California Energy Commission
July 10, 2024 Business Meeting
Backup Materials for Alliance for Sustainable Energy, LLC

The following backup materials for the above-referenced agenda item are available in this PDF packet as listed below:

1. Proposed Resolution
2. Contract Amendment Request Form
3. Scope of Work

[PROPOSED]

RESOLUTION NO: 24-0710-03b

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION: Alliance for Sustainable Energy, LLC

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

RESOLVED, that the CEC approves amendment 2 to Agreement 600-22-008 with Alliance for Sustainable Energy, LLC. The amendment will increase the project budget by $700,000 to $1,075,000, extend the project term by one year, and modify the scope of work to provide electric vehicle charging infrastructure modeling support for the Third Electric Vehicle Charging Infrastructure Assessment under Assembly Bill 2127 (Ting, Chapter 365, Statutes of 2018). Staff recommends approval of this item; and

FURTHER BE IT RESOLVED, that the Executive Director or their designee shall execute the same on behalf of the CEC.

CERTIFICATION

The undersigned Secretariat to the CEC 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 CEC held on July 10, 2024.

AYE:
NAY:
ABSENT:
ABSTAIN:

Dated:

_____
Kristine Banaag
Secretariat

STATE OF CALIFORNIA

CONTRACT AMENDMENT REQUEST FORM (CARF)

CEC-276 (Revised 01/2024) CALIFORNIA ENERGY COMMISSION

Original Agreement # 600-22-008 Amendment # 2

Division	Agreement Manager:	MS-	Phone
600 Fuels and Transportation Division	**Susan Eilalmaneshan**	**6**	**916-891-9154**

Contractor's Legal Name	Federal ID #
Alliance for Sustainable Energy, LLC	26-1939342

Revisions: (check all that apply)	**Additional Requirements**
☒ Term Extension New End Date: 3 / 31 / 2026	Include revised schedule and complete items A, B, C, D, & H below.
☒ Budget Augmentation Amendment Amount: $ 700,000	Include revised budget and complete items A, B, C, D, E, F, & H below.
☐ Budget Reallocation	Include revised budget and complete items A, B, C, D, & H below.
☒ Scope of Work Revision	Include revised scope of work and complete items A, B, C, D, & H below.
☐ Change in Project Location or Demonstration Site	Include revised scope of work and complete items A, B, C, D, G, & H below.
☐ DVBE Replacement	Include revised scope of work and complete items A, B, C, D, F & H below.
☐ Novation/Name Change of Prime Recipient	Include novation documentation and complete items A, B, D, & H below.
☐ Terms and Conditions Modification	Include applicable exhibits with bold/underline/ strikeout and complete items A, B, C, D & H below.

A) Business Meeting Information

Business Meeting approval is not required for the following types of Agreements:

☐ Minor amendments delegated to Executive Director per December 2013 Resolution

Proposed Business Meeting Date 7 / 10 / 2024 ☒ Consent ☐ Discussion

Business Meeting Presenter Time Needed: minutes

Please select one list serve. Clean Transportation Program

Agenda Item Subject and Description:

Alliance for Sustainable Energy, LLC. Proposed resolution approving amendment 2 to Agreement 600-22-008 with Alliance for Sustainable Energy, LLC, and adopting staff's determination that this project as amended is exempt from CEQA. The amendment will increase the project budget by $700,000 to $1,075,000, extend the project term by one year,

and modify the scope of work to provide electric vehicle charging infrastructure modeling support for the Third Electric Vehicle Charging Infrastructure Assessment under Assembly Bill 2127 (Ting, Chapter 365, Statues of 2018). Staff recommends approval of this item. (Funding source: Clean Transportation Program ARFVTF Technical Assistance Funds) Contact: Adam Davis

B) Amendment Justification (For contract amendments only)

☐ Non Competitive Bid (Attach DGS-GSPD-09-007) https://www.dgs.ca.gov/PD/Forms

☒ Exempt Other: Exemption for Clean Transportation Program Pursuant to HSC Section 44272 (j)

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

Legal Company Name:	Budget
	$ 0.00
	$ 0.00
	$ 0.00

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

Legal Company Name:

E) Budget Information (only include amendment amount information)

Funding Source	Funding Year of Appropriation	Budget List Number	Amount
ARFVTPARFVTF	2021-22	600.118K	$648,524
ARFVTPARFVTF	2022-23	600.118L	$51,476
Funding Source			$
Funding Source			$
Funding Source			$

R&D Program Area: Energy Efficiency TOTAL: $700,000

Explanation for “Other” selection

Reimbursement Contract #:

Federal Agreement #:

F) Disabled Veteran Business Enterprise Program (DVBE)

1. ☐ Exempt (Interagency/Other Government Entity)
2. ☐ Meets DVBE Requirements DVBE Amount:$_____ DVBE %:_____
   a) ☐ Contractor is Certified DVBE
   b) ☐ Contractor is Subcontracting with a DVBE:
3. ☐ Contractor selected through CMAS or MSA with no DVBE participation

4. ☒ Requesting DVBE Exemption (attach CEC 95)

G) 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:

c) ☐ Agreement **IS** exempt.

☐ Statutory Exemption. List PRC and/or CCR section number:

☒ Categorical Exemption. List CCR section number: 14 CCR 15306

☒ Common Sense Exemption. 14 CCR 15061 (b) (3) Explain reason why Agreement is exempt under the above section:

This Agreement as amended is for technical assistance where tasks are collection and analysis of pre-existing data, running models and writing reports. Consistent with the original agreement's scope, none of the tasks in this contract as amended involve physical construction, installation of equipment, or other activities that have potential for resulting in either a direct or indirect physical change in the environment. Rather, the work consists solely of computer-based and document-based activities.

Therefore, this Agreement remains exempt under CEQA Guidelines section 15306 as basic data collection, research and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource, and exempt under CEQA Guidelines section 15061(b)(3), the common sense exemption, because it can be seen with certainty that there is no possibility the activity in question may have a significant effect on the environment.

The project will not impact an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies; does not involve any cumulative impacts of successive projects of the same type in the same place that might be considered significant; does not involve unusual circumstances that might have a

significant effect on the environment; will not result in damage to scenic resources within a highway officially designated as a state scenic highway; the project site is not included on any list compiled pursuant to Government Code section 65962.5; and the project will not cause a substantial adverse change in the significance of a historical resource. Therefore, none of the exceptions to categorical exemptions listed in CEQA Guidelines section 15300.2 apply to this project and this project will not have a significant effect on the environment.

d) ☐ Agreement **IS NOT** exempt. (consult with the legal office to determine next steps)

Check all that apply

- ☐ Initial Study
- ☐ Negative Declaration
- ☐ Mitigated Negative Declaration
- ☐ Environmental Impact Report
- ☐ Statement of Overriding Considerations

H) Is this project considered "Infrastructure"?
No

I) The following items should be attached to this CARF (as applicable)

1.	Exhibit A, Scope of Work	☐	N/A	☒ Attached
2.	Exhibit B, Budget Detail	☐	N/A	☒ Attached
3.	DGS-GSPD-09-007, NCB Request	☒	N/A	☐ Attached
4.	CEC 95. DVBE Exemption Request	☐	N/A	☒ Attached
5.	CEQA Documentation	☒	N/A	☐ Attached
6.	Novation Documentation	☒	N/A	☐ Attached
7.	CEC 105, Questionnaire for Identifying Conflicts			☒ Attached

Susan Ejlalmaneshan **4/27/2024**
Agreement Manager **Date**

Jaron Weston **4/27/2024**
Office Manager **Date**

Jennifer Kalafut **5/29/2024**
Deputy Director **Date**

Appendix A
SCOPE OF WORK

TASK LIST

Task #	Task Name
1	Agreement Management
2	Program Analysis Support
3	PEV Infrastructure Assessment

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

Acronym	Definition
CAM	Commission Agreement Manager
CAFÉ	Corporate Average Fuel Economy
CTP	Clean Transportation Program
CVRP	Clean Vehicle Rebate Program
EPA	Environmental Protection Agency
EVI-PRO Model	Electric Vehicle Infrastructure-Project Model
EVSE	Electric Vehicle Supply Equipment
FTD	Fuels and Transportation Division
GHG	Greenhouse Gas
GREET Model	Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation Model
IMIA	Integrated Market Impact Assessment
LCA	Life Cycle Assessment
LCFS	Low Carbon Fuel Standard
LDV	Light Duty Vehicle
PEV	Plug-in Electric Vehicle
RPS	Renewable Portfolio Standard
TAZ	**Traffic Analysis Zone**
ZEV	Zero Emission Vehicle

BACKGROUND/PROBLEM STATEMENT

Assembly Bill (AB) 118 (Núñez, Chapter 750, Statutes of 2007) created the Clean Transportation Program. This law, as amended by AB 109 (Núñez, Chapter 313, Statutes of 2008) and later by AB 8 (Perea, Chapter 401, Statutes of 2013), authorizes the California Energy Commission (CEC) to "develop and deploy innovative technologies that transform California's fuel and vehicle types to help attain the state's climate change policies." AB 8 extended funding for the Clean Transportation Program until January 1, 2024.

California Health and Safety Code Section 44273 requires the CEC to include, in its biennial Integrated Energy Policy Report, "an evaluation of research, development, and deployment

efforts" funded by the Clean Transportation Program. This includes the expected benefits of the funded projects, in terms of air quality, petroleum use reduction, greenhouse gas (GHG) emissions reduction, technology advancement, benefit-cost assessment, and progress towards achieving these benefits. To fulfill these evaluations, the CEC contracted with the National Renewable Energy Laboratory (NREL) to provide the CEC with the necessary analytical support to develop and prepare the biennial evaluations in 2017, 2019, and 2021. Additional NREL support is needed to expand and update this evaluation for 2023.

Additionally, AB 2127 (Ting, Chapter 365, Statutes of 2018) requires the CEC to prepare a biennial assessment of the charging infrastructure needed to meet the goals of putting 5 million zero-emission vehicles (ZEVs) on California roads by 2030, and reducing emissions of greenhouse gases to 40 percent below 1990 levels by 2030. In September 2020, Governor Gavin Newsom issued Executive Order N-79-20, which directed the CEC to update the AB 2127 assessment to support expanded ZEV adoption targets.

The CEC contracted with Alliance for Sustainable Energy operating for National Renewable Energy Laboratory(NREL) to provide the CEC with analytical support in quantifying the charging needs and impacts of plug-in electric vehicles (PEVs) and their electric vehicle supply equipment (EVSE) to support the inaugural AB 2127 charging infrastructure assessment. NREL also contributed to the initial development of analysis for the second AB 2127 assessment. Additional support is needed to refine the framework for the 2023 assessment. **Further support is needed to update the model and perform new analysis for the third AB 2127 assessment.**

GOALS/OBJECTIVES OF THE AGREEMENT

The goals and objectives of this agreement are to provide analytical support to the CEC in its development of the 2023 benefits assessment for the Clean Transportation Program as well as the 2023 **and 2025** charging infrastructure ~~assessment~~ **assessments**.

FORMAT/REPORTING REQUIREMENTS

Deliverables/Reports

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

https://www.energy.ca.gov/funding-opportunities/funding-resources/formatting-reports-and-writing-style-consultants-california

Each final deliverable shall be delivered as one original, reproducible, 8 ½" by 11", camera-ready master in black ink. Illustrations and graphs shall be sized to fit an 8 ½" by 11" page and readable if printed in black and white.

Electronic File Format

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

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

- Data sets shall be in Microsoft (MS) Access or MS Excel file format.

- PC-based text documents shall be in MS Word file format.
- Documents intended for public distribution shall be in PDF file format, with the native file format provided as well.
- Project management documents shall be in MS Project file format.

Software Application Development
If this scope of work includes any software application development, including but not limited to databases, websites, models, or modeling tools, contractor shall utilize the following standard Application Architecture components in compatible versions:

- Microsoft ASP.NET framework (version 3.5 and up) Recommend 4.0
- Microsoft Internet Information Services (IIS), (version 6 and up) Recommend 7.5
- Visual Studio.NET (version 2008 and up) Recommend 2010
- C# Programming Language with Presentation (UI), Business Object and Data Layers
- SQL (Structured Query Language)
- Microsoft SQL Server 2008, Stored Procedures Recommend 2008 R2
- Microsoft SQL Reporting Services Recommend 2008 R2
- XML (external interfaces)

Any exceptions to the Software Application Development requirements above must be approved in writing by the CEC Information Technology Services Branch.

TASK 1- AGREEMENT MANAGEMENT

Task 1.1 Kick-off Meeting
The goal of this task is to establish the lines of communication and procedures for implementing this Agreement.

The Contractor shall:
- Attend a "kick-off" meeting with the CAM, the Commission Agreement Officer, and a representative of the CEC Accounting Office. The meeting may be held remotely. The Contractor shall include their Project Manager, Contracts Administrator, Accounting Officer, and others designated by the CAM in this meeting. The administrative and technical aspects of this Agreement will be discussed at the meeting.

- If necessary, prepare an updated Schedule of Deliverables based on the decisions made in the kick-off meeting.

The CAM shall:
- Arrange the meeting including scheduling the date and time.

- Provide an agenda to all potential meeting participants prior to the kick-off meeting.

Deliverables:
- An Updated Schedule of Deliverables (if applicable)

Task 1.2 Invoices

The Contractor shall:
- Prepare invoices for all reimbursable expenses incurred performing work under this Agreement in compliance with the Exhibit B of the Terms and Conditions of the Agreement.

Invoices shall be submitted with the same frequency as progress reports (Task 1.4). Invoices must be submitted to the CEC's Accounting Office.

Deliverables:
- Invoices

Task 1.3 Manage Subcontractors
No subcontractors will be involved under this Agreement.

Task 1.4 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 Contractor shall:
- Participate in progress conference calls with the CAM at least once every other week
- Prepare progress reports which summarize all Agreement activities conducted by the Contractor 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 within 15 calendar days after the end of the reporting period. The CAM will provide the format for the progress reports.

Deliverables:
- Quarterly Progress Reports

Task 1.5 Final Report
The goal of this task is to prepare a comprehensive written Final Report that describes the original purpose, approach, results and conclusions of the work completed under this Agreement. The Final Report shall be prepared in language easily understood by the public or layperson with a limited technical background.

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

The Final Report shall be a public document. If the Contractor has obtained confidential status from the CEC and will be preparing both a public and a confidential version of the Final Report, the Contractor shall perform the following subtasks for both the public and confidential versions of the Final Report.

The Contractor shall:
- Prepare the draft Final Report for this Agreement.

- Submit the draft Final Report for review and comment. The CAM will provide written comments to the Contractor. The Contractor shall review the comments and discuss any issues with the recommended changes with the CAM.

- Prepare and submit the Final Report, incorporating CAM comments.

Deliverables:
- Draft Final Report
- Final Report

Task 1.6 Final Meeting
The goal of this task is to discuss closeout of this Agreement and review the project.

The Contractor shall:
- Meet with CEC staff prior to the term end date of this Agreement. The meeting may be held remotely. This meeting will be attended by the Contractor Project Manager and the CAM. The CAM will determine any additional appropriate meeting participants. The administrative and technical aspects of Agreement closeout will be discussed at the meeting.

- Present findings, conclusions, and recommended next steps (if any) for the Agreement, based on the information included in the Final Report.

- Prepare a written document of meeting agreements and unresolved activities.

- Prepare a schedule for completing the closeout activities for this Agreement, based on determinations made within the meeting.

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

TECHNICAL TASKS

Task 2 Program Analysis Support
The goal of this task is to update previous analysis of Clean Transportation Program (Program) project-level data and assess progress toward achieving the policy goals guiding the Program. The range of evaluation metrics or topics includes, but is not limited to, climate change impacts, petroleum consumption, job creation, criteria air emissions, localized environmental impacts, as well as market transformation, short-term market forecasting and long-term scenario analysis. In general, the scope of these evaluation activities will be limited to empirical data collected on the various projects or relevant studies. Results from this framework will feed into the Benefits Report.

2.1 Benefits Analysis
The goal of this task is to analyze Program data to gauge progress toward Program and larger state goals, relying upon a range of benefits metrics.

The Contractor shall:
- Update benefit estimates for both Expected and Market Transformation Benefits. Expected Benefits are benefits directly associated with vehicles and fuels deployed through projects receiving Program funds. These include, but are not limited to, reductions in petroleum fuel use, criteria and particulate emissions, and GHG emissions, and public health benefits. Market Transformation Benefits are benefits which accrue due to the influence of Program projects on future market conditions to accelerate the adoption of new technologies. These include increased availability of public EVSE and hydrogen refueling stations, consumer incentives for ZEV investments in ZEV demonstrations and manufacturing facilities, and deployment of next-generation fuel production facilities and advanced and zero-emission medium- and heavy-duty vehicle demonstrations.

- Update Expected Benefit estimates using methodologies developed previously by Contractor and most recently used for the 2021 Benefits Report. These updates will be conducted using updated Program data. The Contractor will ensure consistency in how metrics are evaluated across projects and fuel/vehicle categories. For example, the Contractor shall perform time series analysis by drawing from the same electricity grid projections for California and other regions, relying upon the Contractor's grid modeling capabilities, existing published studies, and baseline suggestions from state agencies. Similarly, the Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation (GREET) model life cycle assessment (LCA) framework (national, or California GREET) and inputs will be relied upon for fuel carbon intensities. This will involve the following:
    - Metrics framework will exceed anticipated reporting requirements for AB 8 (e.g., will include a broader range of metrics).
    - Compilation of existing publicly-available data, not collected by the Contractor from individuals, related to analysis of social equity issues, including income, race, and age.
    - Publicly-available health impact data from the United States Environmental Protection Agency (EPA), including criteria emission impacts at the county level and any underlying aggregated data on vehicle operation or usage patterns.
    - Social cost of carbon estimates and guidance on appropriate use for analysis.
    - Social and environmental benefits associated with petroleum use reductions.
    - Jobs and economic benefits associated with Program projects, market impacts, and fuel savings.

- Update Market Transformation Benefits using updated Program data. The analytic capabilities supporting market transformation benefit estimates will continue to be improved upon by leveraging existing Contractor transportation analysis models to estimate the market impacts of Program activities within the context of California's unique transportation sector policy environment. The Contractor shall link market influence estimates to a select number of California's policies to provide robust and realistic estimates of the market impacts from Program activities. The feedback between the two estimation methods (Expected and Market Transformation) will ensure consistency and allow for greater flexibility in assessing market influences and resulting benefits associated with Program activities.

- As directed by the CAM, draw from available Program data to update previous program and project- level performance on the basis of petroleum displacement, GHG reductions, project cost efficiency, job creation, equity, economic development, or other key metrics deemed appropriate by the CAM.

- Update the retrospective analysis on past program successes where public funding is no longer necessary.

- Update the forward-looking analysis of how Program funding will support the long-term growth of charging infrastructure and hydrogen refueling infrastructure.

- Prepare and submit a *Preliminary Summary of Findings* to the CAM.

- Prepare and submit draft and final versions of a *2023 Assessment of Clean Transportation Program Benefits Report*, building upon the previous Benefits Report

methodology and summarizing the analysis and evaluation results of projects funded to date. This report shall:

- Synthesize information from the analysis results for project performance and relevant Market Assessment data from Task 2.1.
- Assess Program progress toward the 2035 goals and beyond.
  - These include, but are not limited to, progress toward a goal of five million ZEVs on California roads by 2030, toward the goals of 100 percent ZEV sales or operations under Executive Order N-79-20, and toward the goal of a carbon neutral economy by 2045.

Deliverables:

- Preliminary Summary of Findings
- 2023 Assessment of Clean Transportation Program Benefits Report – Draft Version
- 2023 Assessment of Clean Transportation Program Benefits Report – Final Version

Task 3 PEV Infrastructure Assessment

The goal of this task is to support CEC in the rapidly changing area of PEV market adoption and EVSE infrastructure planning by drawing upon the Contractor's existing software, knowledge base, and interactions with industry stakeholders. As market dynamics continue to evolve and new empirical data is collected, this task aims to examine electric grid impacts, support public/private infrastructure investments, and inform policy regarding PEVs and EVSE deployment.

Task 3.1 Assessment Framework Updates

The Contractor shall:

- Perform PEV charging infrastructure planning, including providing estimates of network capacity requirements (charger counts) and electrical load analysis (load curves) derived through development and application of the Electric Vehicle Infrastructure Projection (EVI-Pro 3) and Electric Vehicle Infrastructure for Road Trips (EVI-RoadTrip) models.
- Support regional planning efforts by providing model results at various levels of geographic resolution, including statewide, planning region, county, zip code, tract, and traffic analysis zones.
- Coordinate with CEC to ensure modeling assumptions (PEV adoption, technology attributes, residential access, etc.) are aligned with parallel efforts.
- Iterate with CEC to develop modeling inputs that are reflective of multiple future scenarios including low and high baseline (main scenarios) and variations of potential future charging behaviors and investment priorities (alternative future scenarios).
- Prepare and provide progress reports on updated model results (charger counts and load curves) for main scenarios and alternative future scenarios based on public and other comments of AB 2127 report drafts for use in the updated AB 2127 staff report.
- Perform modifications to the EVI-Pro 3 model to accommodate new alternative future scenarios (in coordination with the CEC).
- Develop, review, iterate, and finalize two main scenarios and up to 10 alternative future scenarios for the final AB 2127 commission report.
- Provide model results (charger counts and load curves) for main scenarios and alternative future scenarios for use in the final AB 2127 commission report.
- Attend virtual meetings every four weeks to review progress with the CEC (or as requested by the CEC).

Deliverables:

- Progress reports on updated EVI Pro 3 modeling results. Use bulleted list summarizing updates (no longer than 2 pages).
- Updated charger counts differentiated by charger type, disaggregated by traffic analysis zone and year for main scenarios from 2023 to 2035 for the AB 2127 **Second Assessment** staff report
- Updated charger counts for 2030 alternative futures for the AB 2127 **Second Assessment** staff report
- Updated load curves by year for two main scenarios for the AB 2127 **Second Assessment** staff report
- Updated load curves for 2030 alternative futures for the AB 2127 **Second Assessment** staff report
- Updated charger counts differentiated by charger type, disaggregated by traffic analysis zone and year for main scenarios from 2023 to 2035 for the AB 2127 **Second Assessment** commission report
- Updated charger counts for 2030 alternative futures for the AB 2127 **Second Assessment** commission report
- Updated load curves results by year for two main scenarios for the AB 2127 **Second Assessment** commission report
- Updated load curves usage results for 2030 alternative futures for the AB 2127 **Second Assessment** commission report

Task 3.2 Revised Charging Infrastructure Model

The Contractor shall:

- **Update EVI-Pro 3 model to EVI-Pro 4. Updates shall include but not be limited to:**
  - **Model will include heterogeneity of charging preference in response to price and charging speeds. Simulated driver decision making will reflect value of time, schedule flexibility, access to charging at other locations, charger speed (low- and high-speed L2 and various speeds of DCFC), and / or battery capacity.**
  - **Model will estimate charging station size and account for high / seasonal peak demand for both intra-regional and inter-regional travel.**
  - **Model will include shared use of infrastructure by light duty fleet vehicles and Class 2B trucks, including "take-home work trucks."**
  - **Model will include Traffic Analysis Zone-level (TAZ) spatial flexibility of charging demand for DCFC. Model will shift charging events to nearby TAZs to ease potential grid capacity shortages.**
  - **Model will estimate charger and electricity costs and station revenues from charging, LCFS credits, and other sources based on reasonable utilization rates for each type of charging.**
  - **Model will provide more accurate charger needs estimates at the level of TAZs to better reflect current distribution of chargers and anomalies, such as large employment centers that may skew granular estimates.**
  - **Potential additional updates as directed by CEC.**
- **Prepare and submit to the CAM progress reports on updates to EVI-Pro 4 model.**
- **Write and submit to the CAM user documentation and guidebook for EVI-Pro 4 model.**

- **Support CEC analysis of heavy-duty vehicle travel itineraries via design of queries/scripts for state-licensed vehicle data from GeoTab and transit bus GTFS schedule data.**
- **Coordinate with CEC to ensure modeling assumptions (PEV adoption, technology attributes, residential access, charging load curves etc.) are aligned with parallel efforts within CEC, including the Integrated Energy Policy Report and the SB 1000 Report.**
- **Iterate with CEC to develop modeling inputs that are reflective of a primary scenario and variations of potential future charging behaviors and investment priorities (alternative future scenarios) for the AB 2127 Third Assessment.**
- **Provide preliminary model results from EVI-Pro 4:**
    - **Charger counts differentiated by charger type at the statewide, county, and TAZ level for 2025, 2030, and 2035.**
- **Provide draft model results from EVI-Pro 4 for primary scenario for use in the AB 2127 Third Assessment Staff Report:**
    - **Charger counts differentiated by charger type, disaggregated by county and traffic analysis zone, and by other geographies upon request for all years 2025-2035.**
    - **Statewide load curves for 2030 and 2035.**
- **Provide draft model results from EVI-Pro 4 for alternative futures scenarios for use in the AB 2127 Third Assessment Staff Report:**
    - **Charger counts differentiated by charger type, disaggregated by county and by TAZ and other geographies upon request for 2030 and 2035.**
    - **Statewide, county, and TAZ-level load curves for 2030 and 2035.**
- **Perform modifications to the EVI-Pro 4 model to accommodate new alternative future scenarios (in coordination with the CEC).**
- **Provide revised model results from EVI-Pro 4 for the primary scenario for use in the AB 2127 Third Assessment Revised Staff Report and Commission Report.**
    - **Charger counts differentiated by charger type, disaggregated by county and traffic analysis zone, and by other geographies upon request for all years 2025-2035.**
    - **Statewide, county, and TAZ-level load curves for 2030 and 2035.**
- **Provide revised model results from EVI-Pro 4 for alternative future scenarios for use in the AB 2127 Third Assessment Revised Staff Report and Commission Report.**
    - **Charger counts differentiated by charger type, disaggregated by county and TAZ and other geographies upon request for 2030 and 2035.**
    - **Statewide load curves for 2030 and 2035.**
- **Attend virtual meetings every four weeks to review progress with the CEC (or as requested by the CEC).**

Deliverables:

- **Progress reports on updates to EVI-Pro 4 model.**
- **User documentation and guidebook for EVI-Pro 4 model.**
- **Preliminary model results from EVI-Pro 4.**
- **Draft model results from EVI-Pro 4 for primary scenario.**
- **Draft model results from EVI-Pro 4 for alternative futures scenarios.**
- **Revised model results from EVI-Pro 4 for primary scenario.**
- **Revised model results from EVI-Pro 4 for alternative futures scenarios.**

SCHEDULE OF DELIVERABLES AND DUE DATES

Task Number	Deliverables	Due Date
1	Agreement Management	
1.1	An Updated Schedule of Deliverables	If applicable
1.2	Invoices	Quarterly
1.4	Quarterly Progress Reports	Quarterly
1.5	Draft Final Report	2/2/2024
1.5	Final Report	2/30/2024
1.6	Written documentation of meeting agreements	Within 10 days of the final meeting
1.6	Schedule for completing closeout activities	Within 10 days of the final meeting
2	Program Analysis Support	
2.1	Preliminary Summary of Findings	10/17/2023
	2023 Assessment of Clean Transportation Program Benefits Report – Draft Version	11/30/2023
	2023 Assessment of Clean Transportation Program Benefits Report – Final Version	12/15/2023
3	PEV Infrastructure Assessment	
3.1	Assessment framework updates	
	Progress reports on updated EVI Pro 3 modeling results.	10/12/2023 and 12/29/2023
	Updated charger counts differentiated by charger type, disaggregated by traffic analysis zone and year for main scenarios from 2023 to 2035 for the AB 2127 staff report	10/21/2023
	Updated charger counts for 2030 alternative futures for the AB 2127 staff report	10/21/2023
	Updated load curves by year for two main scenarios for the AB 2127 staff report	10/21/2023
	Updated load curves for 2030 alternative futures for the AB 2127 staff report	10/21/2023
	Updated charger counts differentiated by charger type, disaggregated by traffic analysis zone and year for main scenarios from 2023 to 2035 for the AB 2127 commission report	12/15/2023
	Updated charger counts for 2030 alternative futures for the AB 2127 commission report	12/15/2023

	Updated load curves results by year for two main scenarios for the AB 2127 commission report	12/15/2023
	Updated load curves usage results for 2030 alternative futures for the AB 2127 commission report	12/15/2023
3.2	**Revised Charging Infrastructure Model**	
	Progress reports on updates to EVI-Pro 4 model.	**Monthly from 8/1/2024 to 10/31/2025**
	User documentation and guidebook for EVI-Pro 4 model.	**10/31/2024**
	Preliminary model results from EVI-Pro 4.	**10/31/2024**
	Draft model results from EVI-Pro 4 for primary scenario.	**2/28/2025**
	Draft model results from EVI-Pro 4 for alternative futures scenarios.	**2/28/2025**
	Revised model results from EVI-Pro 4 for primary scenario.	**8/31/2025**
	Revised model results from EVI-Pro 4 for alternative futures scenarios.	**8/31/2025**