



**CALIFORNIA
ENERGY COMMISSION**



**California Energy Commission
May 8, 2024 Business Meeting
Backup Materials for FirstElement Fuel Inc.**

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

1. Proposed Resolution
2. Grant Request Form
3. Scope of Work

[PROPOSED]

RESOLUTION NO: 24-0508-18b

**STATE OF CALIFORNIA
STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION**

RESOLUTION: FirstElement Fuel 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-23-015 with FirstElement Fuel Inc., for a \$7,000,000 grant to support operations and maintenance projects to achieve an average 95 percent uptime across its existing network of hydrogen stations. The projects will include improvements to the point-of-sale system, upgrading air compressors, upgrading internet access, and hiring additional staff; and

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

CERTIFICATION

The undersigned Secretariat to the CEC does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the CEC held on May 8, 2024.

AYE:
NAY:
ABSENT:
ABSTAIN:

Dated:

Kristine Banaag
Secretariat



GRANT REQUEST FORM (GRF)

A. New Agreement Number

IMPORTANT: New Agreement # to be completed by Contracts, Grants, and Loans Office.

New Agreement Number: ARV-23-015

B. Division Information

1. Division Name: Fuels and Transportation
2. Agreement Manager: Mark Johnson
3. MS-:MS-6
4. Phone Number: 916-314-0925

C. Recipient's Information

1. Recipient's Legal Name: FirstElement Fuel Inc.
2. Federal ID Number: 46-4260718

D. Title of Project

Title of project: Improvements in Maintenance Processes for Reliable Operations that are Verifiable and Effective for Hydrogen Refueling Stations

E. Term and Amount

1. Start Date: 5/8/2024
2. End Date: 3/31/2028
3. Amount: \$7,000,000

F. Business Meeting Information

1. Are the ARFVTP agreements \$75K and under delegated to Executive Director? No
2. The Proposed Business Meeting Date: 05-08-2024
3. Consent or Discussion? Discussion
4. Business Meeting Presenter Name: Miki Crowell
5. Time Needed for Business Meeting: 5 minutes
6. The email subscription topic is: Clean Transportation Program, General Transportation

Agenda Item Subject and Description:

FirstElement Fuel Inc. Proposed resolution approving agreement ARV-23-015 with FirstElement Fuel Inc., for a \$7,000,000 grant to support operations and maintenance projects to achieve an average 95 percent uptime across its existing network of hydrogen stations and adopting staff's determination that this action is exempt from CEQA. The projects will include improvements to the point-of-sale system, upgrading air compressors, upgrading internet access, and hiring additional staff. (Clean Transportation Program Funding) Contact: Mark Johnson (Staff Presentation: 5 minutes)

G. California Environmental Quality Act (CEQA) Compliance

1. Is Agreement considered a "Project" under CEQA?

Yes

If yes, skip to question 2.

If no, complete the following (PRC 21065 and 14 CCR 15378) and 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: Not Applicable

2. If Agreement is considered a “Project” under CEQA answer the following questions.

a) Agreement **IS** exempt?

Yes

Statutory Exemption?

No

If yes, list PRC and/or CCR section number(s) and separate each with a comma. If no, enter “None” and go to the next question.

PRC section number: None

CCR section number: None

Categorical Exemption?

Yes

If yes, list CCR section number(s) and separate each with a comma. If no, enter “None” and go to the next question.

CCR section number: tit. 14, section 15301, 15302

Section 15301 provides that projects which consist of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, and which involve negligible or no expansion of use, are categorically exempt from the provisions of the California Environmental Quality Act. The proposed project replaces the older obsolete card readers at existing hydrogen stations with newer generation card readers. The proposed project will also replace critical equipment at existing hydrogen stations such as compressors and cryopumps. Because the existing facilities are already used for hydrogen fueling, the proposed upgrades and improvements to the hydrogen refueling station involves negligible or no expansion of the existing or former use. Therefore, the project falls within section 15301 and will not have a significant effect on the environment.

Section 15302 provides that projects which consist of replacement of existing structures and facilities on the same site and will have substantially the same purpose and capacity of the structure or facility replaced are exempt from CEQA. Here the project involves replacement of critical equipment for existing hydrogen refueling stations including card readers, compressors and cryopumps.

The project will not impact an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies; does not involve any cumulative impacts of successive projects of the same type in the same place that might be considered significant; does not involve unusual circumstances that might have a significant effect on the environment; will not result in damage to scenic resources within a highway officially designated as a state scenic highway; the project site is not included on any list compiled pursuant to Government Code section 65962.5; and the



project will not cause a substantial adverse change in the significance of a historical resource. Therefore, none of the exceptions to categorical exemptions listed in CEQA Guidelines section 15300.2 apply to this project, and this project will not have a significant effect on the environment.

Common Sense Exemption? 14 CCR 15061 (b) (3)

No

If yes, explain reason why Agreement is exempt under the above section. If no, enter "Not applicable" and go to the next section.

Not Applicable

b) Agreement **IS NOT** exempt.

IMPORTANT: consult with the legal office to determine next steps.

No

If yes, answer yes or no to all that applies. If no, list all as "no" and "None" as "yes".

Additional Documents	Applies
Initial Study	No
Negative Declaration	No
Mitigated Negative Declaration	No
Environmental Impact Report	No
Statement of Overriding Considerations	No
None	Yes

H. Is this project considered "Infrastructure"?

Yes

I. Subcontractors

List all Subcontractors listed in the Budget (s) (major and minor). Insert additional rows if needed. If no subcontractors to report, enter "No subcontractors to report" and "0" to funds.

Delete any unused rows from the table

Subcontractor Legal Company Name	CEC Funds	Match Funds
No Subcontractors to report.	\$ 0	\$0

J. Vendors and Sellers for Equipment and Materials/Miscellaneous

List all Vendors and Sellers listed in Budget(s) for Equipment and Materials/Miscellaneous. Insert additional rows if needed. If no vendors or sellers to report, enter "No vendors or sellers to report" and "0" to funds. **Delete** any unused rows from the table.

Vendor/Seller Legal Company Name	CEC Funds	Match Funds
TBD	\$487,500	\$162,500
TBD	\$187,500	\$62,500



TBD	\$450,000	\$150,000
TBD	\$450,000	\$150,000
TBD	\$122,625	\$40,875
TBD	\$52,500	\$17,500
TBD	\$99,750	\$33,250
TBD	\$180,000	\$60,000
TBD	\$187,500	\$62,500
TBD	\$814,500	\$271,500
TBD	\$844,200	\$281,400

K. Key Partners

List all key partner(s). Insert additional rows if needed. If no key partners to report, enter “No key partners to report.” **Delete** any unused rows from the table.

Key Partner Legal Company Name
No key partners to report.

L. Budget Information

Include all budget information. Insert additional rows if needed. If no budget information to report, enter “N/A” for “Not Applicable” and “0” to Amount. **Delete** any unused rows from the table.

Funding Source	Funding Year of Appropriation	Budget List Number	Amount
ARFVTF	2020/2021	601.118M	\$7,000,000

TOTAL Amount: \$7,000,000

R&D Program Area: Not Applicable

Explanation for “Other” selection Not Applicable

Reimbursement Contract #: Not Applicable

Federal Agreement #: Not Applicable

M. Recipient’s Contact Information

1. Recipient’s Administrator/Officer

Name: Hugo Wang

Address: 5281 California Ave, Suite 260

City, State, Zip: Irvine, CA 92617

Phone: (949) 870-0868

E-Mail: hugo.wang@firstementfuel.com



2. Recipient's Project Manager

Name: Matt Miyasato

Address: 5281 California Ave, Suite 260

City, State, Zip: Irvine, CA 92617

Phone: (909) 964-3197

E-Mail: matt.miyasato@firstementfuel.com

N. Selection Process Used

There are three types of selection process. List the one used for this GRF.

Selection Process	Additional Information
Competitive Solicitation #	GFO-23-604
First Come First Served Solicitation #	Not Applicable
Other	Not Applicable

O. Attached Items

1. List all items that should be attached to this GRF by entering "Yes" or "No".

Item Number	Item Name	Attached
1	Exhibit A, Scope of Work/Schedule	Yes
2	Exhibit B, Budget Detail	Yes
3	CEC 105, Questionnaire for Identifying Conflicts	Yes
4	Recipient Resolution	No
5	Awardee CEQA Documentation	No

Approved By

Individuals who approve this form must enter their full name and approval date in the MS Word version.

Agreement Manager: Mark Johnson

Approval Date: 3/14/2024

Office Manager: Elizabeth John

Approval Date: 3/16/2024



STATE OF CALIFORNIA
CALIFORNIA ENERGY COMMISSION

Grant Request Form
CEC-270 (Revised 01/2024)

Deputy Director: Melanie Vail

Approval Date: 3/22/2024

Exhibit A SCOPE OF WORK

TECHNICAL TASK LIST

Task #	CPR	Task Name
1		Administration
2		Recruit and Hire Additional Staff
3	X	O&M Projects
4		Replace Critical Equipment Inventory
5		Operations and Reliability
6		Data Collection and Analysis
7		Project Fact Sheet

KEY NAME LIST

Task #	Key Personnel	Key Subcontractor(s)	Key Partner(s)
1	Dr. Matt Miyasato		
2	Adam Lloyd		
3	Ghassan Sleiman, Scott Jennings, Tyler Furuya, Lina Li		
4	Josh Adams, Lina Li		
5	Ghassan Sleiman, Tyler Fuyura, Lina Li		
6	Scott Jennings		
7	Scott Jennings, Tyler Fuyura, Josh Adams, Lina Li		
8	Matt Miyasato		

GLOSSARY

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

Term/ Acronym	Definition
CAM	Commission Agreement Manager

Term/ Acronym	Definition
CAO	Commission Agreement Officer
CEC	California Energy Commission
CTP	Clean Transportation Program
CPR	Critical Project Review
FCEV	Fuel Cell Electric Vehicle
FEF	FirstElement Fuel Inc.
FTD	Fuels and Transportation Division
GH2	Gaseous Hydrogen
H2	Hydrogen
LH2	Liquid Hydrogen
O&M	Operations and maintenance
Recipient	FirstElement Fuel Inc.
POS	Point-of-sale
HRS	Hydrogen refueling station

Background

Assembly Bill (AB) 118 (Núñez, Chapter 750, Statutes of 2007), created the Clean Transportation 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 and clean air goals. AB 126 (Reyes, Chapter 319, Statutes of 2023) re-authorized funding for the program through July 1, 2035 and focused the program on zero-emission transportation. The Clean Transportation Program has an annual budget of approximately \$100 million and provides financial support for projects that, among other goals:

- Develop and deploy zero-emission technology and fuels in the marketplace where feasible and near-zero-emission technology and fuels elsewhere.
- Produce sustainable alternative and renewable low-carbon fuels in California.
- Deploy zero-emission fuel infrastructure, fueling stations, and equipment where feasible and near-zero-emission fuel infrastructure, fueling stations, and equipment elsewhere.
- Establish workforce training programs and conduct public outreach on the benefits of alternative transportation fuels and vehicle technologies.

On November 3, 2023, the CEC released a Grant Funding Opportunity (GFO) entitled “Improvements in Maintenance Processes for Reliable Operations that are Verifiable and Effective for Hydrogen Refueling Stations (IMPROVE for H2).” This competitive grant solicitation was to fund projects that will support the advancement of hydrogen refueling station operations and maintenance (O&M) to improve the customer experience. In response to GFO-23-604, the Recipient submitted application #1 which was proposed for funding in the CEC’s Notice of Proposed Awards on February 14, 2024. GFO-23-604 and Recipient’s application are hereby incorporated by reference into this Agreement in their entirety.

In the event of any conflict or inconsistency between the terms of the Solicitation and the terms of the Recipient’s Application, the Solicitation shall control. In the event of any conflict or inconsistency between the Recipient’s Application and the terms of this Agreement, this Agreement shall control. Similarly, in the event of any conflict or inconsistency between the terms of this Agreement and the Solicitation, the terms of this Agreement shall control.

Problem Statement:

Building a market for fuel cell electric vehicles (FCEVs) not only requires investment in the building of new stations, but also successful operations and maintenance (O&M) of those stations to meet customers’ ongoing fueling needs. While FirstElement Fuel Inc. (FEF) continues to develop new stations, insufficient reliability of existing stations is an area of increasing concern. Feedback from FCEV drivers suggests that existing stations need additional support to meet basic fueling needs. FEF has encountered the need for additional staff and project resources to improve reliability, O&M processes, and customer experience at hydrogen stations.

Goals of the Agreement:

The goal of this Agreement is to achieve an average 95% station uptime across the existing network of FEF hydrogen fueling stations and improve customer-facing information.

Objectives of the Agreement:

The objectives of this Agreement are to:

- Recruit and hire additional staff to improve:
 - The speed at which technicians are dispatched
 - Standard Operating Procedures clarity and accessibility
 - Customer satisfaction at stations through station ambassadors
 - Equipment/component reliability through tracking and design
 - Equipment/component longevity through pre-installation testing
- Complete O&M projects that address priority challenges affecting station and equipment performance, reliability, and customer benefits. These projects will improve reliability to achieve an average 95% station uptime and customer experience, and may include, but are not limited to the following:

- Linde control software integration with FEF dashboard
- Air compressor upgrade
- A test tank rig simulator
- Gen1 card reader replacement
- Satellite communications upgrades
- Point-of-sale upgrade through Comdata interface or replacement
- Mobile application development
- Manufacture and procure critical replacement equipment and components for nozzles and balance of system equipment, liquid hydrogen (LH2) pumps and gaseous hydrogen (GH2) compressors to improve station uptime and increase station reliability.

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 that includes the CAM and may include 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.
- Provide a written statement of project activities that have occurred after the notice of proposed awards but prior to the execution of the agreement using match funds. If none, provide a statement that no work has been completed using match funds prior to the execution of the agreement. All pre-execution match expenditures must conform to the requirements in the Terms and Conditions of this Agreement.
- Discuss the following administrative and technical aspects of this Agreement:
 - Agreement Terms and Conditions
 - Critical Project Review (Task 1.2)
 - Match fund documentation (Task 1.7). No reimbursable work may be done until this documentation is in place.
 - Permit documentation (Task 1.8)
 - Subawards needed to carry out project (Task 1.9)

- The CAM's expectations for accomplishing tasks described in the Scope of Work
- An updated Schedule of Products and Due Dates
- Monthly Calls (Task 1.4)
- Quarterly Progress Reports (Task 1.5)
- Technical Products (Product Guidelines located in Section 5 of the Terms and Conditions)
- Final Report (Task 1.6)

Recipient Products:

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

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 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 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, if applicable.
- “Surviving” Agreement provisions.
- Final invoicing and release of retention.
- Prepare a schedule for completing the closeout activities for this Agreement.

Products:

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

Task 1.4 Monthly Calls

The goal of this task is to have calls at least monthly between CAM and Recipient to verify that satisfactory and continued progress is made towards achieving the objectives of this Agreement on time and within budget.

The objectives of this task are to verbally summarize activities performed during the reporting period, to identify activities planned for the next reporting period, to identify issues that may affect performance and expenditures, to verify match funds are being proportionally spent concurrently or in advance of CEC funds or are being spent in accordance with an approved Match Funding Spending Plan, to form the basis for determining whether invoices are consistent with work performed, and to answer any other questions from the CAM. Monthly calls might not be held on those months when a quarterly progress report is submitted, or the CAM determines that a monthly call is unnecessary.

The CAM shall:

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

The Recipient shall:

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

Product:

- Email to CAM concurring with call summary notes.

Task 1.5 Quarterly Progress Reports

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

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

The Recipient shall:

- Prepare a *Quarterly Progress Report* which summarizes all Agreement activities conducted by the Recipient for the reporting period, including an assessment of the ability to complete the Agreement within the current budget and any anticipated cost overruns. Also include reliability data to be collected and provided quarterly as specified in the Data Collection and Analysis Task. Progress reports are due to the CAM the 10th day of each January, April, July, and October. The Quarterly Progress Report template can be found on the ECAMS Resources webpage available at <https://www.energy.ca.gov/media/4691>.

Product:

- Quarterly Progress Reports

Task 1.6 Final Report

The goal of the Final Report is to assess the project's success in achieving the Agreement's goals and objectives and lessons learned from the project.

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 and is limited to 25-pages. 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.

In addition to any other applicable requirements, the Final Report must comply with the Americans with Disabilities Act (ADA) of 1990 (42 U.S.C. 12101 et seq.), which prohibits discrimination on the basis of disability; all applicable regulations and guidelines issued pursuant to the ADA; Cal. Gov. Code sects. 7405 and 11135; and Web Content Accessibility Guidelines 2.0, or a subsequent version, as published by the Web Accessibility Initiative of the World Wide Web Consortium at a minimum Level AA success criteria.

The Recipient shall:

- Prepare an *Outline of the Final Report*, if requested by the CAM.
- Prepare a *Draft Final Report* complying with ADA requirements and 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 *Final Report* in Microsoft Word format or similar electronic format as approved by the CAM.

Products:

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

Task 1.7 Identify and Obtain Matching Funds

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

The costs to obtain and document match fund commitments are not reimbursable through this Agreement. Although the CEC budget for this task will be zero dollars, the Recipient may utilize match funds for this task. Match funds must be identified in writing and the associated commitments obtained before the Recipient can incur any costs for which the Recipient will request reimbursement.

The Recipient shall:

- Prepare a letter documenting the match funding committed to this Agreement and submit it to the CAM at least 2 working days prior to the kick-off meeting. If no match funds were part of the proposal that led to the CEC awarding this Agreement and none have been identified at the time this Agreement starts, then state such in the letter. If match funds were a part of the proposal that led to the CEC awarding this Agreement, then provide in the letter a list of the match funds that identifies the:
 - Amount of each cash match fund, its source, including a contact name, address and telephone number and the task(s) to which the match funds will be applied.

- Amount of each in-kind contribution, a description, documented market or book value, and its source, including a contact name, address and telephone number and the task(s) to which the match funds will be applied. If the in-kind contribution is equipment or other tangible or real property, the Recipient shall identify its owner and provide a contact name, address and telephone number, and the address where the property is located.
- Provide a copy of the letter of commitment from an authorized representative of each source of cash match funding or in-kind contributions that these funds or contributions have been secured. For match funds provided by a grant a copy of the executed grant shall be submitted in place of a letter of commitment.
- Discuss match funds and the implications to the Agreement if they are reduced or not obtained as committed, at the kick-off meeting. If applicable, match funds will be included as a line item in the progress reports and will be a topic at CPR meetings.
- Provide the appropriate information to the CAM if during the course of the Agreement additional match funds are received.
- Notify the CAM within 10 days if during the course of the Agreement existing match funds are reduced. Reduction in match funds must be approved through a formal amendment to the Agreement and may trigger an additional CPR meeting.

Products:

- A letter regarding match funds or stating that no match funds are provided.
- Copy(ies) of each match fund commitment letter(s) (if applicable).
- Letter(s) for new match funds (if applicable).
- Letter that match funds were reduced (if applicable).

Task 1.8 Identify and Obtain Required Permits

The goal of this task is to obtain all permits required for work completed under this Agreement in advance of the date they are needed to keep the Agreement schedule on track.

Permit costs and the expenses associated with obtaining permits are not reimbursable under this Agreement. Although the CEC budget for this task will be zero dollars, the Recipient may budget match funds for any expected expenditures associated with obtaining permits. Permits must be identified in writing and obtained before the Recipient can make any expenditure for which a permit is required.

The Recipient shall:

- Prepare a letter documenting the permits required to conduct this Agreement and submit it to the CAM at least 2 working days prior to the kick-off meeting. If there are no permits required at the start of this Agreement, then state such in the letter. If it is known at the beginning of the Agreement that permits will be required during the course of the Agreement, provide in the letter:
 - A list of the permits that identifies the:
 - Type of permit
 - Name, address and telephone number of the permitting jurisdictions or lead agencies
 - The schedule the Recipient will follow in applying for and obtaining these permits.
- Discuss the list of permits and the schedule for obtaining them at the kick-off meeting and develop a timetable for submitting the updated list, schedule, and the copies of the permits. The implications to the Agreement if the permits are not obtained in a timely fashion or are denied will also be discussed. If applicable, permits will be included as a line item in the Progress Reports and will be a topic at CPR meetings.
- If during the course of the Agreement additional permits become necessary, provide the appropriate information on each permit and an updated schedule to the CAM.
- As permits are obtained, send a copy of each approved permit to the CAM.
- If during the course of the Agreement permits are not obtained on time or are denied, notify the CAM within 5 working days. Either of these events may trigger an additional CPR.

Products:

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

Task 1.9 Obtain and Execute Subawards

The goal of this task is to ensure quality products and to procure subrecipients required to carry out the tasks under this Agreement consistent with the Agreement Terms and Conditions and the Recipient's own procurement policies and procedures.

The Recipient shall:

- Manage and coordinate subrecipient activities.
- Submit a *letter* to the CAM describing the subawards needed or stating that no subawards are required.
- If requested by the CAM, submit a *draft of each subaward* required to conduct the work under this Agreement to the CAM for review.
- If requested by the CAM, submit a *final copy of the executed subaward*.
- If Recipient intends to add new subrecipients or change subrecipients, then the Recipient shall notify the CAM.

Products:

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

TECHNICAL TASKS

TASK 2 RECRUIT AND HIRE ADDITIONAL STAFF

The goal of this task is to recruit and hire staff for O&M support and testing at existing hydrogen stations.

Task 2.1 Recruit and Hire O&M Staff

The goal of this task is to develop the appropriate job descriptions, recruit, and hire staff for the O&M functions identified below.

The Recipient shall:

- Draft job description for Dispatchers, open recruitments, and hire for this position.
- Draft job description for Station Ambassador, open recruitment, and hire for this position.
- Draft job description for Reliability Engineer, open recruitment, and hire for this position.
- Provide a copy of all *job descriptions* to the CAM prior to recruitment.
- Provide the *status of all recruitments and dates positions are filled* to the CAM on a quarterly basis, in Quarterly Reports (Task 1.5).

Products:

- *Dispatcher* job description
- *Station Ambassador* job description
- *Reliability Engineer* job description
- *Status of all recruitments and dates positions are filled* in Quarterly Reports (Task 1.5)

Task 2.2 Recruit Testing Staff

The goal of this task is to develop the appropriate job descriptions, recruit and hire staff for the Testing functions identified below.

The Recipient shall:

- Draft job description for *Test Engineer*, open recruitment, and hire for this position.
- Draft job description for *Test Technicians*, open recruitment, and hire for this position.
- Provide a copy of all *job descriptions* to the CAM prior to recruitment.
- Provide the status of all recruitments, and dates positions are filled to the CAM on a quarterly basis, in Quarterly Reports (Task 1.5).

Products:

- *Test Engineer* job description
- *Test Technicians* job description
- *Status of all recruitments and dates positions are filled* in Quarterly Reports (Task 1.5)

TASK 3 O&M PROJECTS

The goal of this task is to conduct and implement O&M projects to improve reliability, efficiency and/or customer benefits at the Recipient's existing hydrogen refueling stations. Recipient will propose and seek written approval from CEC prior to initiating any O&M projects for reimbursement. These may include, but are limited to, the following projects:

- Station software/hardware integration
- Air compressor upgrades
- Optimizing station equipment
- Enhancing station operations
- Streamlining commissioning process
- Point-of-sale interface improvements
- Gen1 card reader replacements
- Mobile application development

The Recipient shall:

- For each O&M project, develop and provide a copy of the *proposed O&M project* that includes the proposed scope, desired outcomes, resources, budget, and schedule to the CAM for approval.
- Recipient is not authorized to proceed with O&M project unless and until written authorization is received from CAM to continue with the O&M project.
- After CAM approval, provide an *update on status of O&M projects* to the CAM on a quarterly basis, in Quarterly Reports (Task 1.5).
- Provide *notification of completion of each O&M project* in Quarterly Reports to the CAM.

Products:

- Proposed O&M project(s)
- O&M project(s) status in Quarterly Reports (Task 1.5)
- Notification of completion of each O&M project in Quarterly Reports (Task 1.5)

TASK 4 REPLACE CRITICAL EQUIPMENT INVENTORY

The goal of this task is to maintain critical spare parts that are required to maintain gaseous and liquid hydrogen stations.

Task 4.1 Dispenser and Balance of Station

The goal of this task is to manufacture and procure critical spare parts to keep in inventory to reduce station repair and maintenance downtime for the dispenser and the balance of system equipment.

The Recipient shall:

- Provide the CAM with an *update on status of dispenser and equipment inventory at the station* on a quarterly basis, in Quarterly Reports. Update will include, but is not limited to, a current production list and schedule.
- Identify specific equipment and components needed in inventory to maintain high uptime at the stations.
- Provide a *list of on-going parts inventory for stations* on a quarterly basis, in Quarterly Reports.
- Procure or manufacture requisite parts.

Products:

- Update on status of dispenser and equipment inventory at the station, in Quarterly Reports (Task 1.5)
- List of on-going parts inventory for stations, in Quarterly Reports (Task 1.5)

Task 4.2 Gaseous Hydrogen (GH2) Equipment

The goal of this task is to manufacture and procure critical parts for the GH2 stations. Critical parts include, but are not limited to: compressor parts, O-rings and nozzles.

The Recipient shall:

- Provide the CAM with an *update on status of procurement and manufacturing* of GH2 station equipment on a quarterly basis, in Quarterly Reports. Update will include, but is not limited to, a current production list and schedule.
- Identify specific equipment and components needed in inventory to maintain high uptime at the GH2 stations.
- Provide an updated *list of parts inventory* for GH2 stations on a quarterly basis, in Quarterly Reports.
- Procure or manufacture requisite parts.

Products:

- Update on status of procurement and manufacturing of GH2 station equipment, in Quarterly Reports (Task 1.5)
- Updated list of parts inventory for GH2 stations, in Quarterly Reports (Task 1.5)

Task 4.3 Liquid Hydrogen (LH2) Equipment

The goal of this task is to manufacture and procure critical parts for the LH2 stations. Items currently identified are complete pumps, pump components, drive motors, cylinders, pistons, O-rings and brine heat exchanger; however, this may change over time and will be reported to the CEC.

The Recipient shall:

- Provide the CAM with an *update on status of procurement and manufacturing* of LH2 equipment on a quarterly basis, in Quarterly Reports. Update will include, but is not limited to, a current production list and schedule.
- Identify specific equipment and components needed in inventory to maintain high uptime at the LH2 stations.
- Provide an updated *list of parts inventory* for LH2 stations on a quarterly basis, in Quarterly Reports.
- Procure or manufacture requisite parts.

Products:

- Update on status of procurement and manufacturing of LH2 equipment, in Quarterly Reports (Task 1.5)

- Updated list of parts inventory for LH2 stations, in Quarterly Reports (Task 1.5)

TASK 5 OPERATIONS AND RELIABILITY

The goal of this task is to operate all hydrogen refueling stations included in the project and to plan for and implement maintenance strategies to achieve excellent station reliability.

The Recipient shall:

- Operate each eligible hydrogen refueling station included in this project and maintain Open Retail status during the term of this Agreement.
- Provide an *Operations and Reliability Plan* for the project explaining how 95% uptime at each eligible hydrogen station included in the project will be achieved. The Plan shall include, but is not limited to:
 - Explanation of the staff resources and procedures for conducting O&M.
 - Description of methods for communicating with and providing help to customers.
 - Clear and detailed strategies for achieving 95% station uptime and ensuring customer satisfaction.
 - Description and frequency of preventative or planned maintenance.
 - Response times for various types of unplanned maintenance issues.
- Conduct planned and unplanned maintenance of each eligible hydrogen refueling station included in this project as outlined in the Operations and Reliability Plan.

Without limitation to other rights and remedies which the CEC may have, including but not limited to survival provisions specified in the Terms and Conditions of this agreement, the requirement that the Recipient commit to operating each hydrogen refueling station included in this project for four years from execution of this Agreement, as feasible, and maintain a 95% uptime, shall survive the completion or termination date of this agreement. In addition to other requirements in the Terms and Conditions of this agreement, all CEC-reimbursable expenditures must be incurred within the Agreement term.

Products:

- Operations and Reliability Plan

TASK 6 DATA COLLECTION AND ANALYSIS

The goal of this task is to collect operational data from the project and to analyze that data for economic and environmental impacts.

The Recipient shall:

- Complete and submit the *NREL Data Collection Tool* (to be provided by the CAM) quarterly for each hydrogen refueling station in the project throughout the project term.
- Complete and submit a *Renewable Hydrogen Report* every six months during the term of this agreement the percentage of renewable hydrogen dispensed at each hydrogen refueling station in the project, the carbon intensity of the renewable hydrogen, and the Low Carbon Fuel Standard pathway associated with the renewable hydrogen.
- Perform and submit results of purity testing using hydrogen collected at the nozzle for each hose at each hydrogen refueling station in the project:
 - Annually during the term of this agreement.
 - At any station when it changes from Retail: Unavailable to Retail: Open.
 - 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.

- Comply with the Petroleum Industry Information Reporting Act (PIIRA) and complete CEC Form A15, found at <https://a15.energy.ca.gov/>, on an annual basis for each hydrogen refueling station in the project. Submit the form to the CEC's PIIRA Data Collection Unit per the instructions on the website.
- Collect and report to the CEC:
 - For hydrogen-refueling stations, the availability of operational fueling nozzles, whether hydrogen is available for refueling at the station, the volume of hydrogen-dispensed, the number of vehicles fueled by a station, and any other data deemed necessary by the CEC to monitor reliability and accessibility of the refueling infrastructure. The data must be measured no less frequently than on a daily basis and reported electronically to the CEC no less frequently than quarterly in *AB 126 Data Reports* delivered with the quarterly reports described in Task 1.5.

- For hydrogen-refueling stations, the source and carbon intensity of the hydrogen produced for, or dispensed by, the stations, as measured by the methodology in the LCFS regulation (Subarticle 7 (commencing with Section 95480) of Article 4 of Subchapter 10 of Chapter 1 of Division 3 of Title 17 of the California Code of Regulations). Data must be reported to the CEC annually in a *AB 126 Data Report* specified by the CAM.
- For the duration of the project, collect and provide throughput, usage, and operations data from each hydrogen refueling station in the project including, but not limited to:
 - Number of refueling sessions
 - Average refueling station downtime
 - Average refueling session duration
 - Average kilograms of hydrogen dispensed per refueling session
 - Average retail price of hydrogen
 - Normal operating hours, and explanations of variations
 - Gallons of gasoline and/or diesel fuel displaced (with associated mileage information)
 - Expected air emissions reduction, for example:
 - Non-methane hydrocarbons
 - Oxides of nitrogen
 - Particulate Matter
 - Formaldehyde
- Identify any current and planned use of renewable energy at the facility.
- Provide data on job creation, economic development, and increased state revenue as a result of the project.
- 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.
- Provide a *Data Collection and Information Analysis Report* that lists and analyzes all the data and information described above, aside from the data submitted in the NREL Data Collection Tool, the A15 form, the purity tests, the renewable hydrogen reports, and the reliability data to be provided with the Quarterly Progress Report.

Products:

- Quarterly NREL Data Collection Tool

- Semiannual renewable hydrogen report
- Annual and as needed hydrogen purity test results
- Annual CEC A15 form
- AB 126 Data Reports
- Data Collection and Information Analysis Report

TASK 7 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) 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