

CONTRACT REQUEST FORM (CRF)

CEC-94 (Revised 01/13)

CALIFORNIA ENERGY COMMISSION

A) New Agreement 600-15-006 (To be completed by CGL Office)

B) Division	Agreement Manager:	MS-	Phone
600 Fuels and Transportation Division	Eric VanWinkle	27	916-651-1235

C) Contractor's Legal Name	Federal ID Number
South Coast Air Quality Management District	95-3099419

D) Title of Project
Zero Emission Cargo Transport (ZECT) Demonstration

E) Term and Amount	Start Date	End Date	Amount
	09 / 10 / 2015	03 / 31 / 2019	\$ 2,400,000

F) Business Meeting Information			
<input type="checkbox"/> Operational agreement (see CAM Manual for list) to be approved by Executive Director			
<input type="checkbox"/> ARFVTP agreements under \$75K delegated to Executive Director.			
Proposed Business Meeting Date	08 / 12 / 2015	<input type="checkbox"/> Consent	<input checked="" type="checkbox"/> Discussion
Business Meeting Presenter	Eric VanWinkle	Time Needed:	5 minutes
Please select one list serve. Altfuels (AB118- ARFVTP)			

Agenda Item Subject and Description
Proposed resolution approving Agreement 600-15-006 with South Coast Air Quality Management District for a \$2,400,000 contract to demonstrate a zero emission fuel cell electric hybrid Class 8 cargo transport vehicle in the San Pedro Bay Ports.

G) California Environmental Quality Act (CEQA) Compliance
1. Is Agreement considered a "Project" under CEQA? <input type="checkbox"/> Yes (skip to question 2) <input checked="" type="checkbox"/> No (complete the following (PRC 21065 and 14 CCR 15378)): Explain why Agreement is not considered a "Project": Agreement will not cause direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment because it is a zero emission vehicle demonstration program that will not alter or affect the physical environment.
2. If Agreement is considered a "Project" under CEQA: <input type="checkbox"/> a) Agreement IS exempt. (Attach draft NOE) <input type="checkbox"/> Statutory Exemption. List PRC and/or CCR section number: _____ <input type="checkbox"/> Categorical Exemption. List CCR section number: _____ <input type="checkbox"/> Common Sense Exemption. 14 CCR 15061 (b) (3) Explain reason why Agreement is exempt under the above section: <input type="checkbox"/> b) Agreement IS NOT exempt. (Consult with the legal office to determine next steps.) Check all that apply <input type="checkbox"/> Initial Study <input type="checkbox"/> Environmental Impact Report <input type="checkbox"/> Negative Declaration <input type="checkbox"/> Statement of Overriding Considerations <input type="checkbox"/> Mitigated Negative Declaration

H) List all subcontractors (major and minor) and equipment vendors: (attach additional sheets as necessary)				
Legal Company Name:	Budget	SB	MB	DVBE
Center for Transportation and the Environment (CTE)	\$ 353,942	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
BAE Systems	\$ 295,307	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
see attachment for other subcontractors	\$	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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
Funding Source			\$
R&D Program Area:	N/A	TOTAL:	\$ 0
Explanation for "Other" selection			
Reimbursement Contract #:		Federal Agreement #:	

K) Contractor's Administrator/ Officer				Contractor's Project Manager			
Name:	Nancy Cole			Name:	Joseph Impullitti		
Address:	21865 Copley Drive			Address:	21865 Copley Drive		
City, State, Zip:	Diamond Bar, CA 91765			City, State, Zip:	Diamond Bar, CA 91765		
Phone:	909-396-2767	Fax:	- -	Phone:	909-396-2025	Fax:	- -
E-Mail:	ncole@aqmd.gov			E-Mail:	jimpullitti@aqmd.gov		

L) Selection Process Used (For amendments, address amendment exemption or NCB, do not identify solicitation type of original agreement.)

Solicitation Select Type Solicitation #: - - # of Bids: Low Bid? No Yes
 Non Competitive Bid (Attach CEC 96)
 Exempt Other Governmental Entity

M) Contractor Entity Type

Private Company (including non-profits)
 CA State Agency (including UC and CSU)
 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? No Yes

If yes, check appropriate box: SB MB DVBE

O) Civil Service Considerations

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

Justification:
 South Coast Air Quality Management District (SCAQMD) has the requisite expertise to manage the Zero Emission Cargo Transport (ZCET) Demonstration project since they are the primary proponent and have competitively won an award from the DOE for this project. SCAQMD has been in close contact with CTE and other project subcontractors to coordinate work efforts and ensure the project proceeds in a timely manner. As the administrator of the project SCAQMD is best suited to manage all aspects of the project and ensure a successful outcome.

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

S) Disabled Veteran Business Enterprise Program (DVBE)

1. Exempt (Interagency/Other Government Entity)
 2. Meets DVBE Requirements DVBE Amount:\$ 0 DVBE %: _____
 Contractor is Certified DVBE
 Contractor is Subcontracting with a DVBE: Name of DVBE Company
 3. Contractor selected through CMAS or MSA with no DVBE participation.
 4. Requesting DVBE Exemption (attach CEC 95)

T) Miscellaneous Agreement Information

1. Will there be Work Authorizations? No Yes
 2. Is the Contractor providing confidential information? No Yes
 3. Is the contractor going to purchase equipment? No Yes
 4. Check frequency of progress reports
 Monthly Quarterly Other...
 5. Will a final report be required? No Yes
 6. Is the Agreement, with amendments, longer than a year? If yes, why? No Yes

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 checked="" type="checkbox"/> N/A | <input 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 checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |
| 8. CEC 105, Questionnaire for Identifying Conflicts | <input checked="" type="checkbox"/> N/A | <input checked="" type="checkbox"/> Attached |

 Agreement Manager Date Office Manager Date Deputy Director Date

Exhibit A SCOPE OF WORK

TECHNICAL TASK LIST

Task #	CPR	Task Name
1		Administration
2.1		Project Management Phase 1 – Build and Test Prototype
2.2		Project Management Phase 2 – In-Service Operations and Data Collection
3		Define Project Plan (Project Management Plan)
4	X	Vehicle/System Design
5		Long Lead Material Procurement
6	X	Secure H ₂ Fuel Supply for Testing
7		Lab Integration of The Sub-System Components
8		Vehicle Mechanical Integration
9	X	Secure H ₂ Fuel Supply for Demonstration Program
10		Vehicle Electrical Integration
11	X	Vehicle Testing/Validation
12		Vehicle In-Service Operation
13		Data Collection and Analysis

KEY NAME LIST

Task #	Key Personnel	Key Subcontractor(s)	Key Partner(s)
1	Joseph Impullitti	Michael Tosca – CTE	
2.1	Joseph Impullitti	Michael Tosca – CTE	
2.2	Joseph Impullitti	Michael Tosca – CTE	
3	Joseph Impullitti	Michael Tosca – CTE	
4	Joseph Impullitti	Michael Tosca – CTE	
5	Joseph Impullitti	Michael Tosca – CTE	
6	Joseph Impullitti	Michael Tosca – CTE	
7	Joseph Impullitti	Michael Tosca – CTE	
8	Joseph Impullitti	Michael Tosca – CTE	
9	Joseph Impullitti	Michael Tosca – CTE	
10	Joseph Impullitti	Michael Tosca – CTE	
11	Joseph Impullitti	Michael Tosca – CTE	

Task #	Key Personnel	Key Subcontractor(s)	Key Partner(s)
12	Joseph Impullitti	Michael Tosca – CTE	
13	Joseph Impullitti	Michael Tosca – CTE	

GLOSSARY

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

Term/ Acronym	Definition
ARFVTP	Alternative and Renewable Fuel and Vehicle Technology Program
CCM	Commission Contract Manager
CPR	Critical Project Review
CTE	Center for Transportation and the Environment
DOE	Department of Energy
FTD	Fuels and Transportation Division
H ₂	Hydrogen
Recipient	South Coast Air Quality Management District
SCAG	Southern California Association of Governments
Sub-recipient	Center for Transportation and the Environment
VIN	Vehicle Identification Number

Problem Statement:

The South Coast air Quality Management District (Recipient), California Air Resources Board (CARB) and Southern California Association of Governments (SCAG) — the agencies responsible for preparing the State Implementation Plan required under the federal Clean Air Act — have agreed that attainment of federal air quality standards for the region will require a transition to the broad use of zero and near-zero emission energy sources in cars, trucks and other equipment. In fact, the SCAG 2012 Regional Transportation Plan lays out a long-term vision of a phased adoption of zero and near-zero emission technologies to meet air quality goals.

On June 11, 2014, Recipient submitted a proposal under the Department of Energy's (DOE) Zero Emission Cargo Transport Demonstration Funding Opportunity Announcement. The proposal consisted of two components: 1) development and demonstration of zero-emission fuel cell range extended electric drayage trucks and 2) development and demonstration of hybrid electric drayage trucks for goods movement operations between the Ports of Los Angeles and Long Beach near dock rail yards and warehouses. The purpose of these projects is to accelerate deployment of zero emission cargo transport technologies to reduce harmful diesel emissions, petroleum consumption and greenhouse gases in the surrounding communities along the goods movement corridors that are impacted by heavy diesel traffic and the associated air pollution. The recipient received award notification from the DOE in August, 2014.

To control these negative impacts on the environment and the residents of these communities, it is critical that significant strides be taken to develop and implement zero emission technologies wherever possible. To accelerate and have more immediate impact on the air quality in the southern California transportation corridors, these zero emission technologies need to be applied to the cargo transport fleet, heavy-duty Class 8 drayage trucks. The majority of drayage vehicles are older diesel Class 8 trucks, with a potential local market size of up to 11,000 trucks in the South Coast Air Basin. They typically serve destinations located in and around the ports of Los Angeles and Long Beach and along the I-710 freeway corridor.

Goals of the Agreement:

The goal of this project is to develop and apply a vehicle architecture that blends existing zero-emission battery electric technology and a zero emission hydrogen fuel cell engine acting as a range extender to create a zero-emission drayage truck. This vehicle will meet the range and power for near-dock, local, and near-regional trips.

Zero emission technology and components have made significant improvements in reliability and maturity in recent times in the heavy-duty transit market. In particular, of the available zero emission technologies, fuel cell technology stands out as one solution that can provide range, consistent power and performance, longer life, and route flexibility. Fuel cell technology has demonstrated very good performance in transit bus applications, but there are still significant challenges to address in the cargo transport market. Applying a powerful, well-integrated and reliable system, based on technology and advanced integration that has been demonstrated in the other heavy duty markets like transit buses, has yet to be successfully accomplished for heavy-duty trucks.

To be successful in this endeavor, the project team must have proven experience and a successful track record developing advance electric transportation technologies. The team will include a truck original equipment manufacturer, a system integrator, a fuel cell supplier, and a cargo transport operator. The team has identified a zero-emission, fuel cell power architecture that will be responsive to the technical area of interest that meets DOE's objectives of reduced petroleum consumption and reductions in criteria and greenhouse gas emissions.

Objective of the Agreement:

The objective of this Agreement is to build a zero-emission Class 8 Fuel Cell Drayage Truck with Tier 1 companies, including that can meet Department of Motor Vehicles and California Highway Patrol vehicle regulations and the daily duty cycle needs of a drayage operator. The truck will have to demonstrate that it can pull a total of 80,000 lbs. GVWR in and out of the Ports of Los Angeles and Long Beach, climb a 6% grade over the Vincent Thomas Bridge, travel at least 100 miles between fueling, and operate at freeway speeds along the outer portions of the I-710 and CA-60 highways.

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 Commission Agreement Manager (CCM) shall designate the date and location of this meeting and provide an agenda to the Recipient prior to the meeting.

The Recipient shall:

- Attend a “Kick-Off” meeting with the CCM, the Commission Contract Officer, and a representative of the Energy Commission Accounting Office. The Recipient shall bring their Project Manager, Agreement Administrator, Accounting Officer, and any others determined necessary by the Recipient or specifically requested by the CCM to this meeting.
- Discuss the following administrative and technical aspects of this Agreement:
 - Agreement Terms and Conditions
 - Critical Project Review (Task 1.2)
 - Match fund documentation (Task 1.6) No reimbursable work may be done until this documentation is in place.
 - Permit documentation (Task 1.7)
 - Subcontracts needed to carry out project (Task 1.8)
 - The CCM’s expectations for accomplishing tasks described in the Scope of Work
 - An updated Schedule of Products and Due Dates
 - Monthly Progress Reports (Task 1.4)
 - Technical Products (Product Guidelines located in Section 5 of the Terms and Conditions)
 - Final Report (Task 1.5)

Recipient Products:

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

Commission Agreement Manager Product:

- Kick-Off Meeting Agenda

Task 1.2 Critical Project Review (CPR) Meetings

CPRs provide the opportunity for frank discussions between the Energy Commission and the Recipient. 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.

The CCM may schedule CPR meetings as necessary, and meeting costs will be borne by the Recipient.

Meeting participants include the CCM and the Recipient and may include the Commission Agreement Officer, the Fuels and Transportation Division (FTD) program lead, other Energy Commission staff and management as well as other individuals selected by the CCM to provide support to the Energy Commission.

The CCM 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. Prepare 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 section 8 of the Terms and Conditions). If the CCM concludes that satisfactory progress is not being made, this conclusion will be referred to the Lead Commissioner for Transportation for his or her 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 of 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 CCM 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.

CCM 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 Contracts Office Officer, and the CCM. 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 Agreement 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 Agreement Manager will determine the appropriate meeting participants.

The administrative portion of the meeting shall be a discussion with the Commission Agreement 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)
- Need to document Recipient's disclosure of "subject inventions" developed under the Agreement
- "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 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 Agreement 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.

- In the first Monthly Progress Report and first invoice, document and verify match expenditures and provide a synopsis of project progress, if match funds have been expended or if work funded with match share has occurred after the notice of proposed award but before execution of the grant agreement. If no match funds have been expended or if no work funded with match share has occurred before execution, then state this in the report. All pre-execution match expenditures must conform to the requirements in 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 the Agreement's 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, if requested by the CCM.
- Prepare a Final Report following the latest version of the Final Report guidelines which will be provided by the CCM. The CCM 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:

- Outline of the Final Report, if requested
- 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 CCM 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 Agreement Manager if during the course of the Agreement additional match funds are received.
- Notify the Commission Agreement 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 meeting.

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 Agreement 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 Agreement Manager.
- As permits are obtained, send a copy of each approved permit to the Commission Agreement Manager.
- If during the course of the Agreement permits are not obtained on time or are denied, notify the Commission Agreement 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)

- A copy of each final approved permit (if applicable)

Task 1.8 Obtain and Execute Subcontracts

The goal of this task is to notify all project contractors of contract award, negotiate and put under contract each contractor for their scope of supply and issue notices to proceed.

The teammates on this project proposal will be sent notice of award letters and will be asked to confirm their quotes and schedules for the scope of this project. Each quote will be negotiated and finalized and a contract will be put in place for the various scope of supply with the respective teams.

The Recipient shall:

- Manage and coordinate subcontractor activities.
- Submit a draft of each subcontract required to conduct the work under this Agreement to the Commission Agreement Manager for review.
- Submit a final copy of the executed subcontract.
- If Recipient decides to add new subcontractors, then the Recipient shall notify the CCM.

Products:

- Draft subcontracts
- Final subcontracts.

TECHNICAL TASKS

Task 2.0 Project Management

The goal is to create a sub-contractor management reporting system. .

Task 2.1 Phase 1 – Build and Test Prototype

The goal of this task is to create a team member management reporting system for Phase 1.

The Recipient shall:

Develop an electronic reporting system that tracks:

- Subcontractor project schedules.
- Subcontractor project budgets.
- Phase 1 cash flow projections.
- Risk indicators.

Products:

- Summary information will be included in the monthly progress reports.

Task 2.2 Phase 2 – In-Service Operations and Data Collection

The goal of this task is to create a team member management reporting system for Phase 2.

The Recipient shall:

- Subcontractor project schedules.
- Subcontractor project budgets.
- Phase 1 cash flow projections.
- Risk indicators.

Products:

- Summary information will be included in the monthly progress reports.

Task 3: Define Project Plan

The goal of this task is to use the executed contracts with team members and **refine** the existing project plan into a detailed, integrated project management plan.

The Recipient shall:

- Detail top level project plan from schedule that shows key milestones, handoffs, reviews, long-lead procurement, key integration and vehicle drive test tasks.
- Compile details into a master schedule and project management plan.
- Submit project management plan.

Products:

- Detailed master schedule and project management plan.

Task 4: Vehicle System Design

The goal of this task is design the proposed zero emission vehicles.

The Recipient shall:

- Develop vehicle mechanical layout and installation drawings.
- Verify and update the duty cycle and system usage.
- Perform required analysis to verify performance based on duty cycles developed.
- Perform system and vehicle weight analysis and verify conformance to established highway safety standards.
- Define the cooling system requirements.

- Develop and verify controls through simulation in lab environment.
- Identify cooling system based on requirements.
- Define energy storage and fuel storage capacity and vehicle range.

Products:

- 3-D models of Mechanical Layout and installations
- System performance and System Weight analyses which include power/range/energy & fuel storage capacity.

Task 5: Long-Lead Materials.

The goal of this task is to have the respective team members procure items that have long lead times.

The Recipient shall:

- Procure vehicle mounts and brackets required for all vehicle components.
- Procure propulsion system components and energy storage system.
- Procure cooling system.
- Supply truck to be modified.
- Supply electric accessories.
- Procure fuel cell engine and hydrogen fuel storage system.

Products:

- Information will be included in the monthly progress reports and the final report

Task 6: Secure H2 Fuel Supply for Testing

The goal of this task, in parallel with the onset of long-lead item procurement, is to determine a final source of H₂ fuel and the ideal location to support the testing program in Mt. Vernon, Washington.

The Recipient shall:

- Identify fueling options and sources of fuel.
- Decide on the best option for fueling, location, and fueling logistics to support testing program.
- Execute agreement with fuel supplier.
- Conduct training for relevant team personnel and first responders on proper use of hydrogen fueling equipment.

- **Products:**
 - Fueling Plan which shall include fueling system operating protocol details
 - Copy of executed agreement with fuel supplier

Task 7: Lab Integration of the Sub-System Components

The goal of this task is to integrate all major subsystems in a lab environment to verify operation, define and validate controls, mode and fault logics, communication and full hardware in loop system of system integration.

The Recipient shall:

- Set up lab to integrate the electric propulsion system with the fuel cell engine and cooling system.
- Develop and integrate subsystem controls and mode/fault logic in lab.
- Demonstrate system operation in Lab environment to validate controls and mode/fault logic.
- Verify all communications and fault logic.

Products:

- Information will be included in the monthly progress reports and the final report

Task 8: Vehicle Mechanical Integration

The goal of this task is to deliver key components to vehicle integrating partner. The vehicle integrating partner installs the components in alignment with the approved vehicle 3D CAD model.

The Recipient shall:

- Deliver all major subsystems (electric propulsion, fuel cell engine, energy storage, cooling system, fuel storage system and electric accessories) to vehicle integrating partner.
- Complete mechanical integration of all components, mounts, brackets, plumbing and wiring in the truck with support from any other necessary team members.

Products:

- Information will be included in the monthly progress reports and the final report

Task 9: Secure H2 Fuel Supply for Demo Program

The goal of this task is to develop and execute fueling plan to support vehicle during the two-year demonstration period in the Southern California ports.

The Recipient shall:

- Identify fueling options and sources of fuel.
- Decide on the best option for fueling, location, and fueling logistics to support testing program.
- Execute agreement with fuel supplier.
- Conduct training for relevant team personnel and first responders on proper use of hydrogen fueling equipment.

Products:

- Fueling Plan which shall include fueling system operating protocol details
- Copy of executed agreement with fuel supplier

Task 10: Vehicle Electrical Integration

The goal of this task is to deliver key electrical interconnect components to the vehicle integrating partner that electrically connect the key components in alignment with the approved vehicle 3D CAD model. Fuel cell is operated for the first time.

The Recipient shall:

- Procure high voltage harnessing and low voltage harnessing to the vehicle integrating partner.
- Connect the hydrogen storage system to the fuel cell along with completing all harness installation on the vehicle and perform low voltage check out.
- Operate the fuel cell engine with the vehicle stationary and operate all accessories and demonstrate battery charge and discharge.

Products:

- Information will be included in the monthly progress reports and the final report

Task 11: Vehicle Testing and Validation

The goal of this task is to perform road trials, system tuning, assign Vehicle Identification Number (VIN) and deliver vehicle to end user.

The Recipient shall:

- Perform a series of road trials simulating the desired duty cycle.
- Tune the system during the road trials to align as closely as possible to the vehicle design system performance analysis.
- Certify final vehicle acceptance by the team, assign VIN and deliver truck to end-user.

Products:

- Information will be included in the monthly progress reports and the final report

Task 12: Vehicle In-service Operation

The goal of this task is to operate vehicle in service for two years.

The Recipient shall:

- Operate the vehicle in service for 24 months
- Perform maintenance and repair as necessary.

Products:

- Information will be included in the monthly progress reports and the final report

Task 13 DATA COLLECTION AND ANALYSIS

The goal of this task is to collect operational data from the project, to analyze that data for economic and environmental impacts, and to include the data and analysis in the Final Report.

The Recipient shall:

- Collect 24 months of throughput, usage, and operations data from the project including, but not limited to:
 - Maximum capacity of the new fueling system
 - Gallons of gasoline and/or diesel fuel displaced (with associated mileage information)
 - Expected air emissions reduction, for example:
 1. Non-methane hydrocarbons
 2. Oxides of nitrogen
 3. Non-methane hydrocarbons plus oxides of nitrogen
 4. Particulate Matter
 5. Formaldehyde
 - Duty cycle of the end-user's fleet and the expected duty cycle of future vehicle acquisitions
 - Specific jobs and economic development resulting from this project
- Identify the source of the alternative fuel.
- Provide data on potential job creation, economic development, and increased state revenue as a result of expected future vehicle manufacturing and deployment.
- Provide a quantified estimate of the project's carbon intensity values for life-cycle greenhouse gas emissions.
- Collect data, information, and analysis described above and include in the Final Report.

Products: Data collection information and analysis will be included in the Final Report

RESOLUTION NO:

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION - RE: SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

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

RESOLVED, that the Energy Commission approves Agreement 600-15-006 with **South Coast Air Quality Management District** for a **\$2,400,000** contract to demonstrate zero emission fuel cell electric hybrid Class 8 cargo transport vehicles at the Ports of Long Beach and Los Angeles; 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 August 12, 2015.

AYE: [List of Commissioners]

NAY: [List of Commissioners]

ABSENT: [List of Commissioners]

ABSTAIN: [List of Commissioners]

Tiffani Winter,
Secretariat