

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 02/13)

CALIFORNIA ENERGY COMMISSION

New Agreement ARV-13-019 (To be completed by CGL Office)

| Division | Agreement Manager: | MS- | Phone |
|---------------------------------------|--------------------|-----|--------------|
| 600 Fuels and Transportation Division | Darren Nguyen | 27 | 916-654-5144 |

| Recipient's Legal Name | Federal ID Number |
|---|-------------------|
| Center for Transportation and the Environment | 58-2052891 |

| Title of Project |
|---|
| Fuel Cell Hybrid Electric Walk-In Van Development Project |

| Term and Amount | Start Date | End Date | Amount |
|-----------------|---------------|----------------|--------------|
| | 4 / 22 / 2014 | 12 / 30 / 2018 | \$ 1,100,000 |

Business Meeting Information
 ARFVTP agreements under \$75K delegated to Executive Director.

| | | | |
|--------------------------------|---------------|----------------------------------|--|
| Proposed Business Meeting Date | 4 / 22 / 2014 | <input type="checkbox"/> Consent | <input checked="" type="checkbox"/> Discussion |
| Business Meeting Presenter | Darren Nguyen | Time Needed: | 5 minutes |

Please select one list serve. Altfuels (AB118- ARFVTP)**Agenda Item Subject and Description**

Proposed resolution for approval of Agreement ARV-13-019 with Center for Transportation and the Environment for a \$1,100,000 grant to develop, validate, and deploy fuel cell hybrid electric walk-in delivery vans. The fuel cell hybrid delivery vehicle design will be able to achieve extended range through an optimum combination of fuel cell and battery power along with hydrogen energy storage. (ARFVTP funding) Contact: Darren Nguyen. (5 minutes)

California Environmental Quality Act (CEQA) Compliance

1. Is Agreement considered a "Project" under CEQA?
 Yes (skip to question 2) 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 .
2. If Agreement is considered a "Project" under CEQA:
 a) Agreement **IS** exempt. (Attach draft NOE)
 Statutory Exemption. List PRC and/or CCR section number:
 Categorical Exemption. List CCR 14 CCR 15301 Existing Facilities section number:
 Common Sense Exemption. 14 CCR 15061 (b) (3)
 Explain reason why Agreement is exempt under the above section:
 The proposed work will be done within an existing operational facility. The vehicles will be built at the site of an existing facility that is fully developed and is consistent with the facility's capabilities and no modification to the facility is required. The proposed project involves negligible or no expansion of existing use.
- b) Agreement **IS NOT** exempt. (Consult with the legal office to determine next steps.)
 Check all that apply
 Initial Study Environmental Impact Report
 Negative Declaration Statement of Overriding Considerations
 Mitigated Negative Declaration

List all subcontractors (major and minor) and equipment vendors: (attach additional sheets as necessary)

| Legal Company Name: | Budget |
|---|------------|
| Electric Vehicles International | \$ 528,695 |
| Hydrogenics | \$ 89,775 |
| Center for Electromechanics (University of Texas) | \$ 389,824 |

List all key partners: (attach additional sheets as necessary)

| |
|---------------------|
| Legal Company Name: |
| |
| |

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 02/13)

CALIFORNIA ENERGY COMMISSION



| Budget Information | | | |
|-----------------------------------|-------------------------------|----------------------|-------------|
| Funding Source | Funding Year of Appropriation | Budget List No. | Amount |
| ARFVTF | 13/14 | 601.118F | \$1,100,000 |
| Funding Source | | | \$ |
| R&D Program Area: | Select Program Area | TOTAL: | \$1,100,000 |
| Explanation for "Other" selection | | | |
| Reimbursement Contract #: | | Federal Agreement #: | |

| Recipient's Administrator/ Officer | | | | Recipient's Project Manager | | | |
|------------------------------------|--------------------------------|------|--------------|-----------------------------|---------------------------------|------|--------------|
| Name: | Jason Hanlin | | | Name: | Jason Hanlin | | |
| Address: | 730 Peachtree Street Suite 760 | | | Address: | 730 Peachtree Street, Suite 760 | | |
| City, State, Zip: | Atlanta, GA 30308 | | | City, State, Zip: | Atlanta, GA 30308 | | |
| Phone: | 404-808-6489 | Fax: | 678-244-4151 | Phone: | 404-808-6489 | Fax: | 678-244-4151 |
| E-Mail: | jason@cte.tv | | | E-Mail: | jason@cte.tv | | |

| Selection Process Used | |
|---|----------------------------|
| <input checked="" type="checkbox"/> Competitive Solicitation | Solicitation #: PON-13-604 |
| <input type="checkbox"/> First Come First Served Solicitation | |

| The following items should be attached to this GRF | |
|---|---|
| 1. Exhibit A, Scope of Work | <input checked="" type="checkbox"/> Attached |
| 2. Exhibit B, Budget Detail | <input checked="" type="checkbox"/> Attached |
| 3. CEC 105, Questionnaire for Identifying Conflicts | <input checked="" type="checkbox"/> Attached |
| 4. Recipient Resolution | <input checked="" type="checkbox"/> N/A <input type="checkbox"/> Attached |
| 5. CEQA Documentation | <input 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 | N/A | Administrative |
| 2 | X | Vehicle build (one vehicle) |
| 3 | | Training and Education |
| 4 | | Demonstration Vehicle Test and Evaluation |
| 5 | | Project Management – Phase 1 |
| 6 | X | Vehicle Build (4 Vehicles) |
| 7 | | Training And Education |
| 8 | | Vehicle Test and Evaluation |
| 9 | | Project Management – Phase 2 |
| 10 | | Data Collection and Analysis for the Energy Commission |

KEY NAME LIST

| Task # | Key Personnel | Key Subcontractor(s) | Key Partner(s) |
|---------------|----------------------|-------------------------------------|-----------------------|
| 1 | Jason Hanlin - CTE | Ricky Hanna – EVI | Michael Lewis - CEM |
| 2 | Jason Hanlin - CTE | Ricky Hanna – EVI | Michael Lewis - CEM |
| 3 | Jason Hanlin - CTE | Ricky Hanna – EVI | Michael Lewis - CEM |
| 4 | Jason Hanlin - CTE | Mike Britt – UPS; Ricky Hanna - EVI | Michael Lewis - CEM |
| 5 | Jason Hanlin - CTE | | |
| 6 | Jason Hanlin - CTE | Ricky Hanna – EVI | Michael Lewis - CEM |
| 7 | Jason Hanlin - CTE | Ricky Hanna – EVI | Michael Lewis - CEM |
| 8 | Jason Hanlin - CTE | Mike Britt – UPS; Ricky Hanna - EVI | Michael Lewis - CEM |
| 9 | Jason Hanlin - CTE | | |
| 10 | Jason Hanlin - CTE | | Michael Lewis - CEM |

GLOSSARY

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

| Term/ Acronym | Definition |
|--------------------------|--|
| ARFVTP | Alternative and Renewable Vehicle and Technology Program |
| CAM | Commission Agreement Manager |
| CEM | Center for Electromechanics (University of Texas) |
| CPR | Critical Project Review |
| CTE | Center for Transportation and the Environment |
| DOE | US Department of Energy |
| Energy Commission | California Energy Commission |
| EVI | Electric Vehicles International |
| EVI-WI | Electric Vehicles International walk-in |
| FTD | Fuels and Transportation Division |
| GSM | Global System for Mobile Communication |
| MD | Medium Duty |
| P&ID | Piping and Instrumentation Diagram |
| Recipient | Center for Transportation and the Environment |
| UPS | United Parcel Services |
| WI | Walk-in |

Background:

Assembly Bill 118 (Núñez, Chapter 750, Statutes of 2007), created the Alternative and Renewable Fuel and Vehicle Technology (ARFVT) Program. The statute, subsequently amended by AB 109 (Núñez Chapter 313, Statutes of 2008) and AB 8 (Perea, Chapter 401, Statutes of 2013), authorizes the California Energy Commission (Energy Commission) to develop and deploy alternative and renewable fuels and advanced transportation technologies to help attain the state's climate change policies. The Energy Commission has an annual program budget of approximately \$100 million and provides financial support for projects that:

- Develop and improve alternative and renewable low-carbon fuels;
- Optimize alternative and renewable fuels for existing and developing engine technologies;
- Produce alternative and renewable low-carbon fuels in California;
- Decrease, on a full fuel cycle basis, the overall impact and carbon footprint of alternative and renewable fuels and increase sustainability;
- Expand fuel infrastructure, fueling stations, and equipment;
- Improve light-, medium-, and heavy-duty vehicle technologies;
- Retrofit medium- and heavy-duty on-road and non-road vehicle fleets;

- Expand infrastructure connected with existing fleets, public transit, and transportation corridors; and
- Establish workforce training programs, conduct public education and promotion, and create technology centers.

The California Energy Commission issued solicitation PON-13-604 on October 24, 2013 to provide funding for projects which leverage ARFTVP funds to bring federal cost-sharing projects to California that will improve air quality, reduce petroleum consumption and decrease greenhouse gas emissions (GHGs). To be eligible for funding under PON-13-604, the projects must also be consistent with the Energy Commission's ARFVT Investment Plan, which is updated annually. In response to PON-13-604, the Applicant submitted application number 5, which was proposed for funding in the Energy Commission's Notice of Proposed Awards of February 27th, 2014, and which is hereby incorporated by reference into this Agreement.

In the event of any conflict or inconsistency between the terms of the solicitation and the terms of the Recipient's Application, the solicitation shall control. In the event of any conflict or inconsistency between the Recipient's Application and the terms of the Energy Commission's Award, the Energy Commission's Award shall control. Similarly, in the event of any conflict or inconsistency between the terms of this Agreement and the Recipient's Application, the terms of this Agreement shall control.

Problem Statement:

Electric drive vehicles are being introduced to drastically improve operational efficiencies over incumbent technologies as well as to utilize clean, safe, secure, affordable, and reliable energy from diverse domestic resources. Electric drive vehicles also provide the benefits of reduced consumption of resources, increased energy security, and reduced criteria pollutants and greenhouse gas emissions. A growing market for medium duty (MD) electric trucks has been seen in recent years in the delivery van market, where key players such as Federal Express, United Parcel Service (UPS), and Frito Lay have deployed hundreds of electric drive trucks. Although battery electric drive powertrains have made great strides, these vehicles still have range limitations and typically can only provide service on select delivery routes. For example, an electric delivery van currently in use by UPS can only support 70% of their existing delivery routes. By implementing a fuel cell range extender, it is possible to increase the range of the zero emissions delivery van and satisfy nearly all delivery routes supported by UPS or other delivery service providers.

Goals of the Agreement:

The goal of this Agreement is to substantially increase the zero emission driving range and increase the viability of electric drive medium duty trucks. This will in turn reduce petroleum consumption and related emissions of these vehicles. In addition, the project also aims to accelerate the introduction and market penetration of electric drive transportation technologies and respond to the growing demand by commercial fleet customers willing to purchase electric drive vehicles.

Objectives of the Agreement:

In Phase I, the Project Team will carefully develop and fully validate (including in-service operation) a demonstration fuel cell hybrid delivery van in order to prove its viability to project stakeholders, funders, and our commercial fleet partner, UPS. The van will perform as well or better than current state-of-the-art delivery vans while producing zero emissions. In Phase II, the Project Team will build and demonstrate a pre-commercial volume (up to 4) of the same

vehicles for at least 5,000 hours of in-service operation. The vehicles will be fully built by our commercialization partner, Electric Vehicles International (EVI), operated by our commercial fleet partner, UPS, and operationally supported throughout the deployment by the Project Team. The Project Team will carry out the project in close communication with each other, project stakeholders, and fueling station providers. By following this high-level plan, we expect this project to address every aspect of the DOE technical objectives which can be found under the Federal Award number DE-EE0006523 including the following: 1) to substantially increase the zero emission driving range, thereby reducing petroleum consumption and related emissions, and increasing the viability of these electric drive vehicles; 2) to accelerate the introduction and market penetration of electric drive transportation technologies; and 3) to respond to the growing demand to purchase electric drive vehicles, provided their operational priorities can be satisfied.

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 CAM 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 Commission Agreement Manager, the Grants Officer, and a representative of the Accounting Office. The Recipient shall bring its Project Manager, Agreement Administrator, Accounting Officer, and others designated by the Commission Agreement Manager 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 CAM'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 CAM may schedule CPR meetings as necessary, and meeting costs will be borne by the Recipient.

Meeting participants include the CAM and the Recipient and may include the Commission Grants Officer, the Fuels and Transportation Division (FTD) staff, other Energy Commission staff and Management as well as other individuals selected by the CAM to provide support to the Energy Commission.

The CAM 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 CAM 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 CAM 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.

CAM Products:

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

Recipient Product:

- CPR Report(s)

Task 1.3 Final Meeting

The goal of this task is to closeout this Agreement.

The Recipient shall:

- Meet with Energy Commission staff to present the findings, conclusions, and recommendations. The final meeting must be completed during the closeout of this Agreement.
This meeting will be attended by, at a minimum, the Recipient, the Commission Grants Office Officer, and the Commission Agreement Manager. The technical and administrative aspects of Agreement closeout will be discussed at the meeting, which may be two separate meetings at the discretion of the Commission 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 CAM.
- Prepare a Final Report following the latest version of the Final Report guidelines which will be provided by the CAM. The CAM 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 Commission Agreement Manager at least 2 working days prior to the kick-off meeting. If no match funds were part of the proposal that led to the Energy Commission awarding this Agreement and none have been identified at the time this Agreement starts, then state such in the letter. If match funds were a part of the proposal that led to the Energy Commission awarding this Agreement, then provide in the letter a list of the match funds that identifies the:
 - Amount of each cash match fund, its source, including a contact name, address and telephone number and the task(s) to which the match funds will be applied.
 - Amount of each in-kind contribution, a description, documented market or book value, and its source, including a contact name, address and telephone number and the task(s) to which the match funds will be applied. If the in-kind contribution is equipment or other tangible or real property, the Recipient shall identify its owner and provide a contact name, address and telephone number, and the address where the property is located.
- Provide a copy of the letter of commitment from an authorized representative of each source of cash match funding or in-kind contributions that these funds or contributions have been secured. For match funds provided by a grant a copy of the executed grant shall be submitted in place of a letter of commitment.
- Discuss match funds and the implications to the Agreement if they are reduced or not obtained as committed, at the kick-off meeting. If applicable, match funds will be included as a line item in the progress reports and will be a topic at CPR meetings.
- Provide the appropriate information to the Commission 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 ensure quality products and to procure subcontractors required to carry out the tasks under this Agreement consistent with the Agreement Terms and Conditions and the Recipient's own procurement policies and procedures. It will also provide the Energy Commission an opportunity to review the subcontracts to ensure that the tasks are consistent with this Agreement, and that the budgeted expenditures are reasonable and consistent with applicable cost principles.

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 CAM.

Products:

- Draft subcontracts
- Final subcontracts

TECHNICAL TASKS

Phase 1 – Vehicle Development and Demonstration

TASK 2 VEHICLE BUILD (ONE VEHICLE)

The goal of this task is to fully build and test a fuel cell hybrid delivery van and deliver it to the demonstration site in California.

Task 2.1 Final Vehicle Specification and Development of Acceptance Plan

The goal of this task is to complete and document the vehicle specification. From the vehicle specification an acceptance plan will be developed to ensure proper performance metrics will be met during testing and demonstration.

The Recipient shall:

- Utilize existing state of the art delivery vehicle specifications, sponsor requirements, proposed specifications and preliminary design results to draft the requirements definition and document the vehicle specification.
- Convene to discuss and confirm the requirements definition.
- Finalize the requirements definition & vehicle specification.
- Draft an acceptance plan from the vehicle specification to ensure proper performance metrics will be met during test and demonstration.
- Finalize the acceptance plan.

Products:

- Final requirements definition & vehicle specification
- Final Acceptance Plan

Task 2.2 Fuel Cell Hybrid Powertrain Sub-system Design Confirmation and Schematics

The goal of this task is to complete the final design task for the fuel cell hybrid and hydrogen system integration and produce mechanical and electrical design drawings for the fuel cell hybrid powertrain sub-system.

The Recipient shall:

- With support from the Project Team, complete the final design task for the fuel cell hybrid powertrain sub-system that addresses physical integration, vehicle controls, and optimal power and energy distribution.
- Produce mechanical and electrical design drawings, which includes the following:
 - Component specification
 - Vehicle mechanical and electrical layout and schematics
 - Fuel cell and DC/DC converter integration
 - Power systems control development
 - Hydrogen storage system layout and specification

Products:

- Mechanical Design Drawings
- Electrical Design Drawings

Task 2.3 Order Long-lead Time Components

The goal of this task is to order all components with long-lead times to ensure timely arrival as the van is built out.

The Recipient shall:

- Place orders for the major, long-lead components of the fuel cell hybrid delivery van to ensure timely arrival as the van is built out. Components will include, but are not limited to:
 - H2 storage components
 - Fuel cell power electronics components

Products:

- Purchase order for H2 storage components
- Purchase order for fuel cell power electronics components
- Purchase order for any additional major, long-lead components required

Task 2.4 Battery Pack Build & Test

The goal of this task is to build and test the van's battery pack.

The Recipient shall:

- Provide the first commercially available, safe, large-format family of Lithium Iron Magnesium Phosphate Rechargeable Batteries.
- Build the traction battery pack to meet the power and energy requirements of the fuel cell hybrid configuration as determined in task 2.2.
- Test the completed battery system under factory acceptance testing and, if needed, repair/modify/replace.

- Ship the completed battery system for vehicle integration.

Products:

- Traction battery pack test results
- Shipping receipts for battery pack

Task 2.5 Base Electric Drive Van EVI-WI Assembly and Commissioning at EVI

The goal of this task is to convert the diesel van to electric drive.

The Recipient shall:

- Deliver one used diesel-powered walk-in van to EVI.
- Convert the used diesel-powered walk-in van to electric drive using existing Electric Vehicles International walk-in (EVI-WI) vehicle design, but with the updated battery and controls specification as specified in Task 2.2.
- Commission this base electric vehicle using EVI's existing factory acceptance test.

Product:

- Base electric vehicle test results

Task 2.6 Base Vehicle Delivered to CEM

The goal of this task is to ship the base vehicle to Austin, TX.

The Recipient shall:

- Deliver the base vehicle to CEM in Austin, TX.

Product:

- Base vehicle delivery confirmation to CEM

Task 2.7 Vehicle Hydrogen Storage System Integration

The goal of this task is to fully integrate the hydrogen storage system into the vehicle.

The Recipient shall:

- Install into the vehicle the hydrogen storage system, including all storage tanks, mounting brackets, valves, pressure and temperature sensors, pressure regulators and relief valves, gauges, tubing, fittings and fueling receptacle.
- Pressure test and leak test the system.
- Produce as-built mechanical assembly drawings, electrical drawings, and Piping & Instrumentation Diagram (P&ID).

Product:

- Hydrogen storage system test results
- Updated mechanical assembly drawings
- Updated electrical drawings
- Hydrogen system P&ID

Task 2.8 Vehicle Fuel Cell Power System Integration

The goal of this task is to fully integrate the fuel cell power system into the vehicle.

The Recipient shall:

- Integrate the fuel cell, hydrogen storage, DC-DC converter, hydrogen leak detection, and vehicle control systems and configure the van for optimal power and energy distribution. Integration steps will include:
 - Physical integration of fuel cell system into van
 - Communication verification with vehicle controller
 - Low voltage and high voltage component operability verification
 - Full performance check of fuel cell system
 - Full safety check of fuel cell and hydrogen system integration
- Provide assistance, as needed.

Product:

- Confirmation of vehicle completion with integrated fuel cell power system

Task 2.9 Vehicle Commissioning and Specification Validation at CEM & EVI

The goal of this task is to commission the vehicle.

The Recipient shall:

- In accordance with the Vehicle Specification and Acceptance Plan established in task 2.1, test the van in operation to ensure that all systems and components are operating properly for field demonstration prior to delivery.
- Tune and calibrate the van's subsystem if necessary.
- Provide acceptance verification as needed.

Product:

- Fully tested fuel cell hybrid delivery van test results

Task 2.10 Vehicle Delivered to Operation Site

The goal of this task is to ship the completed delivery van to the demonstration site in California.

The Recipient shall:

- Ship the completed delivery van to the demonstration site in California (currently planned for West Sacramento).

Product:

- Vehicle delivery confirmation at demonstration site

[CPR WILL BE HELD IN THIS TASK. See Task 1.2 for details]

TASK 3 TRAINING AND EDUCATION

The goal of this task is to assemble operator's manuals and develop training plans and training material, to be accomplished by CTE and the Project Team. The Project Team will also complete all necessary on-site vehicle operations and fueling training for operators and first responders, if necessary.

Task 3.1 Operations Manual Development

The goal of this task is to develop an operations manual for the fuel cell hybrid delivery van.

The Recipient shall:

- Provide the existing EVI-WI Operations Manual.
- Define any changes to the operation and fueling procedures for the delivery van.
- Produce a manual sufficient for safe, effective operation of the fuel cell hybrid delivery van. The Project Team will review and update the existing EVI WI Operations Manual for any changes that might affect operation of the fuel cell version. The manual will also include any recommended or required procedures identified in the Safety Plan, developed in Task 5.3.
- Submit the final manual for proper review cycle by all relevant parties.

Product:

- Draft Operators Manual
- Final Operators Manual

Task 3.2 Operations Training Plan Development

The goal of this task is to develop an operations training plan for the fuel cell hybrid delivery van.

The Recipient shall:

- Produce a training plan sufficient for safe, effective operation of the fuel cell hybrid delivery van. Use the existing EVI WI training plan and update it for any changes that might affect operation of the fuel cell version. The Training plan will identify recommended attendees, pre-requisite requirements, course material, duration and roles for each course. Training will also include any recommended or required procedures identified in the Safety Plan.

Product:

- Draft Operations and Fueling Training Plan
- Final Operations and Fueling Training Plan

Task 3.3 Complete Operations Training

The goal of this task is to train applicable van drivers and support staff in operating the vehicle.

The Recipient shall:

- Coordinate the training with Project Team Instructors and attendees to ensure that it is efficient and effective.
- Complete operations training for applicable van drivers and support staff over multiple sessions, if necessary.

Product:

- Operations training session(s) schedules
- List of drivers/attendees from training session(s)

Task 3.4 Complete Hydrogen Fueling Training

The goal of this task is to train applicable van drivers and support staff in fueling the vehicle.

The Recipient shall:

- Coordinate the training with Team Instructors and attendees to ensure that it is efficient and effective.
- Coordinate fueling training for applicable van drivers and support staff over multiple sessions, if necessary.

Products:

- Fueling training session schedules
- List of drivers/staff that were trained in fueling the vehicle

TASK 4 DEMONSTRATION VEHICLE TEST AND EVALUATION

The goal of this task is to test the effectiveness of the vehicle by simulating service so the Project Team can identify and correct any van, operator, or route issues. The vans will be operated for a short duration (approx. 2 weeks) in simulated service on the specified demonstration route(s) to identify any on-route issues prior to being placed into routine UPS service. After this service, the van will be operated in routine UPS service for a period of six months. During this period, the Project Team will provide maintenance and operational support.

Task 4.1 Maintenance and Support Plan Development

The goal of this task is to develop a plan to provide assistance to the van throughout the demonstration. Given the various roles and locations among the team, this task will be necessary to ensure maximum availability for the van when placed into service.

The Recipient shall:

- Develop a plan to provide dedicated maintenance and support of the van throughout the demonstration with input and coordination from the Project Team. The plan will identify and document preventive maintenance, unscheduled maintenance, who will provide service, identifies various levels of support, procedures for calling for service, response times, parts, etc.

Products:

- Draft plan for maintenance and support
- Final plan for maintenance and support

Task 4.2 Vehicle Operational Support

The goal of this task is to provide technical support, when needed.

The Recipient shall:

- Provide technical support to address any issues the van may encounter during the operations period in accordance with the plan defined in Task 4.1. The Project Team will focus on maintaining optimal reliability, efficiency, and performance.

Product:

- Technical support report, if any

Task 4.3 In-service Vehicle Data Collection and Evaluation

The goal of this task is to collect and evaluate data from the demonstration of the vehicle. The data will be provided as required by DOE and the Energy Commission for the duration of the demonstration. The means of data collection will be automated to the best of the team's ability. A GSM data collection and transmission device will be equipped onboard the vehicle, and data will be uploaded to a secure site automatically on a daily basis.

The Recipient shall:

- Collect data from the vehicle, refueling station, and charger (as needed) throughout the demonstration.
- Collect maintenance and safety data at both the vehicle and fueling station.
- Use the operational data for the following purposes:
 - Provision to DOE in accordance with the contract
 - Team evaluation the vehicle's performance
 - Assess any degradation in performance, which can be used to estimate component life and overall life cycle cost
 - Assessment that will provide the basis for the Go/No-Go milestone prior to Phase II
- Compile monthly reports documenting usage. Similarly, hydrogen fueling station data will be collected daily and assessed monthly.
- Work with prospective fueling stations to determine the most feasible means of collecting operational data.

Products:

- Raw operations, maintenance, and fueling data
- Monthly summary reports

Task 4.4 Assessment for Phase 2 Go/No-Go Requirements

The goal of this task is to assess whether or not the vehicle and demonstration met the following performance metrics.

Results from the six-month demonstration will be compared to the previously established project goals, vehicle specifications, and performance metrics. Primary metrics will be related to range, efficiency, emissions, and reliability/availability. Operator satisfaction will also be evaluated. A report will be provided to DOE showing the results and recommendation by the team for further Phase 2 Demonstration. The project will move forward to Budget Period 2 if DOE is satisfied that the vehicle successfully demonstrates a zero-emissions driving range of at least 125 miles on a single hydrogen fill and meets the operator's performance expectations as a comparably functional vehicle to its existing fleet.

| | Current EVI Electric Van | Fuel Cell Hybrid Van |
|---------------------------|--|--|
| Key Specifications | | |
| Maximum Speed | 65 mph | 65 mph |
| Range | 90 miles | >125 miles |
| Acceleration (0-60 mph) | 26 seconds at 19,500 lbs | 26 seconds at 19,500 lbs |
| GVW | Class 6 (23,000 lbs) | Class 6 (23,000 lbs) |
| | 5% Grade to cruising speed of 30 mph in 7 seconds | 5% Grade to cruising speed of 30 mph in 7 seconds |
| Gradeability | 10% Grade to cruising speed of 20 mph in 2 seconds | 10% Grade to cruising speed of 20 mph in 2 seconds |
| | 15% Grade to cruising speed of 20 mph in 3 seconds | 15% Grade to cruising speed of 20 mph in 3 seconds |

The Recipient shall:

- Compare results from the six-month demonstration to the performance metrics.
- Provide DOE with a report showing the results and recommendation by the team for further Phase 2 Deployment.

Products:

- Draft phase I performance assessment report
- Final phase I performance assessment report

TASK 5 PROJECT MANAGEMENT – PHASE 1

The DOE has certain administrative requirements that must be met prior to Task 5.2 (see accompanying DOE Scope of Work). Those requirements are not part of the Energy Commission agreement and the Energy Commission will not reimburse any expenditures incurred to comply with DOE’s requirements.

Task 5.2 Complete Project Management Plan

The goal of this task is to develop, document and distribute a Project Management Plan.

The Recipient shall:

- With assistance from the Project Team, will develop, document, and distribute the project management plan for this project. The project management plan will include a work plan, success criteria, assumptions, dependencies, organizational structure, managerial process and communication plan, risk management, and any other plans associated with project management of this project.

Products:

- Draft project management plan
- Final project management plan

Task 5.3 Develop Safety Plan

The goal of this task is to develop a safety review to ensure that all necessary preventions, precautions, and procedures are taken for hazards throughout development and operation of the vehicle.

The Recipient shall:

- Review the van and hydrogen system design.
- Complete a formal safety review. CTE shall coordinate and administer the safety review.
- Hold project level hazard analysis, and address any deficiencies with assistance from the Project Team.
- Develop a System Safety Plan documenting the safety process and hazard analysis results with assistance from the Project Team.
- Commission a maintenance facility audit of hydrogen readiness and perform any necessary upgrades.
- Attend safety planning and hazard analysis meetings and provide input and feedback.
- Report on internal hazard analysis findings and actions related to the vehicle.
- Review the draft System Safety Plan and provide feedback as necessary.

Products:

- Project level hazard analysis report
- System Safety Plan
- Maintenance Facility Audit Report for Hydrogen Readiness

The DOE has certain administrative requirements that must be met prior to Task 5.5 (see accompanying DOE Scope of Work). Those requirements are not part of the Energy Commission agreement and the Energy Commission will not reimburse any expenditures incurred to comply with DOE's requirements.

Task 5.5 Complete Status Reporting

The goal of this task is to report the project's status to DOE.

The Recipient shall:

- Develop and submit quarterly reports covering project progress, cost summary, schedule summary, data collection, commercialization efforts, travel, issues, concerns, future work plans and other updates as required by DOE. Reports and other deliverables will be provided in accordance with the Federal Assistance Reporting Checklist.
- Provide input for project status reports as required by Recipient.

Products:

- Quarterly Status Reports

Phase 2 – Vehicle Deployment

TASK 6 VEHICLE BUILD (4 VEHICLES)

The goal of this task is to provide sixteen fully built and tested fuel cell hybrid delivery vans and deliver them to one or more demonstration sites in California.

Task 6.1 Design Review and Updates As Needed

The goal of this task is to review vehicle design post-demonstration and update it as needed to address performance or safety improvements.

The Recipient shall:

- Complete design reviews post-demonstration phase, which will provide lessons learned and recommended design updates for implementation onto the commercial deployment vehicles.
- Confirm mechanical and electrical design drawings and component specifications.

Products:

- Updated electrical and mechanical drawings

Task 6.2 Develop Manufacturing Plan

The goal of this task is to develop a plan for the manufacturing of 4 fuel cell hybrid vans.

The Recipient shall:

- Develop a plan to fully manufacture 4 fuel cell hybrid vans at EVI in Stockton, CA. This plan will be used to ensure that the fuel cell and hydrogen subsystems can be integrated into the EVI WI vans, both on time and on budget.
 - The plan will fully describe coordination efforts between the Project Team, as well as procurement and build schedules.
 - The plan should address a strategy for product updates and version control as they occur during the build process.
 - The plan should consider manufacturing risks and potential mitigation strategies.

Products:

- Draft manufacturing plan
- Final manufacturing plan

Task 6.3 Vehicle Assembly at EVI

The goal of this task is to manufacture 4 fuel cell hybrid vans in accordance with the Manufacturing Plan developed in Task 6.2.

The Recipient shall:

- Deliver sixteen used diesel-powered walk-in vans to EVI.
- Order all bill of material parts.
- With support from CEM, produce 4 fuel cell hybrid vans based on the initial demonstration vehicle.
- Provide a bill of material for the fuel cell and hydrogen subsystem.
- Provide fuel cell propulsion system integration assistance based on the experience and knowledge gained from design and integration of the first van at CEM facilities.
- Build test and deliver sixteen fuel cells according to the Project Team's specification.
- Build test and deliver sixteen traction batteries according to the Project Team's specification.

Products:

- Confirmation of completed 4 fuel cell hybrid delivery vans

Task 6.4 Vehicles Commissioning

The goal of this task is to commission the 4 fuel cell hybrid vans.

The Recipient shall:

- With support from CEM and Hydrogenics, commission the 4 fuel cell hybrid vans using the vehicle specification and acceptance plan established in Task 2.1.

Products:

- Confirmation of 4 commissioned fuel cell hybrid delivery vans

Task 6.5 Vehicles Delivered

The goal of this task is to deliver the vehicles to one or more California locations defined in Task 9.2 for in-service operation.

The Recipient shall:

- Deliver the 4 fuel cell hybrid vans to one or more California locations for in-service operations.

Product:

- Vehicle delivery confirmation

[CPR WILL BE HELD FOR THIS TASK. See Task 1.2 for details]

TASK 7 TRAINING AND EDUCATION

The goal of this task is for the project team to complete all necessary on-site vehicle operations and fueling training for operators and first responders, if necessary.

Task 7.1 Complete Operations Training

The goal of this task is to provide operations training for van drivers and support staff.

The Recipient shall:

- Coordinate the training with Team Instructors and attendees to ensure that it is efficient and effective.
- Complete operations training for applicable van drivers and support staff over multiple sessions, if necessary.

Products:

- Operations training session(s) schedule(s)
- List of drivers/staff from training session(s)

TASK 8 VEHICLE TEST AND EVALUATION

The goal of this task is to operate all seventeen fuel cell hybrid vans in routine UPS service for at least 5,000 hours of operation. The project team will provide maintenance and operational support during this period. All required operational data will be collected and reported throughout the period.

Task 8.1 Vehicle Operational Support

The goal of this task is to provide operational support for any issues the van may encounter.

The Recipient shall:

- Provide technical support to address any issues the van may encounter during the operations period in accordance with the plan defined in Task 4.1. The Team will focus on maintaining optimal reliability, efficiency, and performance.

Product:

- Technical support report, if any

Task 8.2 In-service Vehicle Data Collection and Evaluation

The goal of this task is to collect and evaluate data from the demonstration of the vehicle. The data will be provided as required by DOE and the Energy Commission for the duration of the demonstration. The means of data collection will be automated to the best of the team's ability. A GSM data collection and transmission device will be equipped onboard the vehicle, and data will be uploaded to a secure site automatically on a daily basis.

The Recipient shall:

- Collect data from the vehicles, refueling station, and charger (as needed) throughout the demonstration.
- Collect maintenance and safety data at both the vehicle and fueling station.
- Use the operational data for the following purposes:
 - Provision to DOE in accordance with the contract
 - Team evaluation the vehicle's performance
 - Comparison of van operating parameters to those predicted by the model to identify any discrepancies and update the model
 - Assess any degradation in performance, which can be used to estimate component life and overall life cycle cost
 - Assessment that will provide the basis for the Go/No-Go milestone prior to Phase II

- Compile monthly reports documenting usage. Similarly, hydrogen fueling station data will be collected daily and assessed monthly.
- Work with prospective fueling stations to determine the most feasible means of collecting operational data.

Products:

- Raw operations, maintenance, and fueling data
- Monthly summary reports

TASK 9 PROJECT MANAGEMENT – PHASE 2

The DOE has certain administrative requirements that must be met prior to Task 9.2 (see accompanying DOE Scope of Work). Those requirements are not part of the Energy Commission agreement and the Energy Commission will not reimburse any expenditures incurred to comply with DOE’s requirements.

Task 9.2 Fueling Station Coordination

The goal of this task is to confirm locations for deploying and fueling the Phase 2 delivery vans in California.

The Recipient shall:

- Work with its partners in California, as well as UPS, to identify and select one or more sites for delivery van deployment. Recipient will ensure that stations and fueling capacity will be available in convenient proximity to UPS distribution centers where and when the fuel cell vans will be deployed.
- Work with UPS to develop a deployment plan that will fully enable the movement of vehicles from one distribution site to another if for any reason a station is unable to provide fuel. There must be absolute compatibility between vehicles and fueling infrastructure, including the ability to provide redundant capabilities should there be any disruption in fuel supply.

Products:

- List/map of proposed fueling station locations
- List/map of final fueling station locations

The DOE has certain administrative requirements that must be met prior to Task 9.4 (see accompanying DOE Scope of Work). Those requirements are not part of the Energy Commission agreement and the Energy Commission will not reimburse any expenditures incurred to comply with DOE’s requirements.

Task 9.4 Complete Status Reporting

The goal of this task is to report the project’s status to DOE.

The Recipient shall:

- Develop and submit quarterly reports covering project progress, cost summary, schedule summary, data collection, commercialization efforts, travel, issues, concerns, future work plans and other updates as required by DOE. Reports and other deliverables will be provided in accordance with the Federal Assistance Reporting Checklist.
- Provide input for project status reports as required by Recipient.

Products:

- Quarterly status reports

Task 9.5 Complete Economic/Market Opportunity Assessment

The goal of this task is to develop assessment for the market opportunity for fuel cell hybrid delivery vans.

The Recipient shall:

- Evaluate the market for fuel cell hybrid delivery vans; provide recommendations that will enable the transition from a state of government supported, team-integrated fuel cell delivery vans to a state of commercially viable, OEM-manufactured van sales using UPS as a partner. The commercialization study will include the following major tasks:
 - The Project Team will convene to define the requirements and objectives for the study.
 - Recipient will assess the current market for incumbent delivery vans and their price point.
 - Recipient and its project partners will provide short term and long term cost projections for the fuel cell delivery van at various manufacturing volumes.
 - Recipient will complete an analysis of the market opportunity for the fuel cell delivery van. The Project Team will consider any unique market opportunities given the technical, environmental, and intangible benefits from using the fuel cell version of the delivery van.
 - Recipient will produce a final report with market opportunity findings and recommendations.

Products:

- Economic/Market Opportunity Assessment Report

Task 10 DATA COLLECTION AND ANALYSIS FOR THE ENERGY COMMISSION

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:

- Develop data collection test plan.
- Troubleshoot any issues identified.

- Collect a minimum of 6 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:
 - Non-methane hydrocarbons
 - Oxides of nitrogen
 - Non-methane hydrocarbons plus oxides of nitrogen
 - Particulate Matter
 - Formaldehyde
 - Duty cycle of the current fleet and the expected duty cycle of future vehicle acquisitions
 - Specific jobs and economic development resulting from this project
- Identify any current and planned use of renewable energy at the facility.
- Identify the source of the alternative fuel.
- Describe any energy efficiency measures used in the facility that may exceed Title 24 standards in Part 6 of the California Code Regulations.
- Provide data on potential job creation, economic development, and increased state revenue as a result of expected future expansion of usage of fuel cell delivery vans.
- Provide a quantified estimate of the project's carbon intensity values for life-cycle greenhouse gas emissions.
- Compare any project performance and expectations provided in Recipient's proposal to the Energy Commission with actual project performance and accomplishments.
- Collect and analyze data and information described above and include in the Final Report.

Products:

- Final Report including data collection and analysis

**Exhibit A
Attachment A-1**

Schedule of Products and Due Dates

| Task Number | Task Name | Product(s) | Due Date | |
|--------------------|---|---|--|--|
| 1.1 | Attend Kick-off Meeting | Updated Schedule of Products | 5/21/2014 | |
| | | Updated List of Match Funds | 5/21/2014 | |
| | | Updated List of Permits | 5/21/2014 | |
| | | Kick-Off Meeting Agenda (CEC) | 5/15/2014 | |
| 1.2 | Critical Project Review Meetings | CPR Report | 6/15/2014 | |
| | | Written determination (CEC) | 6/30/2014 | |
| | | CPR Report | 8/30/2014 | |
| | | Written determination (CEC) | 8/15/2014 | |
| | | CPR Report | 11/27/2014 | |
| | | Written determination (CEC) | 12/15/2014 | |
| | | CPR Report | 7/25/2015 | |
| | | Phase 1 Complete / Assess Phase 2 | Written determination (CEC) | 8/15/2015 |
| | | Phase 2 - Q1 through Q12 Review | CPR Report - Design Review | The 30th calendar day of each quarter during Phase 2 of this Agreement |
| | | | Written determination (CEC) | The 15th calendar day after each CPR. |
| 1.3 | Final Meeting | Written documentation of meeting agreements | 6/15/2018 | |
| | | Schedule for completing closeout activities | 5/30/2017 | |
| 1.4 | Monthly Progress Reports | Monthly Progress Reports | The 10th calendar day of each month during the approved term of this Agreement | |
| | | | | |
| 1.5 | Final Report | Final Outline of the Final Report | 3/15/2018 | |
| | | Draft Final Report (no less than 60 days before the end term of the agreement) | 5/15/2018 | |
| | | Final Report | 7/30/2018 | |
| 1.6 | Identify and Obtain Match Funds | A letter regarding match funds or stating that no match funds are provided | 4/1/2014 | |
| | | Copy(ies) of each match fund commitment letter(s) (if applicable) | 4/1/2014 | |
| | | Letter(s) for new match funds (if applicable) | Within 10 days of identifying new match funds | |
| | | Letter that match funds were reduced (if applicable) | Within 10 days of identifying reduced funds | |
| 1.7 | Identify and Obtain Required Permits | Letter documenting the permits or stating that no permits are required | 4/31/2014 | |
| | | A copy of each approved permit (if applicable) | Within 10 days of receiving each permit | |
| | | Updated list of permits as they change during the term of the Agreement (if applicable) | Within 10 days of change in list of permits | |

**Exhibit A
Attachment A-1**

| Task Number | Task Name | Product(s) | Due Date |
|--------------------|--|--|--|
| | | Updated schedule for acquiring permits as changes occur during the term of the Agreement (if applicable) | Within 10 days of change in schedule for obtaining permits |
| | | A copy of each approved final permit (if applicable) | Within 10 days of receiving each final permit |
| 1.8 | Obtain and Execute Subcontracts | | |
| | | Letter describing the subcontracts needed, or stating that no subcontracts are required | 4/31/2014 |
| | | Draft subcontracts | 15 days prior to the scheduled execution date |
| | | Final subcontracts | Within 10 days of execution |
| 2.1 | Final Vehicle Specification and Development of Acceptance Plan | | |
| | | Draft requirements definition & vehicle specification | 5/7/2014 |
| | | Final requirements definition & vehicle specification | 5/11/2014 |
| | | Draft Acceptance Plan | 5/16/2014 |
| | | Final Acceptance Plan | 5/22/2014 |
| 2.2 | Fuel Cell Hybrid Powertrain Sub-system Design Confirmation and Schematics | | |
| | | Design Review Meeting | 5/23/2014 |
| | | Mechanical Design Drawings | 6/1/2014 |
| | | Electrical Design Drawings | 6/1/2014 |
| 2.3 | Order Long-lead Time Components | | |
| | | Purchase order for H2 storage components | 7/1/2014 |
| | | Purchase order for fuel cell power electronics components | 7/1/2014 |
| | | Purchase order for any additional major, long-lead components required | 7/1/2014 |
| 2.4 | Battery Pack Build & Test | | |
| | | Traction battery pack test results | 6/25/2014 |
| | | Shipping receipts for battery pack | 7/1/2014 |
| 2.5 | Base Electric Drive Van (EVI-WI) Assembly and Commissioning at EVI | | |
| | | Base electric vehicle test results | 9/1/2014 |
| 2.6 | Base Vehicle Delivered to CEM | | |
| | | Base vehicle delivery confirmation to CEM | 9/15/2014 |
| 2.7 | Vehicle Hydrogen Storage System Integration | | |
| | | Hydrogen storage system test results | 10/8/2014 |
| | | Updated mechanical assembly drawings | 10/15/2014 |
| | | Updated electrical drawings | 10/15/2014 |
| | | Hydrogen system P&ID | 10/15/2014 |
| 2.8 | Vehicle Fuel Cell Power System Integration | | |
| | | Confirmation of vehicle completion with integrated fuel cell power system | 10/15/2014 |
| 2.9 | Vehicle Commissioning and Specification Validation at CEM & EVI | | |
| | | Fully tested fuel cell hybrid delivery van test results | 11/27/2014 |
| 2.10 | Vehicle Delivered to Operation Site | | |
| | | Vehicle delivery confirmation at demonstration site | 12/10/2014 |
| 3.1 | Operations Manual Development | | |

**Exhibit A
Attachment A-1**

| Task Number | Task Name | Product(s) | Due Date |
|--------------------|--|--|---|
| | | Draft Operators Manual | 10/27/2014 |
| | | Final Operators Manual | 11/11/2014 |
| 3.2 | Operations Training Plan Development | | |
| | | Draft Operations and Fueling Training Plan | 11/27/2014 |
| | | Final Operations and Fueling Training Plan | 12/10/2014 |
| 3.3 | Complete Operations Training | | |
| | | Operations training session(s) schedules | 12/24/2014 |
| | | List of drivers/attendees from training session(s) | 12/24/2014 |
| 3.4 | Complete Hydrogen Fueling Training | | |
| | | Fueling training session schedules | 12/24/2014 |
| | | List of drivers/staff that were trained in fueling the vehicle | 12/24/2014 |
| 4.1 | Maintenance and Support Plan Development | | |
| | | Draft plan for maintenance and support | 11/27/2014 |
| | | Final plan for maintenance and support | 12/10/2014 |
| 4.2 | Vehicle Operational Support | | |
| | | Technical support report, if any | 6/24/2015 |
| 4.3 | In-service Vehicle Data Collection and Evaluation | | |
| | | Raw operations, maintenance, and fueling data | 6/24/2015 |
| | | Monthly summary reports | The 10th calendar day of each month during the approved term of this Agreement |
| 4.4 | Assessment for Phase 2 Go/No-Go Requirements | | |
| | | Draft phase I performance assessment report | 5/11/2015 |
| | | Final phase I performance assessment report | 5/25/2015 |
| 5.1 | See DOE Scope of Work | | |
| 5.2 | Complete Project Management Plan | | |
| | | Draft project management plan | 5/15/2014 |
| | | Final project management plan | 5/22/2014 |
| 5.3 | Develop Safety Plan | | |
| | | Project level hazard analysis report | 7/12/2014 |
| | | System Safety Plan | 7/26/2014 |
| | | Maintenance Facility Audit Report for Hydrogen Readiness | 7/26/2014 |
| 5.4 | See DOE Scope of Work | | |
| 5.5 | Complete Status Reporting | | |
| | | Quarterly Status Reports | The 10th calendar day of the first month of each quarter during the approved term of this Agreement |
| 6.1 | Design Review and Updates as Needed | | |
| | | Updated electrical and mechanical drawings | 9/1/2015 |

**Exhibit A
Attachment A-1**

| Task Number | Task Name | Product(s) | Due Date |
|--------------------|---|---|---|
| 6.2 | Develop Manufacturing Plan | | |
| | | Draft manufacturing plan | 8/18/2015 |
| | | Final manufacturing plan | 9/1/2015 |
| 6.3 | Vehicle Assembly at EVI | | |
| | | Confirmation of completed 4 fuel cell hybrid delivery vans | 7/1/2016 |
| 6.4 | Vehicles Commissioning | | |
| | | Confirmation of 4 commissioned fuel cell hybrid delivery vans | 7/18/2016 |
| 6.5 | Vehicles Delivered | | |
| | | Vehicle delivery confirmation | 7/30/2016 |
| 7.1 | Complete Operations Training | | |
| | | Operations training session(s) schedule(s) | 7/30/2016 |
| | | List of drivers/staff from training session(s) | 7/30/2016 |
| 8.1 | Vehicle Operational Support | | |
| | | Technical support report, if any | 7/30/2018 |
| 8.2 | In-service Vehicle Data Collection and Evaluation | | |
| | | Raw operations, maintenance, and fueling data | The 1st calendar day of each month during the approved term of this Agreement |
| | | Monthly summary reports | The 10th calendar day of each month during the approved term of this Agreement |
| 9.1 | See DOE Scope of Work | | |
| 9.2 | Fueling Station Coordination | | 5/1/2016 |
| | | List/map of proposed fueling station locations | 4/18/2016 |
| | | List/map of final fueling station locations | 5/1/2016 |
| 9.3 | See DOE Scope of Work | | |
| 9.4 | Complete Status Reporting | | |
| | | Quarterly status reports | The 10th calendar day of the first month of each quarter during the approved term of this Agreement |
| 9.5 | Complete Economic/Market Opportunity Assessment | | |
| | | Economic/Market Opportunity Assessment Report | 7/29/2018 |
| 10 | DATA COLLECTION AND ANALYSIS FOR ENERGY COMMISSION | | |
| | | Final Report including data collection and analysis | 7/30/2018 |

To: Office of Planning and Research
PO Box 3044, 1400 Tenth Street, Room 222
Sacramento, CA 95812-3044

From: California Energy Commission
1516 Ninth Street, MS-27
Sacramento, CA 95814

Project Title: Fuel Cell Hybrid Electric Walk-In Van Development Project

Project Location – Specific: 1627 Army Court, #1

Project Location – City: Stockton, CA Project Location – County: San Joaquin County

Description of Project:

Name of Public Agency Approving Project: California Energy Commission

Name of Person or Agency Carrying Out Project: Center for Transportation and the Environment

Exempt Status: (check one)

- Ministerial (Sec. 21080(b)(1); 15268);
- Declared Emergency (Sec. 21080(b)(3); 15269(a));
- Emergency Project (Sec. 21080(b)(4); 15269(b)(c));
- Categorical Exemption. State type and section number 14 CCR 15301 Existing Facilities
- Statutory Exemptions. State code number. _____
- Common Sense Exemption. 15061(b)(3)

Reasons why project is exempt:

The proposed work will be done within an existing operational facility. The vehicles will be built at the site of an existing facility that is fully developed and is consistent with the facility's capabilities and no modification to the facility is required. The proposed project involves negligible or no expansion of existing use.

Responsible Agency

Contact Person: Darren Nguyen Area code/Telephone/Ext: 916-654-5144

Has a Notice of Exemption been filed by the public agency approving the project? Yes No

Signature: _____ Date: _____ Title: AESE

Signed by Responsible Agency

Signed by Applicant

Date received for filing at OPR: _____

RESOLUTION NO: 14-0422-16

STATE OF CALIFORNIA

**STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION**

RESOLUTION REGARDING: GRANT AWARD TO CENTER FOR TRANSPORTATION
AND THE ENVIRONMENT UNDER PON-13-604

WHEREAS the State Energy Resources Conservation and Development Commission ("Energy Commission") is considering whether to approve agreement ARV-13-019 with Center for Transportation and the Environment, to develop, validate, and deploy fuel cell hybrid electric walk-in delivery vans; and

WHEREAS the fuel cell hybrid delivery vehicle design will be able to achieve extended range through an optimum combination of fuel cell and battery power along with hydrogen energy storage;

THEREFORE BE IT RESOLVED that the Energy Commission determines that the proposed project constitutes operation or minor alteration of existing facilities falling within the categorical exemption of CEQA Guidelines, Title 14 California Code of Regulations, section 15301; and

BE IT FURTHER RESOLVED that the Energy Commission approves Grant Award # ARV-13-019 with **Center for Transportation and the Environment** for \$1,100,000.00, to develop, validate, and deploy fuel cell hybrid electric walk-in delivery vans; and

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

CERTIFICATION

The undersigned Secretariat to the Commission does hereby certify that the foregoing is a full, true, and correct copy of a Resolution duly and regularly adopted at a meeting of the California Energy Commission held on April 22, 2014.

AYE: [List of Commissioners]

NAY: [List of Commissioners]

ABSENT: [List of Commissioners]

ABSTAIN: [List of Commissioners]

Harriet Kallemeyn,
Secretariat