



STATE OF CALIFORNIA

GRANT REQUEST FORM (GRF)

CEC-270 (Revised 12/2019)

CALIFORNIA ENERGY COMMISSION

A) New Agreement #

(to be completed by CGL office)

ARV-21-023

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

C) Recipient's Legal Name	Federal ID #
Equilon Enterprises LLC dba Shell Oil Products US	52-2074528

D) Title of Project
Shell Multi-Modal Hydrogen Refueling Station

E) Term and Amount

Start Date	End Date	Amount
08 / 11 / 2021	03 / 31 / 2025	\$ 4,000,000

F) Business Meeting Information

ARFVTP agreements \$75K and under delegated to Executive Director
 Proposed Business Meeting Date 08 / 11 / 2021 Consent Discussion
 Business Meeting Presenter Madison Jarvis Time Needed: 5 minutes
 Please select one list serve. Altfuels (AB118- ARFVTP)

Agenda Item Subject and Description:

EQUILON ENTERPRISES LLC. Proposed resolution approving Agreement ARV-21-023 with Equilon Enterprises LLC dba Shell Oil Products US for a \$4,000,000 grant to develop and demonstrate the first multi-modal hydrogen refueling station in California, and adopting staff's determination that this action is exempt from CEQA. The multi-modal hydrogen refueling station will serve hydrogen fuel cell powered on-road heavy-duty vehicles and locomotives at the Port of West Sacramento and will support the Sierra Northern Hydrogen Locomotive Project resulting from the same solicitation and previously awarded. (Clean Transportation Program funding). Contact: Madison Jarvis (Staff Presentation: 5 minutes)

G) California Environmental Quality Act (CEQA) Compliance

- 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 .
- 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, sections 15303, 15304
 - Common Sense Exemption. 14 CCR 15061 (b) (3) Explain reason why Agreement is exempt under the above section:
Cal. Code Regs., tit. 14, sect. 15303 ("New Construction or Conversion of Small Structures") provides that projects which consist of construction and location of limited



GRANT REQUEST FORM (GRF)

numbers of new, small facilities or structures; installation of small new equipment and facilities in small structures; and the conversion of existing small structures from one use to another where only minor modifications are made in the exterior of the structure, are categorically exempt from the provisions of the California Environmental Quality Act. The proposed project consists of installation of small new equipment, including hydrogen storage, compression and dispensing equipment with the tallest physical structure at approximately 23-feet in height. Therefore, the proposed project falls within section 15303 and will not have a significant effect on the environment.

Cal. Code Regs., tit. 14, sect. 15304 ("Minor Alterations to Land") provides that projects which consist of minor public or private alterations in the condition of land, water, and/or vegetation which do not involve removal of healthy, mature, scenic trees except for forestry or agricultural purposes, are categorically exempt from the provisions of the California Environmental Quality Act. This project will require some clearing of vegetation and site preparation of a 2.4 acre portion of the parcel, excavation to install foundations and driveways, and trenching for interconnecting lines that would convey fuel to the dispensers and for conduits between equipment and switchgear and new power service. There is little existing vegetation in this portion of land thus alterations to the condition of land will be minor. Therefore, the proposed project falls within section 15304 and will not have a significant effect on the environment.

- 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
TBD (Engineering, Permitting, Construction, Management)	\$ 2,400,000.00
Institute of Gas Technology dba Gas Technology Institute (match only)	\$ 0.00
	\$ 0.00

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

Legal Company Name:

J) Budget Information



GRANT REQUEST FORM (GRF)

Funding Source	Funding Year of Appropriation	Budget List Number	Amount
ARFVTP	FY 19/20	601.118L	\$4,000,000
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: Wayne Leighty, Shell New Energies
Address: 650 California St., Suite 2250
City, State, Zip: San Francisco, CA 94108
Phone: (832) 680-9825
E-Mail: w.leighty@shell.com

2. Recipient's Project Manager

Name: Joseph Sawa
Address: 650 California St., Suite 2250
City, State, Zip: San Francisco, CA 94108
Phone: (415) 696-9126
E-Mail: joseph.sawa@shell.com

L) Selection Process Used

- Competitive Solicitation Solicitation #: GFO-20-604
- 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 type="checkbox"/> N/A | <input checked="" type="checkbox"/> Attached |

<i>Madison Jarvis</i> _____ Agreement Manager	<u>7/1/2021</u> Date
<i>Elizabeth John</i> _____ Office Manager	<u>7/1/2021</u> Date
<i>John Butler II</i> _____ Deputy Director	<u>7/1/2021</u> Date

Exhibit A

SCOPE OF WORK

TECHNICAL TASK LIST

Task #	CPR	Task Name
1		Administration
2	X	Products Development
3		Hydrogen Safety Plan and Design Review
4	X	Station Development
5	X	Station Operation, Data Collection & Analysis
6		Project Fact Sheet

KEY NAME LIST

Task #	Key Personnel	Key Subcontractor(s)	Key Partner(s)
1	Joseph Sawa (Shell) Wayne Leighty (Shell)		
2	Joseph Sawa		
3	Joseph Sawa		
4	Joseph Sawa	TBD (Engineering, Permitting, Construction Management) Institute of Gas Technology dba Gas Technology Institute	
5	Joseph Sawa		
6	Joseph Sawa		
7	Joseph Sawa		

GLOSSARY

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

Term/Acronym	Definition
AHJ	Authority Having Jurisdiction
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer

Term/Acronym	Definition
CEC	California Energy Commission
Clean Transportation Program	Formerly known as the Alternative and Renewable Fuel and Vehicle Technology Program
CPR	Critical Project Review
FTD	Fuels and Transportation Division
HSP	Hydrogen Safety Panel
NREL	National Renewable Energy Laboratory
Recipient	Equilon Enterprises LLC DBA Shell Oil Products US

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-20-604 entitled "Hydrogen Fuel Cell Demonstrations in Rail and Marine Applications at Ports (H2RAM)" under the CEC's Natural Gas Research Program for Group 1 and Group 3 and the Clean Transportation Program for Group 2 "Shared Hydrogen Fueling Infrastructure." To be eligible for Clean Transportation Program funding under GFO-20-604 for Group 2, projects must also be consistent with the CEC's current Clean Transportation Program Investment Plan, updated annually. In response to GFO-20-604, the Recipient submitted Proposal #1 in Group 2, which was proposed for funding in the CEC's Notice of Proposed Awards on December 10, 2020. GFO-20-604 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:

High-throughput clusters, like marine ports, concentrate harmful criteria pollutants like diesel particulate matter and oxides of nitrogen. Locomotives and marine vessels emit approximately 90 percent of diesel particulate matter and 24 percent of statewide oxides of nitrogen. A zero-emission alternative is needed for these high-output, high-utilization vehicles that is cost-competitive with diesel engines, for widespread adoption that will result in significant reductions in these harmful emissions. These alternatives have not previously been available but are now being developed and must be supported and accelerated to meet California policy objectives.

The case is evident for a multi-modal hydrogen refueling station at a high-throughput cluster, like a marine port, where high utilization of hydrogen fuel could be achieved by supplying diverse and complementary applications, including on-road vehicles, locomotives, marine vessels, and cargo handling equipment. However, these applications need the hydrogen refueling station to be in place in order to come to market, and they also need an affordable cost of hydrogen to be competitive with diesel for long-term operation and increased adoption.

It is important to address these challenges now, in order to demonstrate the effective operation and use of the station and vehicles. This will enable expanded adoption of these vehicles and achieve local air quality benefits. It will also increase the availability of these vehicles statewide and establish a design and cost-effective approach that can be replicated to other ports and high-throughput clusters statewide.

Goals of the Agreement:

The project will demonstrate the safe operation of a large-scale hydrogen fueling station in support of the deployment of heavy-duty on-road and off-road zero-emission vehicles.

The goals of this Agreement are to:

- Build, own, and operate a Multi-modal Hydrogen Refueling station that provides hydrogen fuel at 350-bar pressure to on-road vehicles (up to Class 8 trucks) on the public open retail side of the station and at 250-bar pressure to a fuel cell-powered locomotive on the private rail tracks side of the station.¹
- Achieve low-cost hydrogen fuel by implementing important innovations in standardized next-generation hydrogen refueling station equipment. This includes implementing a high-flow variant of a dual-hose dispenser, and utilizing hydrogen fuel supply via a “trailer-swap” mode of operation.
- Enhance fueling performance through the inclusion of a thermal management subsystem in the station design.
- Enable long-term operation of the hydrogen fueling infrastructure with options to expand to meet growing demand across a wide range of applications including on-road vehicles, rail, marine, and cargo handling equipment.
- Demonstrate and deliver significant emission reductions from mobile sources, through the displacement of diesel fuel from particularly high-emitting locomotives and drayage trucks in locations of concentrated emissions.
- Demonstrate and enable growth in economic activity in West Sacramento through increased adoption of fuel cell-powered applications and the expansion of the proposed *Multi-modal Hydrogen Refueling Station*.

Objectives of the Agreement:

The objectives of this Agreement are to develop, demonstrate, and enable long-term operation of the first Multi-modal Hydrogen Refueling Station in California, providing hydrogen fuel to both fuel cell on-road vehicles and fuel cell-powered locomotives.

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.

¹ Sierra Northern Railroad and its technical partners have developed preliminary engineering for the locomotive to be a maximum of 260,000 pounds, 85,000 lbs Starting Tractive Effort, average power of 268 hp and maximum power of 2000 hp, travel at a maximum speed of 10 mph, and can store onboard nominally 222 kg of hydrogen using eight 250 bar hydrogen storage cylinders.

The Recipient shall:

- Attend a "Kick-Off" meeting with the CAM, the Commission Agreement Officer (CAO), and a representative of the CEC's 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

Commission Agreement Manager 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 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.

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, 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.

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.

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 (Draft subcontracts may be redacted, as necessary and reasonable, but must include, at a minimum, all of the parties involved, the subcontract duration/term, the budget, the scope of work, the signatures of the parties involved, the dates of signatures, and the terms that demonstrate compliance with the requirements for Subcontracts under the Clean Transportation Program Terms & Conditions)
- Final subcontracts (Final subcontracts may be redacted, as necessary and reasonable, but must include, at a minimum, all of the parties involved, the subcontract duration/term, the budget, the scope of work, the signatures of the parties involved, the dates of signatures, and the terms that demonstrate compliance with the requirements for Subcontracts under the Clean Transportation Program Terms & Conditions)

TECHNICAL TASKS

TASK 2 PRODUCTS DEVELOPMENT

The goal of this task is to develop the station equipment to be used in the proposed Multi-modal Hydrogen Refueling Station.

The Recipient shall:

- Develop the Shell Neptune station module.
- Develop specifications for the dual-hose dispenser based on market conditions including pressure, flow rate, and fueling protocol.
- Develop the station receiving panel for the “trailer-swap” mode of operation.
- Develop the equipment configuration and controls for the multi-modal operation.
- Develop the fueling protocol to be used in the dispenser fueling the locomotive.
- Prepare a Products Summary Report that includes the following:
 - A description of the station module, dispenser, and panel;
 - A description of the equipment configuration;
 - A description of the fueling protocol; and
 - A discussion of the readiness of these products to be implemented.

Products:

- Products Summary Report

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

TASK 3 HYDROGEN SAFETY PLAN AND DESIGN REVIEW

The goal of this task is to develop a hydrogen safety plan that the Recipient and any subcontractors or individuals involved in the construction, operation, and maintenance of the shared hydrogen fueling infrastructure will follow throughout the life of the equipment.

The Recipient shall:

- Collaborate with the Pacific Northwest National Laboratory or Center for Hydrogen Safety’s Hydrogen Safety Panel (HSP) to ensure the plan is comprehensive and demonstrates a strong commitment to safety.
- Prepare a *Preliminary Hydrogen Safety Plan* that includes, but is not limited to the following:

- A description of the Recipient’s work and activities to ensure safety, the unique technologies being demonstrated, and the evaluation results of any hazard analysis performed.
- A description about how the Recipient will adhere to the most recent public guidelines for safety planning for hydrogen and fuel cell projects.
- A description about how the Recipient will conform to the most current version of the National Fire Protection Association (NFPA) 2, Hydrogen Technologies Code being used by the authority having jurisdiction (AHJ) where the facilities and equipment will be located
- A description about how the Recipient will provide safety training for all operators to conduct the demonstration.
- Submit the *Preliminary Hydrogen Safety Plan* to the HSP for assessment. Provide a copy to the CAM.
- Collaborate with the HSP and the CAM to address questions, comments, or issues pertaining to the plan and prepare a *Final Hydrogen Safety Plan*.
- Submit the *Final Hydrogen Safety Plan* to the HSP. Provide a copy to the CAM.
- Participate in design reviews with the HSP before submitting design plans to the AHJ and other relevant regulatory organizations, such as the Federal Railroad Administration or United States Coast Guard.
- Prepare a *Design Review Memo* describing how the HSP’s comments will be incorporated into the design plans. Provide a copy to the CAM.

Products:

- Preliminary Hydrogen Safety Plan
- Final Hydrogen Safety Plan
- Design Review Memo

TASK 4 STATION DEVELOPMENT

The goal of this task is to construct and commission the proposed Multi-Modal Hydrogen Refueling Station.

The Recipient shall:

- Finalize the station layout for both public- and private-facing sites.
- Construct the proposed Multi-Modal Hydrogen Refueling Station.
- Arrange and complete utility connection.
- Commission the refueling station to Open Retail status.

- Prepare a Construction and Commissioning Summary Report that describes the station development process. Provide a copy to the CAM.

Products:

- Construction and Commissioning Summary Report

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

TASK 5 STATION OPERATION, DATA COLLECTION & ANALYSIS

The goal of this task is to operate the Multi-modal Hydrogen Refueling Station for one year, providing hydrogen fuel to on-road vehicles and the locomotive demonstration, and collect operational data from the project, to analyze that data for economic and environmental impacts, and to include the data and analysis in the Final Report. For hydrogen refueling projects, data and analysis will be submitted quarterly using the National Renewable Energy Laboratory (NREL) Data Collection Tool, to perform and report hydrogen quality test results, and to collect and analyze data from the project for economic and environmental impacts and include in the Final Report.

The Recipient shall:

- Operate the hydrogen refueling station.
 - Ensure safe refueling across multiple vehicle types.
 - Conduct ongoing safety training throughout the life of the station.
 - Obtain ongoing hydrogen supply with at least 40% renewable content via trailer-swap.
- Prepare and submit an Operations Data Report(s) to the CAM when the station becomes operational and every six months thereafter.
- Prepare and submit the NREL Data Collection Tool once the hydrogen refueling station becomes operational and continue to do so every quarter until the end of the agreement.
- Perform and submit results to the CAM of initial, biannual, and as needed hydrogen purity tests using hydrogen collected, at the nozzle for each hose at each open retail station. Purity tests for the station will be performed:
 - At the time the station becomes operational.
 - Every six months after the station becomes operational during the approved term of this agreement.
 - As needed when the hydrogen lines are potentially exposed to contamination due to maintenance or other activity.
 - Hydrogen purity readings shall be collected according to CCR Title 4 Business Regulations, Division 9 Measurement Standards, Chapter 6 Automotive Products Specifications, Article 8 Specifications for

Hydrogen Used in Internal Combustion Engines and Fuel Cells,
Sections 4180 and 4181.

- Collect 12 months of throughput, usage, and operations data from the project including:
 - Hydrogen quantity delivered;
 - Hydrogen quantity dispensed;
 - Carbon intensity of hydrogen dispensed;
 - Energy used for hydrogen storage, cooling, compression, and dispensing;
 - Types of vehicles using the refueling equipment;
 - Duration of fueling sessions per types of vehicles and locomotives;
 - Payment and access method for private-access refueling dispensers;
 - Maximum capacity of the new fueling system (HyScape modeled or equivalent);
 - Normal operating hours, up time, downtime, and explanations of variations;
 - Station servicing and maintenance information;
 - Safety incidents;
 - Gallons of gasoline and/or diesel fuel displaced (with associated duty cycle information);
 - Expected air emissions reduction, for example:
 - Non-methane hydrocarbons
 - Oxides of nitrogen
 - Particulate Matter
 - Formaldehyde
 - Driver/operator feedback on fueling.
- Identify any current and planned use of renewable hydrogen at the facility.
- Identify the source of the hydrogen fuel.
- Describe any energy efficiency measures used in the facility that may exceed Title 24 standards in Part 6 of the California Code Regulations.
- Provide data on potential job creation, economic development, and increased state revenue as a result of expected future expansion.

- Provide a quantified estimate of the project's carbon intensity values for life-cycle greenhouse gas emissions.
- Compare any project performance and expectations provided in the proposal to CEC with actual project performance and accomplishments.

Products:

- Operations Data Report
- Quarterly NREL Data Collection Tool
- Initial, biannual and as needed hydrogen purity test results
- Data collection information and analysis will be included in the Final Report

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

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 six high quality digital photographs (minimum resolution of 1300x500 pixels in landscape ratio) of pre and post technology installation at the project sites or related project photographs.

Products:

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

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION EQUILON ENTERPRISES 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 ARV-21-023 with Equilon Enterprises LLC dba Shell Oil Products US for a \$4,000,000 grant to develop and demonstrate the first multi-modal hydrogen refueling station in California. The multi-modal hydrogen refueling station will serve hydrogen fuel cell powered on-road heavy-duty vehicles and locomotives at the Port of West Sacramento and will support the Sierra Northern Hydrogen Locomotive Project resulting from the same solicitation and previously awarded; 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