program Investment Charge (EPIC) funds for projects that will benefit electricity ratepayers and lead to technological advancement and breakthroughs to overcome the barriers that prevent achieving the state's statutory energy goals. To help ensure that EPIC funds are strategically focused and sufficiently narrow to make advancement on the most significant technological challenges, new analysis is needed that identifies and prioritizes Research, Development, Demonstration and Deployment (RDD&D) gaps for advancing energy technologies and strategies that can benefit electric ratepayers through innovation in the agriculture, industrial, and water sectors.

RATEPAYER BENEFITS, TECHNOLOGICAL ADVANCEMENTS, AND BREAKTHROUGHS

California Public Resources Code Section 25711.5(a) requires EPIC-funded projects to:

- Benefit electricity ratepayers; and
- Lead to technological advancement and breakthroughs to overcome the barriers that prevent the achievement of the state's statutory energy goals.

The California Public Utilities Commission (CPUC) defines "ratepayer benefits" as greater reliability, lower costs, and increased safety.¹ The CPUC has also adopted the following guiding principles as complements to the key principle of electricity ratepayer benefits: societal benefits; greenhouse gas emissions mitigation and adaptation in the electricity sector at the lowest possible cost; the loading order; low-emission vehicles/transportation; economic development; and efficient use of ratepayer monies.²

This contract will fund research to develop analysis on the most critical RDD&D gaps that need to be addressed to achieve California's goals for advancing technologies in the industrial, agricultural, and water sectors in Investor-Owned Utility (IOU) service territories. Results of the analyses will be used to strategically target future EPIC investments in a manner that provides optimal benefits to IOU electric ratepayers, and maximizes the use of public research and development investments.

The contract will: (1) benefit California IOU ratepayers by increasing reliability, lowering costs, and/or increasing safety; and (2) lead to technological advancement and breakthroughs to overcome barriers to achieving the state's statutory energy goals.

¹ CPUC "Phase 2" Decision 12-05-037 at page 19,
http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/167664.PDF.

² *Id.* at pp. 19-20.

Exhibit A Scope of Work

Goals and Objectives of the Agreement

The goal of this agreement is to develop, in consultation with stakeholders and subject matter experts, a technical assessment and research roadmap that identifies, describes and prioritizes key RDD&D needs for achieving the state's goals for advancing technologies in the industrial, agricultural, and water sectors. This research roadmap will outline how these technologies will be implemented in a safe, equitable, and cost-beneficial manner. Specifically, the research roadmap must synthesize the input of stakeholders and experts in order to:

1. Prioritize research most needed to advance specific technologies and strategies that benefit electric ratepayers in the industrial, agricultural, and water sector.
2. Provide a detailed description of barriers.
3. Identify performance and cost targets for promising technologies.
4. Develop critical indicators of success.

Topics to be covered in the *Research Roadmap for Advancing Technologies in California's Industrial, Agricultural, and Water Sectors* (Research Roadmap) include, but are not limited to, the following:

- California specific energy intensive Industrial sector energy and water efficiency for the following sectors:
 - Data centers.
 - Industrial demand response.
 - Primary and fabricated metal.
 - Glass and cement.
 - Oil and gas extraction and refining.
 - Plastics and rubber.
 - Chemical.
 - Paper.
 - Operational capacity for industrial buildings, including advanced technology training and industrial maintenance.
- Agricultural sector energy and water efficiency.
 - Food processing, beverage, and dairy.
- Water and wastewater sector energy efficiency.
- Bioenergy
 - Interconnection.
 - Anaerobic digesters.
 - Woody biomass facilities, supporting efforts to advance sustainability standards for harvesting biomass in forestry and agricultural settings.
 - Gasification technologies.

Exhibit A Scope of Work

- Advanced distributed generation (DG) and combined heat and power (CHP) related to industrial, agricultural, and water sectors.
- Planning and permitting of anaerobic bioenergy facilities.

The Contractor will perform the tasks specified in this Scope of Work under the direction of the Energy Commission's Agreement Manager (CAM). The CAM will oversee the management and administration of the contract.

FORMAT/REPORTING REQUIREMENTS

Deliverables/Reports

When creating reports, the Contractor shall use and follow, unless otherwise instructed in writing by the CAM, the latest version of the Consultant Reports Style Manual published on the Energy Commission's web site:

http://www.energy.ca.gov/contracts/consultant_reports/index.html

Electronic File Format

The Contractor shall deliver an electronic copy (CD ROM or memory stick or as otherwise specified by the CAM) of the final Roadmap in a compatible version of Microsoft Word (.doc).

The following describes the accepted formats of electronic data and documents provided to the Energy Commission as contract deliverables and establishes the computer platforms, operating systems and software versions that will be required to review and approve all software deliverables.

- Data sets shall be in Microsoft (MS) Access or MS Excel file format.
- PC-based text documents shall be in MS Word file format.
- Documents intended for public distribution shall be in PDF file format, with the native file format provided as well.
- Project management documents shall be in MS Project file format.

Task 1 – Contract Management

The Contractor shall manage a team capable of undertaking all work assignments identified in this Scope of Work. Final assignment of tasks and maximum payment for individual projects will be described in the Contract.

All project work performed by the Contractor team shall be directed by and coordinated with Energy Commission staff as designated by the CAM. Work performed by the Contractor or its subcontractors beyond the term end date of the contract will not be reimbursed for payment.

Task 1.1 Kick-off Meeting

The goal of this subtask is to establish the lines of communication and procedures for implementing this Contract. The meeting will be held in Sacramento, CA and the CAM will designate the specific location, or via Web-Ex or teleconference. The administrative and technical aspects of this Contract will be discussed at the meeting.

Exhibit A Scope of Work

The administrative portion of the meeting will include discussion of the following:

- Terms and conditions of the Contract
- Administrative deliverables
- Project meetings and briefings
- Permit documentation (if applicable)
- Subcontracts and
- Any other relevant topics.

The technical portion of the meeting will include discussion of the following:

- The CAM's expectations for accomplishing tasks described in the Scope of Work;
- An updated Project Schedule
- Technical deliverables
- Progress reports and invoices
- Final Report
- Technical Advisory Committee meetings and
- Any other relevant topics.

The Contractor shall:

- Attend a "kick-off" meeting with the CAM, the Commission Agreement Officer (CAO), and a representative of the Accounting Office.
 - The meeting will be held in Sacramento, CA, or via Web-Ex or teleconference. The Contractor shall include their Project Manager, Contracts Administrator, Accounting Officer, and others designated by the CAM in this meeting. The administrative and technical aspects of this Contract will be discussed at the meeting.
- If necessary, prepare an updated *Schedule of Deliverables* based on the decisions made in the kick-off meeting.

The CAM shall:

- Arrange the meeting including scheduling the date and time.
- Provide a Kick-off Meeting Agenda to all potential meeting participants prior to the kick-off meeting.

Contractor Deliverables:

- Updated Schedule of Deliverables (if applicable)

CAM Deliverables:

- Kick-Off Meeting Agenda

Exhibit A Scope of Work

Task 1.2 Invoices

The goal of this subtask is to ensure that invoices contain all required information and are submitted in the appropriate format.

The Contractor shall:

- Prepare *Quarterly Invoices* for all reimbursable expenses incurred performing work under this Contract. The *Quarterly Invoices* must only invoice for activities in compliance with Exhibit B of the Terms and Conditions of the Contract. The *Quarterly Invoices* must be in the correct format as provided in a Quarterly Invoice Template by the CAM.
- In addition, each invoice must document and verify:
 - Energy Commission funds received by California-based entities
 - Energy Commission funds spent in California (if applicable)
- Invoices shall be submitted with the same frequency as progress reports (task 1.3). Invoices must be submitted to the Energy Commission's Accounting Office.

Contractor Deliverables:

- Quarterly Invoices

CAM Deliverables:

- Quarterly Invoice Template

Task 1.3 Quarterly Progress Reports

The goal of this task is to periodically verify that satisfactory and continued progress is made towards achieving the objectives of this Contract.

The Contractor shall:

- Prepare *Quarterly Progress Reports* that summarize all Contract activities conducted by the Contractor and any subcontractors for the reporting period, including an assessment of the ability to complete the Contract within the current budget and any anticipated cost overruns. Each progress report is due within 15 calendar days after the end of the reporting period. The CAM will provide the format for the progress reports in a *Quarterly Progress Report Format Template*.

Contractor Deliverables:

- Quarterly Progress Reports

CAM Deliverables:

- Quarterly Progress Report Format Template

Task 1.4 Manage Subcontractors

The goal of this subtask is to ensure quality products, to enforce subcontractor Contract provisions, and in the event of failure of the subcontractor to satisfactorily perform services, recommend solutions to resolve the problem.

Exhibit A Scope of Work

The Contractor shall:

- Manage and coordinate subcontractor activities. The Contractor is responsible for the quality of all subcontractor work and the Energy Commission will assign all work to the Contractor. If the Contractor decides to add new subcontractors, the Contractor shall 1) comply with the Terms and Conditions of the Contract, and 2) submit *Written Notification to the CAM of Subcontractor Change*
- Prepare and submit a *Draft Subcontractor Conflict of Interest Policy* to ensure that no conflicts of interest exist between subcontractors and subawardees.
- Prepare and submit a *Final Subcontractor Conflict of Interest Policy* incorporating CAM comments.

Contractor Deliverables:

- Written notification to CAM of Subcontractor Change.
- Subcontractor Conflict of Interest Policy (Draft and Final)

CAM Deliverables:

- Comments on Draft Subcontractor Conflict of Interest Policy

Task 1.5 Project Meetings and Briefings

The goal of this subtask is to determine whether any modifications must be made to the tasks, products, schedule, or budget. Project meetings provide the opportunity for frank discussions between the Energy Commission and the Contractor. As determined by the CAM, discussions may include project status, challenges, successes, findings, project goals and benefits, recommendations, and final report preparation. Participants will include the CAM and the Contractor, and may include the CAO and any other individuals selected by the CAM to provide support to the Energy Commission.

The Contractor shall:

- Attend or participate in program support and project-related meetings or discussions in person or via WebEx or conference call, as requested by the CAM.
- Submit *Responses* to e-mails or other written communication requests regarding project management status and issues, as requested by the CAM.
- Prepare *Meeting Notes* for each Project Meeting that: (1) discusses the progress of the Contract toward achieving its goals and objectives; and (2) includes recommendations and conclusions regarding continued work on the project, as requested by the CAM.
- Submit the *Meeting Notes* to the CAM for review and approval.

Deliverables:

- Responses to written requests on project status.
- Meeting Notes for each formal meeting.

Task 1.6 Technical Advisory Committee (TAC)

The goal of this subtask is to create an advisory committee for this Contract. The TAC should be composed of diverse professionals in the industrial, agricultural, and water sectors. The composition will vary depending on interest, availability, and need. TAC members will serve at the CAM's discretion. The purpose of the TAC is to:

Exhibit A Scope of Work

- Provide guidance in project direction. The guidance may include scope and methodologies, timing, and coordination with other projects. The guidance may be based on:
 - Technical area expertise;
 - Knowledge of market applications; or
 - Linkages between the Contract work and other past, present, or future projects (both public and private sectors) that TAC members are aware of in a particular area.
- Review products and provide recommendations for needed product adjustments, refinements, or enhancements.
- Evaluate the tangible benefits of the project to the State of California, and provide recommendations as needed to enhance the benefits.

The TAC shall be composed of qualified professionals with expertise which may span the following types of disciplines:

- Researchers knowledgeable about the project subject matter;
- Members of trades that will apply the results of the project (e.g., designers, engineers, architects, contractors, and trade representatives);
- Product developers relevant to the project;
- Members of relevant technical society committees.

The Contractor shall:

- Prepare a *List of Potential TAC Members* that includes the names, companies, physical and electronic addresses, and phone numbers of potential members. The list will be discussed at the Kick-off meeting, and a schedule for recruiting members and holding the first TAC meeting will be developed.
- Recruit TAC members. Ensure that each individual understands member obligations and the TAC meeting schedule developed in subtask 1.7.
- Prepare a *List of TAC Members* once all TAC members have committed to serving on the TAC.
- Submit *Documentation of TAC Member Commitment* (such as Letters of Acceptance) from each TAC member to the CAM.

Deliverables:

- List of Potential TAC Members
- List of TAC Members
- Documentation of TAC Member Commitment

Task 1.7 TAC Meetings

The goal of this subtask is for the TAC to provide strategic guidance for the project by participating in regular meetings, which may be held in person or via teleconference.

Exhibit A Scope of Work

The Contractor shall:

- Discuss the *TAC Meeting Schedule* with the CAM at the Kick-off meeting. Determine the number and location of meetings (in-person and via teleconference) in consultation with the CAM.

prepare a *TAC Meeting Schedule* that will be presented to the TAC members during recruiting. Revise the schedule after the first TAC meeting to incorporate meeting comments.

- Prepare a *TAC Meeting Agenda* and *TAC Meeting Back-up Materials* for each TAC meeting.
- Organize and lead TAC meetings in accordance with the TAC Meeting Schedule. Changes to the schedule must be pre-approved in writing by the CAM.
- Prepare *TAC Meeting Summaries* that include any recommended resolutions of major TAC issues.

Deliverables:

- TAC Meeting Schedule (draft and final)
- TAC Meeting Agendas (draft and final)
- TAC Meeting Back-up Materials
- TAC Meeting Summaries

Task 1.8 Final Report

The goal of this subtask is to prepare a written Final Report. The Final Report shall be prepared in language easily understood by the public or layperson with a limited technical background.

The Final Report must be completed before the termination date of the Contract in accordance with the Schedule of Deliverables.

The Final Report shall be a public document. If the Contractor's work on all or part of this project has obtained confidential status from the Energy Commission, then the Contractor must prepare both a public and a confidential version of the Final Report, and the Contractor shall perform the following subtasks for both the public and confidential versions of the Final Report. When creating the Final Report, the Recipient must use a Style Manual provided by the CAM.

Task 1.8.1 Final Report Outline

The Contractor shall:

- Prepare and Submit the *Draft Outline of the Final Report* to the CAM for review and approval. The CAM will provide Written Comments on the Draft Outline of the Final Report to the Contractor on the draft outline. The Contractor shall review the comments and discuss any concerns regarding the recommended changes with the CAM.
- Prepare and submit the *Final Outline of the Final Report*, incorporating the CAM's comments.

Contractor Deliverables:

- Outline of the Final Report (Draft and Final)

CAM Deliverables:

- Written Comments on the Draft Outline of the Final Report

Exhibit A Scope of Work

Task 1.8.2 Final Report

The Contractor shall:

- Prepare and Submit the *Draft Final Report* in accordance with the approved Final Report Outline for review and comment. The CAM will provide Written Comments on Draft Final Report to the Contractor. The Contractor shall review the comments and discuss any issues with the recommended changes with the CAM.
- Prepare and submit the *Final Report*, incorporating CAM comments.

Contractor Deliverables:

- Draft Final Report
- Final Report

CAM Deliverables:

- Written Comments on Draft Final Report

Task 1.9 Final Meeting

The goal of this subtask is to discuss closeout of this Contract and review the project. The meeting will be held in Sacramento, CA and the CAM will designate the specific location, or via Web-Ex or teleconference. The administrative and technical aspects of Contract closeout will be discussed at the meeting.

The Contractor shall:

- Meet with Energy Commission staff prior to the term end-date of this Contract. This meeting will be attended by the Contractor Project Manager and the CAM. The CAM will determine any additional appropriate meeting participants.
- Present findings, conclusions, and recommended next steps (if any) for the Contract, based on the information included in the Final Report.
- Prepare a *Written Document of Meeting Agreements and Unresolved Activities*.
- Prepare a *Schedule for Completing the Closeout Activities* for this Contract, based on determinations made during the meeting.
- Provide ALL Draft and Final written deliverables provided under this Contract on a CD-ROM or USB memory stick, organized by the tasks in the Contract.

Deliverables:

- Written Documentation of Meeting Agreements and Unresolved Activities
- Schedule for Completing Closeout Activities
- CD-ROM or USB memory stick containing ALL draft and final written deliverables provided under this Contract, organized by task

Exhibit A Scope of Work

Task 1.10 Match Funds (If applicable)

The goal of this subtask is to ensure that the Contractor obtains any match funds planned for this Contract and applies them to the Contract during the Contract term.

While the costs to obtain and document match funds are not reimbursable under this Contract, the Contractor may spend match funds for this task. The Contractor may only spend match funds during the Contract term, either concurrently or prior to the use of Energy Commission funds. Match funds must be identified in writing, and the Contractor must obtain any associated commitments before incurring any costs for which the Contractor will request reimbursement.

The Contractor shall:

- If match funds were a part of the proposal that led to the Energy Commission awarding this Contract, prepare a *Match Funds Status Letter* that documents the match funds committed to this Contract and includes:
 - A list of the match funds that identifies:
 - The amount of cash match funds, their source(s) (including a contact name, address, and telephone number), and the task(s) to which the match funds will be applied.
 - The amount of each in-kind contribution, a description of the contribution type (e.g., property, services), the documented market or book value, the 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 Contractor must identify its owner and provide a contact name, address, telephone number, and the address where the property is located.
 - A copy of a letter of commitment from an authorized representative of each source of match funding that the funds or contributions have been secured.
- At the Kick-off meeting, discuss match funds and the impact on the project if they are significantly reduced or not obtained as committed. If applicable, match funds will be included as a line item in the progress reports and will be a topic at project meetings and briefings.
- Provide a *Supplemental Match Funds Notification Letter* to the CAM if receipt of additional match funds is obtained.
- Provide a *Match Funds Reduction Notification Letter* to the CAM if existing match funds are reduced during the course of the contract. Reduction of match funds may trigger a project meeting.

Deliverables:

- Match Funds Status Letter
- Supplemental Match Funds Notification Letter (if applicable)

Exhibit A Scope of Work

Technical Tasks

Task 2 - Technical Assessment of Industrial, Agricultural, and Water Sector Technologies and Strategies

The goal of this task is to develop a technical assessment of the current baseline and best in class industrial, agricultural, and water sector technologies and strategies, including cost and performance attributes.

Note: For workshops and stakeholder meetings, contractor will provide workshop preparation including materials and workshop facilitation. The Energy Commission is responsible to pay for any costs associated to the workshop, including but not limited to printing, room rental and equipment rental/ purchase.

The Contractor shall:

- Prepare and submit a *Draft Literature Review* of peer reviewed technical journals, government reports, trade journals' performance specifications of technology used in current advanced industrial, agricultural, water sector projects, and other relevant, high-quality sources. Include references for all sources.
- Prepare and submit a *Final Literature Review*, incorporating CAM comments.
- Using information from the *Final Literature Review*, prepare and submit a *Draft List of Experts to Interview* regarding currently feasible energy demand targets and energy use intensity targets for California climate zones; cost and performance attributes of specific technologies and strategies for achieving state energy goals for the industrial, agricultural, and water sectors; and other critical indicators of success. The CAM will provide written comments to the Contractor on the Draft List of Experts to Interview.
- Using information from the literature review, prepare and submit a *Draft List of Interview Questions* to use when interviewing experts on topics listed above to the CAM for review and approval. The CAM will provide written comments to the Contractor on the Draft List of Interview Questions.
- Submit the *Final List of Experts to Interview* and *Final List of Interview Questions*, incorporating the CAM's comments.
- Conduct interviews with experts regarding advancing best in class technologies and strategies in the industrial, agricultural, and water sectors technologies, including currently feasible energy demand targets and energy use intensity targets for California climate zones; cost and performance attributes of specific industrial, agricultural, and water sector technologies; and other critical indicators of success.
- Using information from the literature review and expert interviews, prepare and submit a *Draft Outline of the Technical Assessment* to the CAM for review and approval. The CAM will provide written comments to the Contractor. The Contractor shall review the comments and discuss any concerns regarding the recommended changes with the CAM.

Exhibit A Scope of Work

- Submit the *Final Outline of the Technical Assessment*, incorporating the CAM's comments.
- Submit the *Draft Technical Assessment of Industrial, Agricultural, and Water Sector Technologies and Strategies* for review and comment. The CAM will provide written comments to the Contractor. The Contractor shall review the comments and discuss any concerns regarding the recommended changes with the CAM.
- Submit the *Final Technical Assessment of Industrial, Agricultural, and Water Sector Technologies and Strategies*, incorporating the CAM's comments.

Contractor Deliverables:

- Literature Review (Draft and Final).
- List of Experts to Interview (Draft and Final).
- List of Interview Questions (Draft and Final).
- Outline of the Technical Assessment (Draft and Final).
- Technical Assessment of Industrial, Agricultural, and Water Sector Technologies and Strategies (Draft and Final).

CAM Deliverables:

- Written Comments on Draft Literature Review
- Written Comments on Draft List of Experts to Interview
- Written Comments on Draft List of Interview Questions
- Written Comments on Draft Outline of the Technical Assessment
- Written Comments on Draft Technical Assessment of Industrial, Agricultural, and Water Sector Technologies and Strategies

Task 3 - Finalize Methodology for Developing the Research Roadmap

The goal of this task is to finalize the methodology for developing the Research Roadmap for Advancing Technologies in California's Industrial, Agricultural, and Water Sectors (Research Roadmap). The Contractor shall finalize the *Research Roadmap Methodology* based on comments from Energy Commission staff on the draft methodology submitted in the proposal and the Technical Assessment to be prepared in Task 2.

The methodology should describe at a minimum:

- Proposed topics to be covered in the Research Roadmap.
- The Contractor's proposed approach to:
 - Incorporate information from the Technical Assessment to be prepared in Task 2 into the Research Roadmap.
 - Coordinate and collaborate with Energy Commission staff, including periodic check-in points with the CAM at key milestones and decision-points in the development of the Research Roadmap.
 - Solicit input from experts and stakeholders on RDD&D gaps and needs for key topics in the Research Roadmap.

Exhibit A Scope of Work

- Identify and prioritize the most important RDD&D gaps.
- Identify and recruit experts and stakeholders to participate in topic specific workshops.
- Coordinate with Energy Commission staff to identify and select venue(s) for topic specific workshops (including plans for recording and creating detailed workshop transcripts).
- Create all necessary presentation materials and hand-outs for workshop attendees.
- Coordinate with Energy Commission staff on handling logistics for scheduling, setting up and facilitating workshop(s) to solicit input from experts and stakeholders on RDD&D gaps and needs for key topics in the Research Roadmap.

The Contractor shall:

- Meet with the CAM, and others invited by the CAM, to discuss finalizing the Draft Methodology for Developing the Research Roadmap. This strategy meeting shall take place within ten (10) business days after the Kick-Off Meeting. This strategy meeting will be held at the Energy Commission.
- Prepare and submit a Summary of Comments received at the strategy meeting.
- Prepare and Submit a Final Methodology for Developing the Research Roadmap by incorporating feedback from CAM and Energy Commission staff.

Deliverables:

- Research Roadmap Methodology (Draft and Final).
- Summary of Comments.

Task 4 - Develop the Research Roadmap

The goal of this task is to develop the Research Roadmap in accordance with methodology finalized in Task 3. When creating the Research Roadmap, the Contractor must use a Style Manual provided by the CAM. The Research Roadmap must include but may not be limited to the following:

- A detailed description of barriers the state must address on its path to improving industrial, agricultural, and water sector energy efficiency.
- Summary analysis of past and current research efforts and results around key topics identified in the Research Roadmap.
- Description of RDD&D gaps and recommended and prioritized RDD&D activities for each topic needed to achieve state energy and climate policies in goals, including:
 - Technical performance and cost targets for promising technologies.
 - Critical indicators of success.
 - Sequencing and prioritization of recommended RDD&D activities.
 - Estimated funding amounts.
 - Coordination and timing with other activities and programs.
- Description of the Methodology used in developing the research roadmap. This should include a list of experts and stakeholders, including their organization and area of expertise, consulted during the development of the research roadmap.

Exhibit A Scope of Work

The Contractor shall:

Conduct the following activities in accordance with the Final Research Roadmap Methodology finalized in Task 3:

- Incorporate information from the Technical Assessment to be prepared in Task 2 into the Research Roadmap.
- Coordinate and collaborate with Energy Commission staff, including periodic check-in points with the CAM at key milestones and decision-points in the development of the Research Roadmap.
- Solicit input from experts and stakeholders on RDD&D gaps and needs for key topics in the research roadmap.
- Identify and prioritize the most important RDD&D gaps.
- Identify and recruit experts and stakeholders to participate in topic specific workshops
- Coordinate with Energy Commission staff to identify and select venue(s) for topic specific workshops (including plans for recording and creating detailed workshop transcripts)
- Create all necessary *Workshop Presentation Materials* and hand-outs for workshop attendees
- Coordinate with Energy Commission staff on handling logistics for scheduling, setting up and facilitating workshop(s) to solicit input from experts and stakeholders on RDD&D gaps and needs for key topics in the Research Roadmap.
- Prepare and submit a *Draft Public Workshop Agenda* to the CAM for review and comment. The CAM will provide written comments to the Contractor.
- Prepare and submit a *Final Public Workshop Agenda*, incorporating CAM comments.
- Conduct the public workshop in accordance to the *Final Public Workshop Agenda* to solicit stakeholder comments on the Research Roadmap themes.
- Prepare and submit a *Summary of All Interviews and Questionnaires* conducted with subject matter experts and industry stakeholders as part of the Research Roadmap development.
- Prepare and Submit a *Summary of All Workshop Outcomes and Presentations*.
- Prepare and submit the *Draft Outline of the Research Roadmap* to the CAM for review and comment. The CAM will provide written comments to the Contractor on the *Draft Outline of the Research Roadmap*. The Contractor shall review the comments and discuss any concerns regarding the recommended changes with the CAM.
- Prepare and submit the *Final Outline of the Research Roadmap*, incorporating the CAM's comments.
- Prepare and submit the *Draft Research Roadmap* for review and comment. The CAM will provide written comments to the Contractor. The Contractor shall review the comments and discuss any issues with the recommended changes with the CAM.

Exhibit A Scope of Work

Contractor Deliverables:

- Workshop Presentation Materials
- Public Workshop Agendas (Draft and Final)
- Summary of All Interviews and Questionnaires
- Summary of All Workshop Outcomes and Presentations
- Outline of the Research Roadmap (Draft and Final)
- Research Roadmap (Draft)

CAM Deliverables:

- Written Comments on Public Workshop Agendas
- Written Comments on Outline of the Research Roadmap
- Written Comments on the Research Roadmap

Task 5 - Finalize the Research Roadmap

The goal of this task is to finalize the Research Roadmap in accordance with the Research Roadmap Methodology finalized in Task 3. The Research Roadmap shall be written in a format that is beneficial for both technical experts and a more general audience, including visual aids to outline priority research areas. The Research Roadmap shall include an executive summary that summarizes findings. The Research Roadmap shall also include a discussion of how estimates regarding customer adoption and technology development were concluded.

The Contractor shall:

- Prepare and submit the *Final Research Roadmap*, incorporating CAM comments.
- Prepare and submit a *Bibliography* of all relevant sources and materials used in preparation of the Research Roadmap.
- Prepare and submit all *Analytical Data* used to prepare the estimates included in the Research Roadmap.
- Coordinate with CAM on handling logistics for scheduling, setting up and facilitating workshop(s) to solicit input on Research Roadmap.
- Conduct, with approval from CAM, a public workshop to solicit stakeholder comments on the Research Roadmap and compile *Public Workshop Meeting Minutes*.

Deliverables:

- Final Research Roadmap.
- Bibliography.
- Analytical Data.
- Public Workshop Meeting Minutes.

Exhibit A
Scope of Work

Schedule of Deliverables and Due Dates

Task	Deliverable	Due Date
1	<u>Contract Management</u>	
1.1	Contractor Deliverables: <ul style="list-style-type: none"> • Updated schedule of deliverables (if applicable). CAM Deliverables <ul style="list-style-type: none"> • Kick-off Meeting Agenda 	<ul style="list-style-type: none"> • 1 week following the Kick-off meeting. • At least 24 hours prior to the Kick-off meeting
1.2	Contractor Deliverables: <ul style="list-style-type: none"> • Quarterly Invoices CAM Deliverables: <ul style="list-style-type: none"> • Quarterly Invoice Template 	<ul style="list-style-type: none"> • Quarterly with Progress Reports • At least 2 weeks prior to the first Quarterly Invoice
1.3	Contractor Deliverables: <ul style="list-style-type: none"> • Quarterly Progress Reports CAM Deliverables: <ul style="list-style-type: none"> • Quarterly Progress Report Format Template 	<ul style="list-style-type: none"> • Quarterly with Invoices • At least 2 weeks prior to the first Quarterly Invoice
1.4	Contractor Deliverables: <ul style="list-style-type: none"> • Written notification to CAM of subcontractor change. • Draft Subcontractor Conflict of Interest Policy • Final Subcontractor Conflict of Interest Policy CAM Deliverables: <ul style="list-style-type: none"> • Comments on Draft Subcontractor Conflict of Interest Policy 	<ul style="list-style-type: none"> • TBD • 2 weeks prior to the Kick-off Meeting • At the Kick-off Meeting • 1 week prior to the Kick-off Meeting
1.5	<ul style="list-style-type: none"> • Responses to written requests on project status. • Meeting notes for each formal meeting. 	<ul style="list-style-type: none"> • As requested by CAM • 1 week after each formal meeting
1.6	<ul style="list-style-type: none"> • List of Potential TAC Members • List of TAC Members • Documentation of TAC Member Commitment 	<ul style="list-style-type: none"> • At the Kick-off meeting. • 2 weeks following the Kick-off meeting. • 4 weeks following the Kick-off meeting.

**Exhibit A
Scope of Work**

1.7	<ul style="list-style-type: none"> • TAC Meeting Schedule (draft and final) • TAC Meeting Agendas (draft and final) • TAC Meeting Back-up Materials • TAC Meeting Summaries 	TBD
1.8.1	<p>Contractor Deliverables:</p> <ul style="list-style-type: none"> • Draft outline of the Final Report. • Final outline of Final Report. <p>CAM Deliverables:</p> <ul style="list-style-type: none"> • Written Comments on the Draft Outline of the Final Report 	<ul style="list-style-type: none"> • 6 months prior to contract end-date. • 2 days following receipt of CAM approval.
1.8.2	<p>Contractor Deliverables:</p> <ul style="list-style-type: none"> • Draft Final Report. • Final Report. <p>CAM Deliverables:</p> <ul style="list-style-type: none"> • Written Comments on Draft Final Report 	<ul style="list-style-type: none"> • 4 months prior to contract end-date. • 2 months prior to contract end-date.
1.9	<ul style="list-style-type: none"> • Written Documentation of Meeting Agreements and Unresolved Activities • Schedule for completing closeout activities. • CD-ROM or USB memory stick containing ALL draft and final written deliverables provided under this Contract, organized by task. 	<ul style="list-style-type: none"> • 8 months prior to contract end-date. • 6 months prior to contract end-date. • 2 months prior to contract end-date.
1.10	<ul style="list-style-type: none"> • Match Funds Status Letter • Supplemental Match Funds Notification Letter (if applicable) 	TBD
2	<u>Technical Assessment of Industrial, Agricultural, and Water Sector Technologies and Strategies</u>	
	<p>Contractor Deliverables:</p> <ul style="list-style-type: none"> • Draft Literature Review • Final Literature Review • Draft List of Experts to Interview • Final List of Experts to Interview • Draft List of Interview Questions • Final List of Interview Questions • Draft Outline of Technical Assessment • Final Outline of Technical Assessment • Draft Technical Assessment • Final Technical Assessment 	<ul style="list-style-type: none"> • Within 3 Months of the Kick-off Meeting • Within 2 weeks of receiving comments • Within 3 Months of the Kick-off Meeting • Within 2 weeks of receiving comments • Within 1 week from the submission of the Final Literature Review

**Exhibit A
Scope of Work**

	<p>CAM Deliverables:</p> <ul style="list-style-type: none"> • Written Comments on Draft Literature Review • Written Comments on Draft List of Experts to Interview • Written Comments on Draft List of Interview Questions • Written Comments on Draft Outline of the Technical Assessment • Written Comments on Draft Technical Assessment of Industrial, Agricultural, and Water Sector Technologies and Strategies 	<ul style="list-style-type: none"> • 1 week after receiving comments • TBD • TBD • 2 weeks after submission of Draft Literature Review • 1 week after submission of Draft List of Experts to Interview • TBD • TBD
3	<u>Finalize Methodology for Developing the Research Roadmap</u>	
	<ul style="list-style-type: none"> • Draft Research Roadmap Methodology • Summary of comments • Final Research Roadmap Methodology 	<ul style="list-style-type: none"> • 2 weeks after Kickoff meeting. • TBD • 4 weeks after Kickoff meeting.
4	<u>Develop the Research Roadmap</u>	
	<p>Contractor Deliverables:</p> <ul style="list-style-type: none"> • Workshop Presentation Materials • Draft Public Workshop Agendas • Summary of All Interviews and Questionnaires • Summary of All Workshop Outcomes and Presentations • Draft Outline of the Research Roadmap • Final Outline of the Research Roadmap • Draft of Research Roadmap <p>CAM Deliverables:</p> <ul style="list-style-type: none"> • Written Comments on Public Workshop Agendas • Written Comments on Outline of the Research Roadmap • Written Comments on the Research Roadmap 	<ul style="list-style-type: none"> • 1 week prior to each workshop • 1 week prior to each workshop • TBD • TBD • 9 months prior to the end of the contract • 1 week after receiving CAM comments • 1 month after submission of the Final Outline of the Research Roadmap • TBD • 2 weeks after submission of the Draft Outline of the Research Roadmap • 1 month after submission of the Draft Research Roadmap
5	<u>Finalize the Research Roadmap</u>	
	<ul style="list-style-type: none"> • Final Research Roadmap • Bibliography • Analytical Data • Public Workshop Meeting Minutes 	<ul style="list-style-type: none"> • January 2018 • January 2018 • January 2018 • March 2018

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION - RE: ENERGETICS INCORPORATED

RESOLVED, that the State Energy Resources Conservation and Development Commission (Energy Commission) adopts the staff CEQA findings contained in the Agreement or Amendment Request Form (as applicable); and

RESOLVED, that the Energy Commission approves Agreement 300-15-010 from RFP-15-316 with Energetics Incorporated for a \$648,716 contract to produce a research roadmap that will strategically frame the project priorities, partnerships and milestones that EPIC can use to accelerate RD&D progress in meeting the critical needs and expectations of utilities, ratepayers and customers in the industrial, agricultural and water (IAW) sectors; and

FURTHER BE IT RESOLVED, that the Executive Director or his/her designee shall execute the same 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 17, 2016.

AYE: [List of Commissioners]

NAY: [List of Commissioners]

ABSENT: [List of Commissioners]

ABSTAIN: [List of Commissioners]

Cody Goldthrite,
Secretariat