



STATE OF CALIFORNIA

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 12/2019)

CALIFORNIA ENERGY COMMISSION

A) New Agreement # ARV-21-005 (to be completed by CGL office)

B) Division	Agreement Manager:	MS-	Phone
600 Fuels and Transportation Division	Manuel Aguila	27	916-891-9138

C) Recipient's Legal Name	Federal ID #
Center for Transportation and the Environment, Inc. (CTE)	58-2052891

D) Title of Project
Blueprint for Lowest Cost Electric School Bus Fleet Charging

E) Term and Amount

Start Date	End Date	Amount
07/15/2021	08/30/2022	\$ 199,903

F) Business Meeting Information

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

Proposed Business Meeting Date: 07/15/2021 ☐ Consent ☒ Discussion

Business Meeting Presenter: Katie Herter Time Needed: 5 minutes

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

Agenda Item Subject and Description:

CENTER FOR TRANSPORTATION AND THE ENVIRONMENT. Proposed resolution approving Agreement ARV-21-005 with the Center for Transportation and the Environment for a \$199,903 grant to develop a planning "blueprint" document that will identify the actions needed to accelerate the electrification of school bus fleets in California including evaluating approaches to achieve the lowest total cost to install and utilize the necessary electric charging infrastructure, and adopting staff's determination that this action is exempt from CEQA. (Clean Transportation Program funding.) Contact: Katie Herter. (Staff Presentation: 5 minutes)

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":

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:

**GRANT REQUEST FORM (GRF)**

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 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
Sage Renewable Energy Consulting, Inc.	\$ 48,500
The Mobility House, LLC	\$ 48,500

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

Legal Company Name:
Stockton Unified School District
Blue Bird Body Company.
AlphaStruxure, LLC.
Proterra, Inc.
City of Stockton
Pacific Gas and Electric Co. (PG&E)

J) Budget Information



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CALIFORNIA ENERGY COMMISSION

Funding Source	Funding Year of Appropriation	Budget List Number	Amount
ARFVTF	FY 19/20	601.118L	\$199,903
Funding Source			\$
Funding Source			\$
Funding Source			\$
Funding Source			\$

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

Explanation for "Other" selection

Reimbursement Contract #: Federal Agreement #:

K) Recipient's Contact Information**1. Recipient's Administrator/Officer**

Name: Daniel Raudebaugh

Address: 730 Peachtree St, Suite 405

City, State, Zip: Atlanta, GA, 30308

Phone: (404)518-2322

E-Mail: dan@cte.tv**2. Recipient's Project Manager**

Name: Erik Bigelow

Address: 730 Peachtree St, Suite 405

City, State, Zip: Atlanta, GA, 30308

Phone: (404) 376-5390

E-Mail: erik@cte.tv**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

2. Exhibit B, Budget Detail

3. CEC 105, Questionnaire for Identifying Conflicts

4. Recipient Resolution

5. CEQA Documentation

☒ Attached☒ Attached☒ Attached☒ N/A☐ Attached☒ 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		Determine Operating Scenarios
3	X	Analyze Charging Scenarios
4		Outcome Review with Partners
5		Project Fact Sheet
6		Blueprint

KEY NAME LIST

Task #	Key Personnel	Key Subcontractor(s)	Key Partner(s)
1	Erik Bigelow - CTE	Sage Renewable Energy Consulting, Inc. The Mobility House, LLC	Stockton Unified School District
2	Erik Bigelow - CTE	Sage Renewable Energy Consulting, Inc. The Mobility House, LLC	Stockton Unified School District
3	Erik Bigelow - CTE	Sage Renewable Energy Consulting, Inc. The Mobility House, LLC	Stockton Unified School District
4	Erik Bigelow - CTE	Sage Renewable Energy Consulting, Inc. The Mobility House, LLC	Blue Bird Body Company Stockton Unified School District AlphaStruxure, LLC. City of Stockton PG&E
5	Erik Bigelow - CTE	Sage Renewable Energy Consulting, Inc. The Mobility House, LLC	Stockton Unified School District
6	Erik Bigelow - CTE	Sage Renewable Energy Consulting, Inc. The Mobility House, LLC	Stockton Unified School District

GLOSSARY

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

Term/ Acronym	Definition
AC	Alternating Current
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
CTE	Center for Transportation and the Environment, Inc.
DC	Direct Current
ESB	Electric School Buses
FTD	Fuels and Transportation Division
kW	Kilowatt
Recipient	Center for Transportation and the Environment, Inc.
V2G	Vehicle to Grid, the capability for a vehicle to supply energy back to the electricity grid

BACKGROUND

Assembly Bill (AB) 118 (Núñez, Chapter 750, Statutes of 2007), created the Clean Transportation Program (formerly known as the Alternative and Renewable Fuel and Vehicle Technology Program). The statute authorizes the California Energy Commission (CEC) to develop and deploy alternative and renewable fuels and advanced transportation technologies to help attain the state's climate change policies. AB 8 (Perea, Chapter 401, Statutes of 2013) re-authorizes the Program through January 1, 2024, and specifies that the CEC allocate up to \$20 million per year (or up to 20 percent of each fiscal year's funds) in funding for hydrogen station development until at least 100 stations are operational. The Clean Transportation Program has an annual budget of approximately \$100 million and provides financial support for projects that:

- Reduce California's use and dependence on petroleum transportation fuels and increase the use of alternative and renewable fuels and advanced vehicle technologies.
- Produce sustainable alternative and renewable low-carbon fuels in California.
- Expand alternative fueling infrastructure and fueling stations.

- Improve the efficiency, performance, and market viability of alternative light-, medium-, and heavy-duty vehicle technologies.
- Retrofit medium- and heavy-duty on-road and non-road vehicle fleets to alternative technologies or fuel use.
- Expand the alternative fueling infrastructure available to existing fleets, public transit, and transportation corridors.
- Establish workforce training programs and conduct public outreach on the benefits of alternative transportation fuels and vehicle technologies.

The CEC issued GFO-20-601 entitled "Blueprints for Medium- and Heavy-Duty Zero-Emission Vehicle Infrastructure" under the CEC's Clean Transportation Program. To be eligible for funding under GFO-20-601, projects must also be consistent with the CEC's current Clean Transportation Program Investment Plan, updated annually. In response to GFO-20-601, the Recipient submitted Proposal #3, which was proposed for funding in the CEC's Notice of Proposed Awards on April 8, 2021. GFO-20-601 is 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. Similarly, in the event of any conflict or inconsistency between the terms of this Agreement and the terms of the Recipient's Application, the terms of this Agreement shall control.

PROBLEM STATEMENT:

This project provides critical support of market adoption for future large fleets of electric school buses (ESB) by providing a comprehensively analyzed case study that can show best practices for charging infrastructure. ESB fleets have dramatically different requirements than transit fleets and best practices will not accurately transfer from transit or commercial fleet experience. Charging time available is typically sufficient with a 17 kilowatt (kW) Level 2 alternating current (AC) charger, which is significantly cheaper to install than direct current (DC) charging. In spite of this, at least one major bus manufacturer currently only sells buses with a high-power DC charging connection. Alternatively, with peak solar output mid-day, rapidly charging buses during the solar peak may provide lower cost charging. Multiplied across an entire fleet the savings may be significant. Higher power DC charging may also provide an avenue to realize higher future vehicle-to-grid (V2G) revenue. Determining the right balance of chargers, local generation, V2G energy transfer with utility tariffs and operating needs is a challenging problem. This analysis will provide a clear case study looking at how these trade-offs can be balanced to provide the lowest total cost solution for Stockton Unified School District, and an example for the industry to build on.

School bus fleet electrification is proceeding rapidly; however, there are over 24,000 school buses in California. This blueprint will provide a critical case study of Stockton Unified School District's school bus fleet to show actual expected infrastructure costs for an average sized school district in California, as well as determine the lowest total cost

charging infrastructure solution. By evaluating a full school bus fleet transition, this project can help provide guidance as fleet managers make decision on which hardware to install today, and avoid costly hardware that is unnecessary or potentially limiting.

GOALS OF THE AGREEMENT:

The goal of this Agreement is to identify the lowest cost way to electrify a school bus fleet by evaluating various approaches for full electrification, determine lowest total cost of infrastructure, and evaluate energy cost options to accelerate electric school bus adoption throughout the State of California.

OBJECTIVES OF THE AGREEMENT:

The objectives of this Agreement are to:

- Determine whether AC or DC charging for an electric school bus fleet has a lower total lifetime cost when taking installation, charger, and electricity costs, with predicted V2G revenue and Low Carbon Fuel Standard (LCFS) credit into consideration. The project will determine the degree to which the final plan improves on a baseline infrastructure case using all AC charging.
- Determine the value created by using a V2G connection along with local solar generation. This will be measured against a scenario without utilizing V2G energy transfer.

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 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.
- Discuss the following administrative and technical aspects of this Agreement:
 - Agreement Terms and Conditions
 - Critical Project Review (Task 1.2)
 - Match fund documentation (Task 1.6) No reimbursable work may be done until this documentation is in place.

- Permit documentation (Task 1.7)
- Subcontracts needed to carry out project (Task 1.8)
- The CAM's expectations for accomplishing tasks described in the Scope of Work
- An updated Schedule of Products and Due Dates
- Monthly Progress Reports (Task 1.4)
- Technical Products (Product Guidelines located in Section 5 of the Terms and Conditions)
- Final Report (Task 1.5)

CAM Product:

- Kick-Off Meeting Agenda

Recipient Products:

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

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 CEC 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 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 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.

Recipient Products:

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

Task 1.4 Monthly Progress Reports

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

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

The Recipient shall:

- Prepare a Monthly Progress Report which summarizes all Agreement activities conducted by the Recipient for the reporting period, including an assessment of the ability to complete the Agreement within the current budget and any anticipated cost overruns. Each progress report is due to the CAM within 10 days of the end of the reporting period. The recommended specifications for each progress report are contained in Section 6 of the Terms and Conditions of this Agreement.

- In the first Monthly Progress Report and first invoice, document and verify match expenditures and provide a synopsis of project progress, if match funds have been expended or if work funded with match share has occurred after the notice of proposed award but before execution of the grant agreement. If no match funds have been expended or if no work funded with match share has occurred before execution, then state this in the report. All pre-execution match expenditures must conform to the requirements in the Terms and Conditions of this Agreement.

Recipient Product:

- Monthly Progress Reports

Task 1.5 Final Report

The goal of the Final Report is to assess the project's success in achieving the Agreement's goals and objectives, advancing science and technology, and providing energy-related and other benefits to California.

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

The Final Report shall be a public document. If the Recipient has obtained confidential status from the 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, if requested by the CAM.
- Prepare a Final Report following the latest version of the Final Report guidelines which will be provided by the CAM. The CAM shall provide written comments on the Draft Final Report within fifteen (15) working days of receipt. The Final Report must be completed at least 60 days before the end of the Agreement Term.
- Submit one bound copy of the Final Report with the final invoice.

Recipient Products:

- Outline of the Final Report, if requested
- Draft Final Report
- Final Report

Task 1.6 Identify and Obtain Matching Funds

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

The costs to obtain and document match fund commitments are not reimbursable through this Agreement. Although the CEC 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 CEC 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 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.

Recipient 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 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.

Recipient Products:

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

Task 1.8 Obtain and Execute Subcontracts

The goal of this task is to ensure quality products and to procure subcontractors required to carry out the tasks under this Agreement consistent with the Agreement Terms and Conditions and the Recipient's own procurement policies and procedures. It will also provide CEC 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, then the Recipient shall notify the CAM.

Recipient Products:

- Letter describing the subcontracts needed, or stating that no subcontracts are required
- Draft subcontracts
- Final subcontracts

TECHNICAL TASKS

TASK 2 DETERMINE OPERATING SCENARIOS AND CONSTRAINTS

The goal of this task is to determine the operating scenarios and constraints of a fully electric fleet. This task will define the operating requirements of the fleet and ensure the analysis takes all vehicle operating needs into account.

The Recipient shall:

- Document operating time, miles driven, and parked & charging time available. This includes all regular schedule use and longer range 'activity' bus use.
- Assess possible locations for charging equipment to support full fleet electrification.
- Prepare a summary report of required full fleet operating needs and constraints, including but not limited to, all planned vehicle operating time and mileage, allowed charging time available, and other required uses for the fleet, such as out of town field trips or school sports travel.
- Provide the summary report of full fleet operating needs and constraints to the CAM.

Recipient Product:

- Summary report of full fleet operating needs and constraints

TASK 3 ANALYZE CHARGING SCENARIOS

The goal of this task is to determine charging arrangements for three scenarios: AC charging, DC charging with shared outputs, and containerized DC charging.

The Recipient shall:

- Analyze AC charging scenario with assumption of one (1) AC charger per bus and shared DC charging scenario for two to four (2 - 4) buses.
 - Analyze lowest energy cost based on two energy rates for each scenario.
 - Evaluate benefits of solar and/or battery storage to further reduce energy costs for each scenario.
 - Determine the best number of chargers per bus for each scenario.
 - Estimate LCFS credit value for each scenario.
 - Estimate overall energy cost, installation costs, and opportunities to lower costs for each scenario.
- Analyze containerized DC charging scenario.
 - Analyze lowest energy cost based on two energy rates.

- Evaluate benefits of solar and/or battery storage to further reduce energy costs for each scenario.
- Estimate the number of chargers per bus.
- Estimate overall energy cost, installation costs, and opportunities to lower costs for each scenario.
- Estimate expected installation costs for each scenario.
- Determine lowest cost scenario.
- Prepare a summary report of the analysis that determines the lowest cost charging scenario, including but not limited to:
 - Capital cost summary for various options considering charger equipment and installation.
 - Recurring cost summary including electricity, maintenance, and software/control fees.
 - Potential revenue sources including V2G utilization and LCFS credit.
 - Impact of solar and/or battery storage on further reducing energy cost.
 - Overall summary of total cost for each scenario analyzed.
- Provide the summary report of the charging scenarios to the CAM.

Recipient Product:

- Summary report of analysis supporting the lowest cost charging scenario
[CPR WILL BE HELD IN THIS TASK. See Task 1.2 for details]

TASK 4 OUTCOME REVIEW WITH PARTNERS

The goal of this task is to summarize overall findings from the case study and review results with project partners while developing final blueprint (Task 6).

The Recipient shall:

- Prepare a summary of overall findings aimed at presenting to non-technical stakeholders.
- Provide the summary of overall findings for non-technical stakeholders to the CAM.
- Review outcomes with a community-based organization and Stockton Unified School District.
- Review analysis results with the City of Stockton to receive input on permitting process.
- Review results with PG&E Fleet electrification expert.

- Adjust the analysis report to reflect new information from partner review that leads to a change in assumptions or findings.
- Prepare a summary report of the discussion and feedback from the partner review process, including but not limited to:
 - Summary of meetings with partners for feedback.
 - Revised analysis assumptions and outputs if the input leads to changes.
 - Summary of overall findings for a non-technical audience.
- Provide summary report of partner reviews and feedback to the CAM.

Recipient Products:

- Summary report of findings for non-technical stakeholder presentations
- Summary report of partner reviews and updates needed

TASK 5 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.

Recipient Products:

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

TASK 6 BLUEPRINT

The goal of this task is to prepare the final Stockton case study report documenting findings, recommendations, and generalized conclusions to help accelerate electric school bus adoption throughout the State of California.

The Recipient shall:

- Create a Blueprint for the lowest cost way to electrify the Stockton Unified School District school bus fleet that can be replicated throughout California.
- Include project background, project goals, recognition of project partners, methodology, analysis of operating and charging scenarios, financial considerations and opportunities to lower costs, and final conclusions.

Recipient Products:

- Outline of Blueprint
- Draft Blueprint
- Final Blueprint

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION - RE: CENTER FOR TRANSPORTATION AND THE ENVIRONMENT, INC.

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 ARV-21-005 with the Center for Transportation and the Environment, Inc. for a \$199,903 grant to develop a planning blueprint that will identify the actions needed to accelerate the electrification of school bus fleets in California including evaluating approaches to achieve the lowest total cost to install and utilize the necessary electric charging infrastructure; and

FURTHER BE IT RESOLVED, that the Executive Director or his/her 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 15, 2021.

AYE:

NAY:

ABSENT:

ABSTAIN:

Liza Lopez
Secretariat