



STATE OF CALIFORNIA

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 12/2019)

CALIFORNIA ENERGY COMMISSION

A) New Agreement # ARV-21-027 (to be completed by CGL office)

B) Division	Agreement Manager:	MS-	Phone
600 Fuels and Transportation Division	Madison Jarvis	27	916-237-2555

C) Recipient's Legal Name	Federal ID #
The Regents of the University of California, Riverside	95-6006142

D) Title of Project
Developing a MHD ZEV Infrastructure Blueprint for the South Coast

E) Term and Amount

Start Date	End Date	Amount
08 / 11 / 2021	03 / 31 / 2023	\$ 200,000

F) Business Meeting Information

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

Proposed Business Meeting Date 8 / 11 / 2021 ☐ Consent ☒ Discussion

Business Meeting Presenter Kathryn Reid Time Needed: 5 minutes

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

Agenda Item Subject and Description:

The Regents of the University of California, Riverside. Proposed resolution approving Agreement ARV-21-027 with the Regents of the University of California, Riverside for a \$200,000 grant to develop a blueprint that will enable the adoption of MD/HD battery electric and fuel cell electric vehicles for fleets in the South Coast region, and adopting staff's determination that this action is exempt from CEQA.

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: Cal. Code Regs, tit. 14, §15306, Information Collection

☐ Common Sense Exemption. 14 CCR 15061 (b) (3) Explain reason why 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 environmental resource are categorically exempt from the provisions of CEQA. This project



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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
V. John White Associates	\$ 20,000
	\$ 0.00
	\$ 0.00

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

Legal Company Name:

J) Budget Information

Funding Source	Funding Year of Appropriation	Budget List Number	Amount
ARFVTP	FY 19/20	601.118L	\$200,000
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: Tom Katsikakis

Address: 1084 Columbia Avenue



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City, State, Zip: Riverside, CA
92507

Phone: (951) 781-5791

E-Mail: tkatsikakis@cert.ucr.edu

2. Recipient's Project Manager

Name: Arun Raju

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 | <input checked="" type="checkbox"/> | Attached |
| 2. Exhibit B, Budget Detail | <input checked="" type="checkbox"/> | Attached |
| 3. CEC 105, Questionnaire for Identifying Conflicts | <input checked="" type="checkbox"/> | Attached |
| 4. Recipient Resolution | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |
| 5. CEQA Documentation | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |

Agreement Manager

Date

Office Manager

Date

Deputy Director

Date

CALIFORNIA ENERGY COMMISSION

Address: 1084 Columbia Avenue

City, State, Zip: Riverside, CA
92507

Phone: (951) 781-5686

E-Mail: arun@engr.ucr.edu

Exhibit A SCOPE OF WORK

TECHNICAL TASK LIST

Task #	CPR	Task Name
1		Administration
2		MD/HD Vehicle and Fleet Analysis
3		Electricity and Fuel Resource Analysis
4	X	Infrastructure Design Basis
5		Benefit Analysis
6		Project Fact Sheet
7		Blueprint

KEY NAME LIST

Task #	Key Personnel	Key Subcontractor(s)	Key Partner(s)
1	Arun Raju (UCR); Alfredo Martinez-Morales (UCR); Michael Todd (UCR); Miroslav Penchev (UCR)		
2	Arun Raju (UCR); Alfredo Martinez-Morales (UCR); Michael Todd (UCR); Miroslav Penchev (UCR)		Riverside Transportation Agency (RTA); City of Riverside
3	Arun Raju (UCR); Alfredo Martinez-Morales (UCR); Michael Todd (UCR); Miroslav Penchev (UCR)		Riverside Public Utilities (RPU); City of Riverside
4	Arun Raju (UCR); Alfredo Martinez-Morales (UCR); Michael Todd (UCR); Miroslav Penchev (UCR)	V. John White Associates	RTA; RPU; City of Riverside; SCAQMD; Volvo; ChargePoint; Hyzon Motors; H2B2; StratosFuel; CCA; CEJA; and CCAEJ

Task #	Key Personnel	Key Subcontractor(s)	Key Partner(s)
5	Arun Raju – UCR; Alfredo Martinez-Morales – UCR; Michael Todd – UCR; Miroslav Penchev - UCR	V. John White Associates	RTA; RPU; City of Riverside; SCAQMD; Volvo; ChargePoint; Hyzon Motors; H2B2; StratosFuel; CCA; CEJA; and CCAEJ
6	Arun Raju – UCR; Alfredo Martinez-Morales – UCR; Michael Todd – UCR; Miroslav Penchev - UCR		RPU; City of Riverside; SCAQMD; CCA; CEJA; and CCAEJ

GLOSSARY

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

Term/ Acronym	Definition
BEV	Battery-Electric Vehicle
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CCA	Coalition for Clean Air
CCAEJ	Center for Community Action and Environmental Justice
CEC	California Energy Commission
CEJA	California Environmental Justice Alliance
Clean Transportation Program	Formerly known as Alternative and Renewable Fuel and Vehicle Technology Program
CPR	Critical Project Review
EMFAC	EMission FACtor
FCEV	Fuel Cell Electric Vehicle
FTD	Fuels and Transportation Division
GHG	Greenhouse Gas
HD	Heavy-duty
MD/HD	Medium-duty and Heavy-duty
NOx	Nitrogen Oxides
PM _{2.5}	Particulate Matter 2.5

Term/ Acronym	Definition
Recipient	The Regents of the University of California, Riverside
RPU	Riverside Public Utilities
RTA	Riverside Transportation Agency
SCAQMD	South Coast Air Quality Management District
UCR	University of California, Riverside
ZEV	Zero-Emission Vehicle

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 #44, 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:

California's South Coast (i.e., Inland Empire and much of the greater Los Angeles region), and the San Joaquin Valley, are the two regions that will have the most difficulty achieving attainment of California's climate change goals due to a number of factors. Some of these factors are beyond each region's control and require best efforts from local, state and federal partners. Increased control of nitrogen oxides (NOx) will be required for ozone and particulate matter (PM_{2.5}) attainment. The state's regulation of mobile sources is driven by the emission reduction needs in the South Coast and the San Joaquin Valley, which contain a large majority of emissions inventory caused by mobile sources.

Medium- and heavy-duty (MD/HD) diesel trucks are the largest source of NOx emissions in the South Coast Air Quality Management District (SCAQMD). Moreover, NOx emission from these trucks is more than three and a half times that from the 200 highest emitting stationary sources (i.e., refineries, power plants). Attainment of federal ozone standards is not feasible without rapidly addressing emissions from these MD/HD vehicles.

Goals of the Agreement:

The goal of this Agreement is to develop a blueprint that is comprehensive and represents a viable strategy to assist in the identification of the most cost-effective technology suites, financial incentives, infrastructure upgrades, and equipment mixes for identifying actions and milestones needed for the implementation of MD/HD zero-emission vehicles (ZEVs) and the related electric charging and/or hydrogen refueling infrastructure in the South Coast. This blueprint will accelerate the deployment of MD/HD ZEVs at the local and regional levels with a realistic, holistic, and futuristic view of regional transportation planning and will propagate, organize, and simplify the process of transitioning to zero-emission operations.

Objective of the Agreement:

The objectives of this Agreement are to develop a blueprint for a MD/HD battery-electric vehicle (BEV) charging facility and a fuel cell electric vehicle (FCEV) refueling facility by soliciting input from community leaders, local governments, technology and building developers, utilities, and experts in logistics, sustainability, transportation, energy generation and distribution, international trade, regional planning, environmental justice, and clean energy finance; and develop a blueprint that will identify all details needed to design the facility, including: 1) Technology Assessment,

2) Design Basis, 3) Stakeholder Engagement, and 4) Techno-economic Cost-benefit Analysis.

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.
- Discuss the following administrative and technical aspects of this Agreement:
 - Agreement Terms and Conditions
 - Critical Project Review (Task 1.2)
 - Match fund documentation (Task 1.6). No reimbursable work may be done until this documentation is in place.
 - Permit documentation (Task 1.7)
 - Subcontracts needed to carry out project (Task 1.8)
 - The CAM's expectations for accomplishing tasks described in the Scope of Work
 - An updated Schedule of Products and Due Dates
 - Monthly Progress Reports (Task 1.4)
 - Technical Products (Product Guidelines located in Section 5 of the Terms and Conditions)
 - Final Report (Task 1.5)

Recipient Products:

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

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 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.

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.

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.
- 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 1.6 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.

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.

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.

Products:

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

TECHNICAL TASKS

TASK 2 MD/HD VEHICLE AND FLEET ANALYSIS

The goal of this task is to perform all the research, data collection, inventory, and data analysis necessary for conducting a MD/HD vehicle and fleet analysis of the South Coast region.

The Recipient shall:

- Develop an inventory of MD/HD vehicle population and fleet details using resources such as the California Air Resources Board's Emission FACtor (EMFAC) model, and the Mobile Source Control Plan.
- Provide a copy of the MD/HD Vehicle Population Inventory to the CAM.

- Develop a database of existing ZEV population information and anticipated ZEV deployment scenarios based on relevant rules and mandates adopted by the state, internal targets set by large fleet operators, original equipment manufacturer forecasts, and other stakeholder input.
- Provide a copy of the Database of ZEV Population Information to the CAM.
- Identify specific vehicle classes, modes, and drive cycles of the current and anticipated ZEV population.
- Develop a database of major driving routes, current electric charging and hydrogen refueling locations, and other landmarks such as garages, service centers, and destinations.
- Provide a copy of the Database of driving routes, charging/refueling locations to the CAM.

Products:

- MD/HD Vehicle Population Inventory
- Database of ZEV Population Information
- Database of driving routes, charging/refueling locations

TASK 3 ELECTRICITY AND FUEL RESOURCE ANALYSIS

The goal of this task is to perform all the research, data collection, and data analysis necessary for carrying out the electricity and fuel resource analysis.

The Recipient shall:

- Conduct load studies of the utilities within the project border including the location of substations, capacity for additional asset resources, planned solar and wind facilities.
- Research and try to secure low, zero or negatively priced renewable electricity, that is likely to be curtailed.
- Assess renewable and low-carbon electricity availability for recharging and for hydrogen production through electrolysis.
- Assess additional renewable hydrogen production pathways such as renewable syngas methanation.
- Prepare an Electricity and Fuel Resource Report with the data collected in Task 3 and provide a copy to the CAM.

Products:

- Electricity and Fuel Resource Report

TASK 4 INFRASTRUCTURE DESIGN BASIS

The goal of this task is to perform all the research, data collection, and data analysis necessary for preparing the infrastructure design basis.

The Recipient shall:

- Identify charging and refueling requirements for each class of anticipated zero-emission MD/HD population including number of charging stations, number of chargers, electricity demand, number of refueling stations, anticipated hydrogen demand, electrolyzer specifications, anticipated energy storage requirements, and the location of charging and refueling stations, details of public or private access, and anticipated vehicle traffic.
- Incorporate charging and refueling requirements into the methodology parameters, include information such as battery range per charge for different vehicle classes and modes, vehicle mileage range and driving routes, and charging port requirements.
- Use published data, and OEM, fleet operator and other stakeholder input to assess the anticipated technology status over the project life including vehicle and charging technologies.
- Prepare an Infrastructure Design Basis Report with the data collected in Task 4 and provide a copy to the CAM.

Products:

- Infrastructure Design Basis Report

[CPR WILL OCCUR DURING THIS TASK. See Task 1.2 for details.]

TASK 5 BENEFIT ANALYSIS

The goal of this task is to perform all the research, data collection, and data analysis necessary for performing an analysis of projected benefits.

The Recipient shall:

- Calculate the anticipated reductions in criteria pollutants, air toxics, and greenhouse gas (GHG) emissions over the project life.
- Quantify the contribution of the project over its lifetime in helping the South Coast and the state attain air quality and GHG reduction targets.
- Quantify the anticipated health benefits to the local communities, with particular emphasis on disadvantaged neighborhoods.
- Estimate the number of temporary and permanent jobs created locally, and the anticipated economic benefits to the local governments.

- Prepare a Benefit Analysis Report with the data collected in Task 5 and provide a copy to the CAM.

Products:

- Benefit Analysis Report

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

The goal of this task is to complete the development of a comprehensive, implementable, and replicable blueprint that details the steps needed for a regional electrified transportation network in the South Coast.

The Recipient shall:

- Develop the MD/HD ZEV infrastructure blueprint for the South Coast region incorporating data from Tasks 2-5, and additional stakeholder input.
- Integrate the following component into the blueprint:

- Anticipated vehicle population information over the project life including technology status, charging/refueling requirements, and service and maintenance requirements.
- Electricity supply details including substation locations, hydrogen supply details including locations and capacity of electrolysis facilities.
- Charging and refueling station locations, charging refueling station specifications for each station including number of chargers and capacity, energy storage requirements, if any, of the charging/refueling locations, and anticipated vehicle traffic.
- Locations and specifications of maintenance and service facilities, either tied to the refueling stations or independent.
- Cost of designing, building and operating the facilities, and the lifetime ownership costs to fleet operators, including electricity/fuel costs, and related incentives, subsidies and other factors.
- Timeline and anticipated schedule of each ZEV deployment scenario, design and construction of recharging/refueling, and maintenance/service facilities, and required capacity expansion.

Products:

- Draft Blueprint
- Final Blueprint

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION THE REGENTS OF THE UNIVERSITY OF CALIFORNIA, RIVERSIDE

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-21-027 with the Regents of the University of California, Riverside for a \$200,000 grant to develop a blueprint that will enable the adoption of MD/HD battery electric and fuel cell electric vehicles for fleets in the South Coast region; 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 August 11, 2021.

AYE:

NAY:

ABSENT:

ABSTAIN:

Liza Lopez
Secretariat