



STATE OF CALIFORNIA

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 12/2019)

CALIFORNIA ENERGY COMMISSION

A) New Agreement # ZVI-21-013 (to be completed by CGL office)

B) Division	Agreement Manager:	MS-	Phone
600 Fuels and Transportation Division	Kate Reid	27	916-237-2536

C) Recipient's Legal Name	Federal ID #
Allotrope Partners LLC	46-4277309

D) Title of Project
Blueprint for Development of ZEVs in the California Logging and Biomass Sector

E) Term and Amount

Start Date	End Date	Amount
01 / 26 / 2022	08 / 31 / 2023	\$ 175,256

F) Business Meeting Information

☐ ARFVTP agreements \$75K and under delegated to Executive Director

Proposed Business Meeting Date 01 / 26 / 2022 ☒ Consent ☐ Discussion

Business Meeting Presenter Kate Reid Time Needed: 0 minutes

Please select one list serve. Altfuels (AB118- ARFVTP)

Agenda Item Subject and Description:

ALLOTROPE PARTNERS LLC. Proposed resolution approving Agreement ZVI-21-013 with Allotrope Partners LLC for a \$175,256 grant to assess and scope the potential to utilize zero-emission vehicles (ZEVs) in the logging and biomass transport industry, in particular the potential to convert logging trucks delivering logs to sawmills and chip trucks delivering wood chips to biomass power plants, and adopting staff's determination that this action is exempt from CEQA. (General Fund Funding) Contact: Kate Reid.

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:

a) ☒ Agreement **IS** exempt.

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

☒ Categorical Exemption. List CCR section number: 14 CCR section 15306 – Information Collection

☐ Common Sense Exemption. 14 CCR 15061 (b) (3) Explain reason why Agreement is exempt under the above section: Agreement is exempt under the above section: Cal. Code Regs, tit. 14, §15306, Information Collection, provides that projects which consist of basic data collection, research and resource evaluation activities which do not result in a serious or major disturbance to an



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environmental resource are categorically exempt from the provisions of CEQA. This project consists of developing a planning document for possible, future deployment of zero emission vehicles and related infrastructure equipment. The project will not cause direct physical changes to the environment, and there will be no physical construction. This project involves data collection, technology assessment, public outreach, administrative coordination efforts, planning, and similar activities. Therefore, the proposed project will have no significant effect on the environment and is categorically exempt under section 15306.

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

Legal Company Name:	Budget
Sharrah Dunlap Sawyer, Inc.	\$ 35,456.00
Blue Lake Roundstock Company, LLC	\$ 25,650.00
	\$

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

Legal Company Name:
United States Department of Agriculture, Forest Service
Warner Enterprises, Inc.
Sierra Valley Enterprises LLC

J) Budget Information

Funding Source	Funding Year of Appropriation	Budget List Number	Amount
General Fund	FY 21/22	601.129ZEV	\$175,256.00
Funding Source			\$
Funding Source			\$
Funding Source			\$
Funding Source			\$

R&D Program Area: Select Program Area TOTAL: \$

Explanation for "Other" selection

Reimbursement Contract #:

Federal Agreement #:



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CALIFORNIA ENERGY COMMISSION

K) Recipient's Contact Information

1. Recipient's Administrator/Officer

Name: Michelle Murphy Rogers

Address: 1301 Clay Street, #71180

City, State, Zip: Oakland, CA 94612

Phone: (417) 527-0675

E-Mail: mr@allotropedpartners.com

2. Recipient's Project Manager

Name: Robert Hambrecht

Address: 1301 Clay Street, #71180

City, State, Zip: Oakland, CA 94612

Phone: (415) 608-4581

E-Mail: rh@allotropedpartners.com

L) Selection Process Used

☒ Competitive Solicitation Solicitation #: GFO-20-601

☐ First Come First Served Solicitation Solicitation #: - -

M) The following items should be attached to this GRF

1. Exhibit A, Scope of Work

☒ Attached

2. Exhibit B, Budget Detail

☒ Attached

3. CEC 105, Questionnaire for Identifying Conflicts

☒ Attached

4. Recipient Resolution

☒ N/A

☐ Attached

5. CEQA Documentation

☒ N/A

☐ Attached

Agreement Manager

Date

Office Manager

Date

Deputy Director

Date

Exhibit A SCOPE OF WORK

TECHNICAL TASK LIST

Task #	CPR	Task Name
1		Administration
2		Develop Baseline Data on Logging/Biomass Hauling Trucks
3	X	Assess ZEV Options Relative to Logging/Biomass Hauling Needs
4	X	Develop Model of Pilot Project for One or More ZEV Options
5		Present Model(s) to Industry and Community for Feedback
6		Project Fact Sheet
7		Blueprint Report

KEY NAME LIST

Task #	Key Personnel	Key Subcontractor(s)	Key Partner(s)
1	Robert Hambrecht – Allotrope Partners Marc Stuart – Allotrope Partners Ethan Ravage – Allotrope Partners Michelle Murphy Rogers - Allotrope Partners Lila Holzman – Allotrope Partners	NA	NA
2	Robert Hambrecht – Allotrope Partners Marc Stuart – Allotrope Partners Mark Rychlik - Blue Lake Roundstock Company, LLC Gary Gier - Blue Lake Roundstock Company, LLC	Blue Lake Roundstock Company, LLC	United States Department of Agriculture Forest Service (USDAFS) Warner Enterprises, Inc. Sierra Valley Enterprises LLC C.T.L. Forest Management, Inc.

3	Robert Hambrecht – Allotrope Partners Marc Stuart – Allotrope Partners Mark Rychlik - Blue Lake Roundstock Company, LLC Gary Gier - Blue Lake Roundstock Company, LLC	Blue Lake Roundstock Company, LLC	NA
4	Robert Hambrecht – Allotrope Partners Marc Stuart – Allotrope Partners Mark Rychlik - Blue Lake Roundstock Company, LLC Gary Gier - Blue Lake Roundstock Company, LLC	Sharrah Dunlop Sawyer, Inc. (SDS) Blue Lake Roundstock Company, LLC	Economic Development Corporation of Shasta County (EDC) Shasta College USDAFS Warner Enterprises, Inc. Sierra Valley Enterprises LLC
5	Robert Hambrecht – Allotrope Partners Marc Stuart – Allotrope Partners Mark Rychlik - Blue Lake Roundstock Company, LLC	Blue Lake Roundstock Company, LLC	USDAFS (Not Key Partners, but to be consulted: Other industry players, key County Officials, CA Loggers.)
6	Robert Hambrecht – Allotrope Partners Mark Rychlik - Blue Lake Roundstock Company, LLC	NA	NA
7	Robert Hambrecht – Allotrope Partners Marc Stuart – Allotrope Partners Mark Rychlik - Blue Lake Roundstock Company, LLC	Blue Lake Roundstock Company, LLC	NA

8	Robert Hambrecht – Allotrope Partners Marc Stuart – Allotrope Partners Ethan Ravage – Allotrope Partners Michelle Murphy Rogers - Allotrope Partners Lila Holzman – Allotrope Partners	NA	NA
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GLOSSARY

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

Term/ Acronym	Definition
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CEC	California Energy Commission
Clean Transportation Program	Formerly known as Alternative and Renewable Fuel and Vehicle Technology Program
CPR	Critical Project Review
EDC	Economic Development Corporation of Shasta County
FTD	Fuels and Transportation Division
Recipient	Allotrope Partners LLC
SDS	Sharrah Dunlop Sawyer, Inc.
USDAFS	United States Department of Agriculture Forest Service
ZEVs	Zero-Emission Vehicles

BACKGROUND

The Budget Act of 2021 (AB 128, Ting, Chapter 21, Statutes of 2021, as amended by Senate Bill (SB) 129, Skinner, Chapter 69, Statutes of 2021 and SB 170, Skinner, Chapter 240, Budget Act of 2021) appropriated \$785,000,000 from the General Fund to support infrastructure deployments and manufacturing projects for zero-emission light-duty and medium- and heavy-duty vehicles.

On July 14, 2020, the CEC released Grant Funding Opportunity, GFO-20-601 entitled “Blueprints for Medium- and Heavy-Duty Zero-Emission Vehicle Infrastructure.” This competitive grant solicitation was to fund planning “blueprints” that will identify actions and milestones needed for the implementation of medium- and heavy-duty (MD/HD) zero-emission vehicles (ZEVs) and the related electric charging and/or hydrogen refueling infrastructure. In response to GFO-20-601, the Recipient submitted Proposal #1, which was proposed for funding in the CEC’s Notice of Proposed Awards on August 16, 2021. GFO-20-601 and Recipient’s application are hereby incorporated by reference into this Agreement in their entirety.

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 CEC’s Award, CEC’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:

The logging and biomass hauling sector in California is highly dependent upon diesel-powered heavy-duty vehicles, particularly logging trucks to haul logs and chip trucks to haul chipped material. These vehicles in many cases must deal with significant logistical challenges, traveling relatively long distances from a variety of locations on challenging roads, though generally delivering to a central location, be it a sawmill or a biomass power plant.

In many cases, these private truck operators are challenged to meet increasingly stringent emissions requirements yet have not to date entertained the possibility of zero-emission vehicles (ZEVs) within the sector as no examples or models of how to do so exist and conventional wisdom is that ZEVs would be financially unfeasible. Decarbonization of the logging/biomass sector can generate a multitude of benefits, from reducing use of diesel with related economic and environmental benefits, to promoting environmentally appropriate forest management practices by reducing the costs of managing low value forest biomass and, as a result, addressing key elements of California’s effort to address climate change as well as alleviate forest fire risk. To promote such activity in the sector, a planning “Blueprint” document must be developed, one that first assesses the needs of the industry and determines which ZEV technology might be appropriate, then generates a model pilot project proposal that, working in tandem with industry players, local and state officials, community members and financial institutions, demonstrates a technically and economically viable solution to the sector.

Goals of the Agreement:

The goal of this Agreement is to demonstrate the technical and economic viability of ZEVs in the logging sector through the development of a blueprint planning document.

Objectives of the Agreement:

The objectives of this Agreement are to present to the logging sector and related parties the technical specifications of a ZEV solution that could viably serve the sector and an outline of one or more pilot projects that would detail the costs and benefits of utilizing

ZEVs in the sector. In addition, the Blueprint would also present a plan to support the adoption of ZEVs in the broader community, by developing financing programs that could assist independent operators in purchasing new equipment and creating workforce development strategies that would assure that the local workforce would be prepared to support and maintain this new infrastructure.

TASK 1 ADMINISTRATION

Task 1.1 Attend Kick-off Meeting

The goal of this task is to establish the lines of communication and procedures for implementing this Agreement. The Commission Agreement Manager (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 CAM, the Commission Agreement Officer (CAO), and a representative of the California Energy Commission (CEC) Accounting Office. The Recipient shall bring their Project Manager, Agreement Administrator, Accounting Officer, and any others determined necessary by the Recipient or specifically requested by the CAM to this meeting.
- Provide a written statement of project activities that have occurred after the notice of proposed awards but prior to the execution of the agreement using match funds. If none, provide a statement that no work has been completed using match funds prior to the execution of the agreement. All pre-execution match expenditures must conform to the requirements in the Terms and Conditions of this Agreement.
- Discuss the following administrative and technical aspects of this Agreement:
 - Agreement Terms and Conditions
 - Critical Project Review (Task 1.2)
 - Match fund documentation (Task 1.7) No reimbursable work may be done until this documentation is in place.
 - Permit documentation (Task 1.8)
 - Subawards needed to carry out project (Task 1.9)
 - The CAM’s expectations for accomplishing tasks described in the Scope of Work
 - An updated Schedule of Products and Due Dates
 - Monthly Calls (Task 1.4)
 - Quarterly Progress Reports (Task 1.5)
 - Technical Products (Product Guidelines located in Section 5 of the Terms and Conditions)

- Final Report (Task 1.6)

Recipient Products:

- Updated Schedule of Products
- Updated List of Match Funds
- Updated List of Permits
- Written Statement of Match Share Activities

CAM Product:

- Kick-Off Meeting Agenda

Task 1.2 Critical Project Review (CPR) Meetings

CPRs provide the opportunity for frank discussions between the CEC 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 CAO, the Fuels and Transportation Division (FTD) program lead, other CEC staff and Management as well as other individuals selected by the CAM to provide support to the CEC.

The CAM shall:

- Determine the location, date, and time of each CPR meeting with the Recipient. These meetings generally take place at the CEC, but they may take place at another location or remotely.
- 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 CEC 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 CAO, 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 Grants Officer about the following Agreement closeout items:

- What to do with any equipment purchased with CEC funds (Options)
- CEC 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 Calls

The goal of this task is to have calls at least monthly between CAM and Recipient to 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 verbally 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, to verify match funds are being proportionally spent concurrently or in advance of CEC funds or are being spent in accordance with an approved Match Funding Spending Plan, to form the basis for determining whether invoices are consistent with work performed, and to answer any other questions from the CAM. Monthly calls might not be held on those months when a quarterly progress report is submitted, or the CAM determines that a monthly call is unnecessary.

The CAM shall:

- Schedule monthly calls.
- Provide questions to the Recipient prior to the monthly call.
- Provide call summary notes to Recipient of items discussed during call.

The Recipient shall:

- Review the questions provided by CAM prior to the monthly call
- Provide verbal answers to the CAM during the call.

Product:

- Email to CAM concurring with call summary notes.

Task 1.5 Quarterly Progress Reports

The goal of this task is to periodically verify that satisfactory and continued progress is made towards achieving the objectives of this 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 Quarterly 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. Progress reports are due to the CAM the 10th day of each January, April, July, and October. The Quarterly Progress Report template can be found on the ECAMS Resources webpage available at <https://www.energy.ca.gov/media/4691>.

Product:

- Quarterly Progress Reports

Task 1.6 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 CEC 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 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
- Draft Final Report
- Final Report

Task 1.7 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 CEC budget for this task will be zero dollars, the Recipient may utilize match funds for this task. 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 CEC 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 CEC 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 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 1.8 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 CEC 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)
- A copy of each final approved permit (if applicable)

Task 1.9 Obtain and Execute Subawards

The goal of this task is to ensure quality products and to procure subrecipients 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.

The Recipient shall:

- Manage and coordinate subrecipient activities.
- If requested by the CAM, submit a draft of each subaward required to conduct the work under this Agreement to the CAM for review.
- If requested by the CAM, submit a final copy of the executed subaward.
- If Recipient intends to add new subrecipients or change subrecipients, then the Recipient shall notify the CAM.

Products:

- Letter describing the subawards needed, or stating that no subawards are required
- Draft subcontracts (if requested)
- Final subcontracts (if requested)

TECHNICAL TASKS

TASK 2 DEVELOP BASELINE DATA ON LOGGING/ BIOMASS HAULING TRUCKS

The goal of this task is to gather and aggregate the data needed to ascertain the baseline capabilities of trucks serving the logging and biomass industry. In particular, the analysis will focus on logging trucks and biomass/chip hauling trucks. Such baseline data is necessary to understand the requirements that any ZEVs would need to meet to serve as replacements for existing infrastructure.

The Recipient shall:

- Work with a variety of logging, trucking firms and dealers, and timber mill and biomass plant operators in and around Shasta County, California to gather data.
- Submit to the CAM a Report Summarizing Discussions with Loggers, Truckers, Mill and Plant Operators.
- Determine from this data, typical vehicle usage and driving patterns of logging and chip trucks.

- Assess truck specifications including capacity needs (in terms of weight carried) and other qualities that indicate ability of vehicle to manage challenging environments as well as related infrastructure needs of trucks and their operators to support their activities.
- Provide a Summary Data of Trucking Requirements for Shasta County Market including trucking distances to major timber operational areas in the Northern Sierra and Trinity Alps Mountain Ranges and Shasta National Forest and capacity needs as well as other specifications, such as turn radius requirements for managing logging roads and strength or equipment to handle such roads, that address the specific needs of industry to the CAM.
- Generate summary data of findings creating a baseline set of capacity requirements of vehicles to use in Task 3, when determining appropriate ZEV technical solutions.
- Provide a Final Baseline Capacity Requirements Document describing range, capacity and other specifications needed of ZEVs to meet industry needs of major timber operational areas in the Northern Sierra and Trinity Alps Mountain Ranges and Shasta National Forest to the CAM.

Products:

- Report Summarizing Discussions with Loggers, Truckers, Mill and Plant Operators
- Summary Data of Trucking Requirements for Shasta County Market
- Final Baseline Capacity Requirements Document

TASK 3 ASSESS ZEV OPTIONS RELATIVE TO LOGGING/BIOMASS HAULING NEEDS

The goal of this task is to assess existing ZEV technical solutions, including vehicles and supporting infrastructure, and compare them to the logistical requirements needed by the logging and biomass hauling sector and select one or more solutions that appear viable for the sector.

The Recipient shall:

- Investigate capabilities of ZEV offerings, including all electric vehicles, hydrogen and related natural gas options and the infrastructure and capacity needed to support them.
- Compile a Report Summarizing Discussions with ZEV Developers, technology providers and related project developers and provide a copy to the CAM.
- Compare these capabilities to the Final Baseline Capacity Requirements Document developed in Task 2.
- Provide Summary Data of Capabilities and Costs comparing the capabilities and costs of each ZEV option and comparison of these capabilities to the Final Baseline Capacity Requirements Document to the CAM.

- Determine which ZEV offerings are best suited to the needs of the logging/biomass industry and select one or more that are appropriate for potential pilot projects.
- Produce a Report that analyzes strengths and weaknesses of each option and provide a copy to the CAM.

Products:

- Report Summarizing Discussions with ZEV Developers
- Summary Data of Capabilities and Costs
- Report that analyzes strengths and weaknesses of each option

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

TASK 4 DEVELOP MODEL OF PILOT PROJECT FOR ONE OR MORE ZEV OPTIONS

The goal of this task is to develop a model of a pilot project that would allow for the deployment of ZEVs into the logging/biomass sector and provide the necessary support and infrastructure, both physical and financial, to support deployment.

The Recipient shall:

- Execute a high-level analysis of what a pilot project would entail for each technology option.
- Provide a report summarizing high-level pilot project options for each ZEV technology to the CAM.
- Select the technology option for which a full project Blueprint will be developed.
- Provide a Recommendation Report to the CAM, defending particular technology (or technologies) to be pursued as pilot project.
- Determine the ideal location for the pilot ZEV deployment in or around Shasta County, California, based on the nature of the ZEV technology selected, and the appropriate size (i.e. number of vehicles) of the pilot.
- Provide a Preliminary Report justifying the location selected, including support from owner of said location.
- Work with owner of location, ZEV technology provider and appropriate additional resources/partners to design how the pilot would integrate into the site.
- Provide Preliminary drawing/schematics describing the layout and vehicle flow of the site to the CAM.
- Identify permitting and other local, state and federal approvals that would be necessary to implement such a pilot project and assess ability to successfully acquire said permits and approvals.

- Provide a Report on Necessary Permitting and Regulatory Needs, including approvals needed to implement Blueprint and assessment of ability to acquire said permits to the CAM.
- Identify challenges that would prevent the long-term viability of the site, such as the need for third party services to serve vehicle operators and develop strategies to address them, ideally utilizing local community resources.
- Provide a Report on Analysis of Location and additional services and infrastructure needed, including discussion of communications with community resources that would be harnessed in support of the pilot project to the CAM.
- Develop financial analysis/tools that support the development of financial structures that could finance the purchase of vehicles (by both individual operators as well as fleets) including infrastructure necessary to support deployment.
- Provide a Report on Potential Financial Approaches to building pilot projects and for supporting longer term deployment of ZEVs in the industry to the CAM. Report will include analysis of potential need for state or other public sector support necessary to catalyze deployment.
- Estimate the potential environmental impact of the pilot deployment of ZEVs into the sector as well as the longer term impact if deployment were to become more prevalent across the industry.
- Provide a Report on Potential Environmental Impact of pilot project as well as potential impacts of a broader deployment across the timber/logging industry.

Products:

- Report summarizing high-level pilot project options for each ZEV technology
- Recommendation Report
- Preliminary Report
- Preliminary drawing/schematics
- Report on Necessary Permitting and Regulatory Needs
- Report on Analysis of Location
- Report on Potential Financial Approaches
- Report on Potential Environmental Impact

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

TASK 5 PRESENT MODEL(S) TO INDUSTRY AND COMMUNITY FOR FEEDBACK

The goal of this task is to assure that technology selected and logic supporting the pilot project model is sound and that a pilot project proposal is structured in a way that reflects the needs of, and brings broader benefits to, the local community more generally. While this Task is shown as the fifth step, ongoing outreach to partners in the industry, technology providers, the community, and the financial sector will be ongoing as it is essential to the success of the previous tasks.

The Recipient shall:

- Test operational assumptions by working with partners in the industry, ZEV technology providers, engineering resources and other experts to assure technical and operational viability of the pilot approach.
- Provide Report on Feedback from partners on challenges and strengths of technology chosen to the CAM.
- Identify opportunities and needs generated by the pilot project in the community, such as workforce development to assure there are local qualified skilled workers familiar with the technology to be deployed and work with potential partners to address these opportunities and needs, such as financial service providers that can offer financing to independent truck operators, so they are in a position to take advantage of the deployment of new technologies.
- Provide Report on Opportunities and Needs that will evolve in the broader community as part of a pilot project to the CAM and report on discussions with potential partners that can help the community capitalize on opportunities and address the needs identified above.

Products:

- Report on Feedback
- Report on Opportunities and Needs

TASK 6 PROJECT FACT SHEET

The goal of this task is to develop an initial and final project fact sheet that describes the CEC-funded project and the benefits resulting from the project for the public and key decision makers.

The Recipient shall:

- Prepare an Initial Project Fact Sheet at start of the project that describes the project and the expected benefits. Use the format provided by the CAM.
- Prepare a Final Project Fact Sheet at the project's conclusion that describes the project, the actual benefits resulting from the project, and lessons learned from implementing the project. Use the format provided by the CAM.
- Provide at least (6) six High Quality Digital Photographs (minimum resolution of 1300x500 pixels in landscape ratio) from the project.

Products:

- Initial Project Fact Sheet
- Final Project Fact Sheet
- High Quality Digital Photographs

TASK 7 BLUEPRINT REPORT

The goal of this task is to summarize the work above in a publishable format that can be shared across the industry and utilized as a “pitch” to justify the financing of the pilot project described in the Blueprint.

The Recipient shall:

- Generate a single document that summarizes and aggregates the work of the previous tasks, in particular presenting the proposed pilot project in detail.
- Provide a Draft and Final Blueprint to the CAM.
- Present the document to key Partners and the CAM for final comments and approval.
- Publish the document and make it broadly available.
- Publicize the findings, presenting it to key industry partners and other key decision makers, with the aim of building support for the implementation of the pilot project.
- Provide Presentation/Slide Deck summarizing the report for presentations to the CAM.

Products:

- Draft Blueprint Report
- Final Blueprint Report
- Presentation/Slide Deck

TASK 8 DATA COLLECTION

The goal of this task is to collect data from the project and include this in regular progress reports and the Final Report, if any, according to statutory requirements. Because this is only a blueprint planning agreement, it is not expected that there will be any physical construction that would result in data collection, as listed below. However, if this agreement did result in physical construction, the minimum data collection requirements are listed below.

The Recipient shall:

- Collect the following data:
 - Number, type, date, and location of chargers or hydrogen refueling stations installed

- Nameplate capacity of the installed equipment, in kW for chargers and kg/day for hydrogen
- Number and type of outlets per charger
- Location type, such as street, parking lot, hotel, restaurant, or multi-unit housing
- Total cost per charger or refueling station, the subsidy from the CEC per charger or refueling station, federal subsidy per charger or refueling station, utility subsidy per charger or refueling station, and privately funded share per charger or refueling station
- Data on chargers over a twelve-month period, including:
 - Number of charging or refueling sessions
 - Average session duration
 - Average kWh or kg dispensed
 - Average charger or refueling station downtime
- Submit all data described above, if any, in a quarterly progress report throughout the duration of the agreement.
- Discuss data, information, and analysis described above, if any, in the Final Report

Products:

- Data collection on other relevant data and information described above, if any, will be submitted electronically in a quarterly progress report.
- Data collection, analysis, and discussion, if any, will be included in the Final Report

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION: ALLOTROPE PARTNERS 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 Agreement ZVI-21-013 with Allotrope Partners LLC for a \$175,256 grant to assess and scope the potential to utilize zero-emission vehicles (ZEVs) in the logging and biomass transport industry, in particular the potential to convert logging trucks delivering logs to sawmills and chip trucks delivering wood chips to biomass power plants; 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 January 26, 2022.

AYE:

NAY:

ABSENT:

ABSTAIN:

Liza Lopez
Secretariat