

EXHIBIT A
Scope of Work

TECHNICAL TASK LIST

Task #	CPR	Task Name
1		Agreement Management
2		Program Implementation
3	X	Pre-Installation Customer Site Assessment
4		EVSE Installation and Customer Training
5		Data Collection and Analysis

KEY NAME LIST

Task #	Key Personnel	Key Subcontractor(s)	Key Partner(s)
1	<u>John Richardson</u>	AeroVironment, Inc. Certified Installation Contractor Network	
2	Rob Barrosa		
3	John Richardson		
4	John Richardson		
5	Rob Barrosa		

GLOSSARY

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

Acronym	Definition
ARFVT	Alternative and Renewable Fuel and Vehicle Technology
AV	AeroVironment, Inc.
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CPR	Critical Project Review
EV	Electric Vehicle
EVSE	Electric Vehicle Supply Equipment
Energy Commission	California Energy Commission
GHG	Greenhouse Gas
EVSE-RS	An AeroVironment Inc. EVSE Model with no communication capabilities. Data gathering is done through vehicle owner's response to online questionnaires.
PEV	Plug-in Electric Vehicle

Background:

Assembly Bill 118 (Núñez, Chapter 750, Statutes of 2007), created the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVT Program). The statute, subsequently amended by AB 109 (Núñez) Chapter 313, Statutes of 2008), authorizes the 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-11-602 to provide funding opportunities under the ARFVT Program for projects which develop infrastructure necessary to store, distribute, and dispense electricity, E-85, propane, diesel substitutes, and natural gas. To be eligible for funding under PON-11-602, the projects must also be consistent with the Energy Commission's ARFVT Investment Plan updated annually. In response to PON-11-602, the Recipient submitted applications 40,43,54,55,56,57,58,64,65,66,68, and 71 which were proposed for funding in the Energy Commission's Notice of Proposed Awards *on August 16, 2012* and is incorporated by reference to this Agreement in its entirety.

On March 21, 2013, the Energy Commission released a revised Notice of Proposed Awards (NOPA), increasing the Recipient's award from \$2,000,000 to \$3,707,847.

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Problem Statement:

According to the Department of Motor Vehicles, California leads the nation with approximately 89,000 registered electric vehicles (EVs) on the road last year. But as more Plug-in Electric Vehicles (PEVs) are introduced into the market, the demand for supporting EV charging infrastructure will need to be accommodated. Often, new EV drivers won't know what infrastructure their residence will require or where to get it. Making the wrong choice can result in very high installation costs, unsafe conditions and non-optimal operation. Facing these difficulties, many customers may have negative

experiences throughout the purchasing and installation process, souring their view of PEVs as a whole. These problems are critical to avoid if PEV adoption is to gain momentum both state- and nation-wide.

Goal of the Agreement

The goal of this project is to install ~~770~~ **1425** EVSE-RS base units, Level 2, Electric Vehicle Supply Equipment (EVSEs) at residential locations.

Objectives of the Agreement:

The objectives of this project are to connect PEV Drivers through PEV dealerships, with electric vehicle charging infrastructure and to:

- Conduct a pre-installation site assessment,
- Acquire the necessary permit(s),
- Install the EVSE- RS at the place of residence all on a turnkey basis,
- Perform data collection tasks per Energy Commission requirements.

This project will conduct ~~770~~ **1425** installations of EVSE-RS units at residential locations throughout California, based on requests received from auto dealerships. Data collection will done through online questionnaires that will be filled in by the vehicle owners.

TASK 1 ADMINISTRATION

Task 1.1 Attend Kick-off Meeting

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

The Recipient shall:

- Attend a "Kick-Off" meeting with the Commission Agreement Manager (CAM), the Commission Agreement Officer (CAO), and a representative of the Accounting Office. The Recipient shall bring its Project Manager, Agreement Administrator, Accounting Officer, and others designated by the CAM to this meeting. The administrative and technical aspects of this Agreement will be discussed at the meeting. Prior to the kick-off meeting, the CAM will provide an agenda to all potential meeting participants.

The administrative portion of the meeting shall include a discussion of the following:

- The terms and conditions of the Agreement
- 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 technical portion of the meeting shall include a discussion of the following:

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

The CAM shall designate the date and location of this meeting.

Recipient Products:

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

Commission Project Manager Product:

- Kick-Off Meeting Agenda

Task 1.2 Critical Project Review (CPR) Meetings

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

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

Participants include the CAM and the Recipient and may include the Commission CAO, the Fuels and Transportation Division (FTD) team lead, other Energy Commission staff and Management as well as other individuals selected by the CAM to provide support to the Energy Commission.

The Commission Agreement Manager shall:

- Determine the location, date, and time of each CPR meeting with the Recipient. These meetings generally take place at the Energy Commission, but they may take place at another location.
- Send the Recipient the agenda and a list of expected participants in advance of each CPR. If applicable, the agenda shall include a discussion on both match funding and permits.

- Conduct and make a record of each CPR meeting. One of the outcomes of this meeting will be a schedule for providing the written determination described below.
- Determine whether to continue the project, and if continuing, whether or not modifications are needed to the tasks, schedule, products, and/or budget for the remainder of the Agreement. Modifications to the Agreement may require a formal amendment (see the Terms and Conditions, Section 8). If the CAM concludes that satisfactory progress is not being made, this conclusion will be referred to the Lead Commissioner for Transportation activities 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.

Commission Agreement Manager Products:

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

Recipient Product:

- CPR Report(s)

Task 1.3 Final Meeting

The goal of this task is to closeout this Agreement.

The Recipient shall:

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

This meeting will be attended by, at a minimum, the Recipient, the Commission Grants Office Officer, and the CAM. 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 CAM.

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 CAM will determine the appropriate meeting participants.

The administrative portion of the meeting shall be a discussion with the CAM and the CAO about the following Agreement closeout items:

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

Products:

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

Task 1.4 Monthly Progress Reports

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

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

The Recipient shall:

- Prepare a Monthly Progress Report which summarizes all Agreement activities conducted by the Recipient for the reporting period, including an assessment of the ability to complete the Agreement within the current budget and any anticipated cost overruns. Each progress report is due to the CAM within 10 days of the end of the reporting period. The recommended specifications for each progress report are contained in Section 6 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 its goals and objectives, advancing science and technology, and providing energy-related and other benefits to California.

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

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

The Recipient shall:

- Prepare an Outline of the Final Report.
- Prepare a Final Report following the approved outline and the latest version of the Final Report guidelines which will be provided by the 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:

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

Task 1.6 Identify and Obtain Matching Funds

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

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

The Recipient shall:

- Prepare a letter documenting the match funding committed to this Agreement and submit it to the CAM 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 CAM if during the course of the Agreement additional match funds are received.
- Notify the CAM within 10 days if during the course of the Agreement existing match funds are reduced. Reduction in match funds must be approved through a formal amendment to the Agreement and may trigger an additional CPR.

Products:

- A letter regarding match funds or stating that no match funds are provided
- Copy(ies) of each match fund commitment letter(s) (if applicable)
- Letter(s) for new match funds (if applicable)
- Letter that match funds were reduced (if applicable)

Task 1.7 Identify and Obtain Required Permits

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

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

The Recipient shall:

- Prepare a letter documenting the permits required to conduct this Agreement and submit it to the CAM 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 CAM.
- As permits are obtained, send a copy of each approved permit to the CAM.
- If during the course of the Agreement permits are not obtained on time or are denied, notify the CAM within 5 working days. Either of these events may trigger an additional CPR.

Products:

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

Task 1.8 Manage Subcontracts

The goal of this task is ensure quality products and to procure subcontracts required to carry out the tasks under this Agreement consistent with the terms and conditions of this Agreement and the Recipient's own procurement policies and procedures. It will also provide the Energy Commission an opportunity to review the subcontracts to ensure that the tasks are consistent with this Agreement 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 CAM for review.
- Submit a final copy of the executed subcontract.
- If Recipient decides to add new subcontractors, it shall notify the CAM.

Products:

- Draft subcontracts
- Final subcontracts

TECHNICAL TASKS**Task 2 Program Implementation**

The goal of this task is to execute all partner coordination and required pre-rollout activities.

The Recipient shall:

- Coordinate with auto dealerships
- Create a Listing of participating auto dealerships and submit to the CAM.
- Create, distribute, and submit customer outreach material to selected location and provide a copy to the CAM.

Products:

- Grant application and approval
- Listing of participating auto dealerships
- Customer outreach material

Task 3 Pre-Installation Customer Site Assessment

The goal of this task is to provide a well-developed, streamlined procedure from the first point of customer awareness through the completion of the pre-installation site assessment, permitting procedure and price quote generation.

The Recipient shall:

- Provide a consistent and user-friendly process to schedule, either online or via AV's customer call center, the customer's site assessment with a certified-contractor through our Customer Relationship Management (CRM) and Enterprise Resource Planning (ERP) systems.
- Dispatch one of our Certified Contractors to perform a detailed site assessment which includes:
 - Evaluation on existing electrical infrastructure
 - Customer education
 - Determination of installation category
 - Home readiness review
 - Site pictures
 - EV parking plan
 - EVSE sticker placement (sticker on the wall showing where certified installer and customer agree to install the EVSE)
 - Provide copies of the site assessments to the CAM

- Offer an on-line assessment process for those customers with newer homes, upgraded electrical service and short runs from the panel to the EVSE.
- Coordinate with local utilities and Authorities Having Jurisdiction (AHJ) regarding potential metering protocols, etc.
- Obtain necessary electrical permits required from the local municipality
- Generate, issue, and submit customer price quotes based on the results from the site assessment and permitting cost.
- Schedule Installation and create a document for tracking the installation schedules for all chargers.
- Coordinate with contractor network on locations, schedules, and requirements.

Products:

- Copies of the Site Assessments **for sites requiring other than standard installation**
- Copy of the installation schedule
- Copies of Customer Price Quotes

[CPR WILL OCCUR DURING THIS TASK. SEE TASK 1.2 FOR DETAILS]

Task 4 EVSE Installation and Customer Training

The goal of this task is to ensure proper installation and testing of ~~770~~ **1425** units of EVSE-RS, customer training and final inspection are completed in a timely manner.

The Recipient shall:

- Install and wire EVSE-RS units according to the required specifications identified during the site assessments.
- Install additional metering devices (if required by the local utility).
- Test the EVSE RS units with AV's proprietary EVSE Service Tool to verify operation.
- Conduct homeowner training sessions that include:
 - Product capabilities and safety features
 - Care and maintenance requirements
 - Operation and troubleshooting techniques
 - How to request service support
 - How to place orders for replacement parts and additional units
 - Understanding the warranty
- Have electrical inspector conduct final inspection.
- Photograph EVSE installations and submit to the CAM.

Products:

- Copy of electrical inspector's final inspection **or link to online posting.**
- Photographs showing installation of the EVSE RS units.

Task 5 DATA COLLECTION AND ANALYSIS

The goal of this task is to collect operational data from the station, 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 6 months of throughput, usage, and operations data from the project including, but not limited to:
 - Number of vehicles fueled per day per station
 - Number of days per year vehicles are charged per station
 - 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.
- 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 the proposal to Energy Commission with actual project performance and accomplishments.

Products:

- Data and analysis will be included in the Final Report

GRANT AMENDMENT REQUEST FORM (GARF)

CEC-277 (Revised 02/13)

CALIFORNIA ENERGY COMMISSION



Original Agreement #	ARV-12-023	Amendment #	1
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Division	Agreement Manager:	MS-	Phone
600 Fuels and Transportation Division	Aida Escala	27	916-654-4726

Recipient's Legal Name	Federal ID Number
AeroVironment, Inc.	95-2705790

Revisions: (check all that apply)		
<input checked="" type="checkbox"/> Term Extension	New End Date: 03 / 28 / 2015	Include revised schedule and complete items A, B, C, & F below.
<input checked="" type="checkbox"/> Budget Augmentation	Amendment Amount: \$ 1,707,847	Include revised budget and complete items A, B, C, D, & F below.
<input type="checkbox"/> Budget Reallocation		Include revised budget and complete items A, B, C, & F below.
<input type="checkbox"/> Scope of Work Revision		Include revised scope of work and complete items A, B, C, E, & F below.
<input type="checkbox"/> Change in Project Location or Demonstration Site		Include revised scope of work and complete items A, B, C, E, & F below.
<input type="checkbox"/> Novation/Name Change of Prime Contractor/Recipient		Include novation documentation and complete items A, B, C, & F below.
<input type="checkbox"/> Terms and Conditions Modification		Include applicable exhibits with bold/underline/strikeout and complete items A, B, C, & F below.

A) Business Meeting Information**Business Meeting approval is not required for the following types of Agreements:**

ARFVTP minor amendments delegated to Executive Director.

Proposed Business Meeting Date	06 / 12 / 2013	<input type="checkbox"/> Consent	<input checked="" type="checkbox"/> Discussion
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Business Meeting Presenter	Aida Escala	Time Needed:	5 minutes
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Please select one list serve. Altfuels (AB118- ARFVTP)

Agenda Item Subject and Description

Possible approval of Amendment 1 to Grant ARV-12-023 with AeroVironment, Inc. (Cal Electric Residential EVSE Deployment Program) to augment the agreement by \$1,707,847 and extend the term by twelve (12) months. This grant augmentation will be used to increase the number of installed Level 2 Electric Vehicle Supply Equipment (EVSE) base units from 770 to 1425 in single family and multi-unit dwellings throughout California.

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

Legal Company Name: _____ Budget _____

TBD-There will be approximately 50 minor subcontractors. \$ 20,000 per sub

No single sub will receive more than \$100,000. \$ 0.00

Total minor subcontractor budget is \$1,642,548. \$ 0.00

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

Legal Company Name: _____

D) Budget Information (only include amendment amount information)

Funding Source	Funding Year of Appropriation	Budget List No.	Amount
ARFVTF	2011/12	601.118 D	\$1,707,847
Funding Source			\$0
Funding Source			\$0
Funding Source			\$0
Funding Source			\$
R&D Program Area:	Select Program Area	TOTAL:	\$1,707,847
Explanation for "Other" selection _____			
Reimbursement Contract #:		Federal Agreement #:	

