California Energy Commission
February 14, 2024 Business Meeting
Backup Materials for StratosFuel, 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

RESOLUTION NO: 24-0214-03e

STATE OF CALIFORNIA

STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

RESOLUTION: StratosFuel, 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 ZVI-23-008 with StratosFuel, Inc. for a $4,000,000 grant to develop and demonstrate an innovative and cost-effective hydrogen refueling station. The proposed hydrogen refueling station in Victorville will be fed by a new hydrogen pipeline from an adjacent renewable hydrogen plant to support emerging medium- and heavy-duty on-road vehicle applications; 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 February 14, 2024.

AYE:
NAY:
ABSENT:
ABSTAIN:

Dated:

_____
Kristine Banaag
Secretariat

STATE OF CALIFORNIA
CALIFORNIA ENERGY COMMISSION

CEC-270 (Revised 10/2022)

GRANT REQUEST FORM (GRF)

A. New Agreement Number

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

New Agreement Number: ZVI-23-008

B. Division Information

1. Division Name: Fuels and Transportation
2. Agreement Manager: Andrew Alvarez
3. MS-27
4. Phone Number: (916) 805-7392

C. Recipient's Information

1. Recipient's Legal Name: StratosFuel, Inc.
2. Federal ID Number: 47-5270579

D. Title of Project

Title of project: Mojave River Heavy-Duty Hydrogen Station

E. Term and Amount

1. Start Date: 2/14/2024
2. End Date: 3/31/2028
3. Amount: $4,000,000

F. Business Meeting Information

1. Are the ARFVTP agreements $75K and under delegated to Executive Director? No
2. The Proposed Business Meeting Date: 02/14/2024
3. Consent or Discussion? Consent
4. Business Meeting Presenter Name: Andrew Alvarez
5. Time Needed for Business Meeting: 0 minutes
6. The email subscription topic is: Clean Transportation Program

Agenda Item Subject and Description:

StratosFuel, Inc. Proposed resolution approving agreement ZVI-23-008 with StratosFuel, Inc. for a $4,000,000 grant to develop and demonstrate an innovative and cost-effective hydrogen refueling station, and adopting staff's determination that this action is exempt from CEQA. The proposed hydrogen refueling station in Victorville will be fed by a new hydrogen pipeline from an adjacent renewable hydrogen plant to support emerging medium- and heavy-duty on-road vehicle applications. (General Fund Funding) Contact: Andrew Alvarez

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":

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: Cal. Code Regs., tit. 14, sections 15301, 15303

Section 15301 provides that projects which consist of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration or existing public or private structures, facilities, mechanical equipment, or topographical features, and which involve negligible or no expansion of use beyond that existing at the time of the lead agency's determination, are categorically exempt from the provisions of the California Environmental Quality Act.

The proposed project will install hydrogen refueling equipment adjacent to an existing industrial hydrogen production facility in Victorville, California; and will connect the new refueling equipment to the existing production facility via pipeline. There will be a 12-month demonstration period at Victorville to collect operational data on the equipment. The Victorville location is heavily industrial, and the equipment to be installed is located on the same parcel as the existing production facility. The refueling equipment to be installed will have a footprint approximately the size of a shipping container. The pipeline will be less than 200 feet. For these reasons, the project falls within section 15301 and will not have a significant effect on the environment.

Section 15303 provides that projects which consist of construction and location of limited 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. This project will install new equipment including 2 medium-size compressors (each approximately the size of a refrigerator) and 1 dual-sided hydrogen fuel dispenser (the same size), the total footprint of which will be approximately the size of a shipping container. Thus, only minor modifications are made, only small structures will be installed, and no new grading or street paving is necessary. For these reasons, the project falls within section 15303 and will not have a significant effect on the environment.

This 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 impacts on any particularly sensitive environment; 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. 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

I. 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
ANGI Energy Systems LLC	$1,500,000	$3,250,000
Jingoli Power, LLC	$1,250,000	$250,000
Fiedler Group	$25,000	$25,000
TBD	$25,000	$25,000

J. 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
Southern California Logistics Airport (SCLA)
High Desert Chamber of Commerce
Mojave Desert Air Quality Management District (MDAQMD)

K. 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
General Fund	2021-2022	601.129ZEV	$4,000,000

TOTAL Amount: $4,000,000

R&D Program Area:

Explanation for "Other" selection

Reimbursement Contract #:

Federal Agreement #:

L. Recipient's Contact Information

1. Recipient's Administrator/Officer

Name: Melissa Gilbert

Address: 3550 Vine St, Unit 220

City, State, Zip: Riverside, CA 92507

Phone: 206-518-7820

E-Mail: melissagilbert@stratosfuel.com

2. Recipient's Project Manager

Name: Sean Walsh

Address: 3550 Vine St, Unit 220

City, State, Zip: Riverside, CA 92507

Phone: (951) 253-2269

E-Mail: seanwalsh@stratosfuel.com

M. Selection Process Used

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

Selection Process	Additional Information
Competitive Solicitation #	GFO-22-502
First Come First Served Solicitation #	Not Applicable
Other	Not Applicable

N. 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: Andrew Alvarez

Approval Date: 12/29/2023

Office Manager: Elizabeth John

Approval Date: 12/29/2023

Deputy Director: Melanie Vail

Approval Date: 1/3/2024

Exhibit A
SCOPE OF WORK

TECHNICAL TASK LIST

Task #	CPR	Task Name
1		Administration
2		Engineering and Design
3		Equipment Procurement
4		Hydrogen Safety Plan
5	X	Construction, Installation, and Commissioning
6	X	Demonstration of Hydrogen Refueling Station and Pipeline
7		Data Collection and Analysis
8		Project Fact Sheet

KEY NAME LIST

Task #	Key Personnel	Key Subcontractor(s)	Key Partner(s)
1	Sean Walsh, Melissa Gilbert, Steve Morton, Pete Jeffe, Jonathan Palacious-Avila	N/A	N/A
2	Sean Walsh, Steve Morton	ANGI Energy Systems LLC (ANGI), Fiedler Group Inc., Jingoli Power, LLC (Jingoli)	N/A
3	Sean Walsh, Steve Morton	ANGI, Jingoli	N/A
4	Sean Walsh, Steve Morton	Jingoli, Fiedler Group, Inc.	Southern California Logistics Airport (SCLA)
5	Jonathan Palacios-Avila, Melissa Gilbert, Sean Walsh, Steve Morton	N/A	SCLA, The Greater High Desert Chambers of Commerce, Mojave Desert Air Quality Management District (MDAQMD)
6	Jonathan Palacios-Avila, Melissa Gilbert, Sean Walsh	N/A	

Task #	Key Personnel	Key Subcontractor(s)	Key Partner(s)
7	Jonathan Palacios-Avila, Sean Walsh, Steve Morton	ANGI	SCLA
8	Jonathan Palacios-Avila, Melissa Gilbert, Steve Morton, Sean Walsh	N/A	N/A

GLOSSARY

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

Term/ Acronym	Definition
AB	Assembly Bill
ANGI	ANGI Energy Systems LLC
CAM	Commission Agreement Manager
CAO	Commission Agreement Officer
CEC	California Energy Commission
CTP	Clean Transportation Program
CPR	Critical Project Review
FTD	Fuels and Transportation Division
GFO	Grant Funding Opportunity
GHG	Greenhouse Gas
HSP	Hydrogen Safety Panel
kg	Kilogram
MDAQMD	Mojave Desert Air Quality Management District
MDHD	Medium-Duty and Heavy-Duty
NOx	Oxides of Nitrogen
OEM	Original Equipment Manufacturers
PNNL	Pacific Northwest National Laboratory
Recipient	StratosFuel, Inc.
SB	Senate Bill
SCLA	Southern California Logistics Airport

Background

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

On October 3, 2022, the California Energy Commission (CEC) released a Grant Funding Opportunity (GFO) entitled "Innovative Hydrogen Refueling Solutions for Heavy Transport." This competitive grant solicitation was to develop and demonstrate innovative hydrogen refueling solutions to support the decarbonization of emerging MDHD on-road and off-road vehicle applications, reduce hydrogen delivery and refueling costs, improve reliability, enable higher fill rates, and minimize energy losses. In response to GFO-22-502, the Recipient submitted application #7 which was proposed for full funding in the CEC's Revised Notice of Proposed Awards on August 24, 2023. GFO-22-502 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:

MDHD vehicles and off-road mobile sources together are responsible for more than 65 percent of oxides of nitrogen (NOx) emissions and more than 10 percent of greenhouse gas (GHG) emissions statewide. Diesel engines, which are widely used in off-road and MDHD vehicles, account for the vast majority of harmful diesel particulate matter emissions that are linked to numerous negative health outcomes. Under-resourced communities located near ports, railyards, distribution centers, and highly-trafficked roadways are exposed to higher concentrations of diesel particulate matter. Transitioning MDHD on-road vehicles and off-road vehicles to hydrogen fuel cell technology can reduce emissions and build demand for low carbon hydrogen, spurring development of hydrogen production and distribution at scale. Growing economies of scale can drive cost reductions for hydrogen in transportation as well as end-uses in other sectors that are difficult to decarbonize (for example, fertilizer and cement production).

Refueling costs, reliability, renewable hydrogen supply, and station siting delays are key challenges faced in the existing network of light-duty hydrogen refueling stations that will also need to be addressed for emerging applications. However, unlike the established network of light-duty hydrogen refueling stations, standardized hydrogen refueling infrastructure solutions for MDHD vehicles and off-road applications are still

emerging. Additional research is needed to address performance gaps of existing hydrogen refueling solutions to support fuel cell technologies in these emerging sectors.

To further support emerging MDHD vehicles and fill in hydrogen station performance gaps, StratosFuel will demonstrate how the proposed station model can support a Southern California logistics hub. There are currently financial and regulatory hurdles to establishing MDHD station networks. Through the pipeline fed design, and the data collected from the compression and dispensing equipment, the project will provide adequate data to State agencies, and vehicle original equipment manufacturers (OEMs) that is pertinent to future deployments. Additionally, the project will also help solve financial hurdles to operating stations by showcasing a model of pipeline fed hydrogen stations. Ultimately, pipeline stations can function as a hub and spoke solution for MDHD fleets, while reducing capital expenditures and operating expenses. Overall, the project will gain operating knowledge that will support MDHD hydrogen refueling infrastructure expansion.

Goals of the Agreement:

The goal of this Agreement is to address the gap in cost-effective hydrogen supply by demonstrating benefits of a pipeline fed station with new and improved station equipment that will serve MDHD logistics fleets.

Objectives of the Agreement:

The objectives of this Agreement are to:

1. Design the station in a way to serve MDHD vehicles at mass scale.
2. Ensure design includes hydrogen supply, via pipeline, from adjacent renewable hydrogen plant, owned and operated by StratosFuel.
3. Achieve a flow rate of over 8 kilograms (kg)/minute through use of two high flow dispensers and compression system.
4. Achieve hydrogen delivery costs of at least $2/kg through the use of a hydrogen pipeline connection with an adjacent plant.
5. Achieve at least a 98% reliability rate (uptime) through use of shared maintenance from plant and advanced station monitoring.
6. Increase energy efficiency through storage and delivery by over 80%.
7. Operate the station for at least the 12-month required demonstration period.
8. Document the cost-effectiveness of the pipeline fed hydrogen refueling station, as well as the key performance metrics.
9. Develop a station capable of scaling over time to serve other vehicle types and larger fleets.
10. Develop a station capable of serving both private and public fleets for the demonstration period.

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. Progress reports are due to the CAM the 10th day of each January, April, July, and October. The Quarterly Progress Report template can be found on the ECAMS Resources webpage available at https://www.energy.ca.gov/media/4691.

Product:

- Quarterly Progress Reports

Task 1.6 Final Report

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

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

The Final Report shall be a public document 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.
- Prepare a 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
- 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.
- If requested by the CAM, submit a draft of each subaward required to conduct the work under this Agreement to the CAM for review.
- If requested by the CAM, submit a final copy of the executed subaward.
- If Recipient intends to add new subrecipients or change subrecipients, then the Recipient shall notify the CAM.

Products:

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

TECHNICAL TASKS

TASK 2 ENGINEERING AND DESIGN

The goal of this task is to finalize the design of the hydrogen station and pipeline and submit a full application to the City of Victorville.

The Recipient shall:

- Prepare and finalize engineering design drawings and plans. These plans shall include but are not limited to a grading plan, trench and conduit, paving plan, and structural design for equipment housing.
- Receive local permitting authority's approval of the design drawings and plans.
- Provide a copy of *Stamped Engineering Design Drawings* to the CAM.

Products:

- Stamped Final Engineering Design Drawings

TASK 3 EQUIPMENT PROCUREMENT

The goal of this task is to procure all of the required equipment for the project, including but not limited to compressors, dispensers, and tubing.

The Recipient shall:

- Engage in final equipment specification discussions with the internal project team, key partners, and subrecipients to initiate procurement.
- Prepare *Finalized List of Equipment* to be procured for hydrogen dispensing. Provide a copy to the CAM.
- Prepare final *Purchase Orders for Equipment*. Provide a copy to the CAM.
- Prepare a *Schedule of Anticipated Delivery Dates for Equipment*. Provide a copy to the CAM.
- Arrange for delivery of all project equipment to the project site.
- Prepare and submit to the CAM a *Written Notification of Delivery of Equipment with Photographs* of equipment.

Products:

- Finalized List of Equipment
- Purchase Orders for Equipment
- Schedule of Anticipated Delivery Dates for Equipment
- Written Notification of Delivery of Equipment with Photographs

TASK 4 HYDROGEN SAFETY PLAN

The goal of this task is to develop a Hydrogen Safety Plan, with input from the Pacific Northwest National Laboratory (PNNL) Hydrogen Safety Panel (HSP), for the project's hydrogen fueling infrastructure including pipeline that will provide fuel for the fuel cell truck. This Hydrogen Safety Plan will demonstrate that hydrogen safety has been incorporated into project planning and execution and ensure appropriate procedures are in place to safely operate hydrogen technologies.

The Recipient shall:

- Prepare the Preliminary Hydrogen Safety Plan. The Preliminary Hydrogen Safety Plan shall include, but is not limited to:
    - A description of the technologies to be operated
    - The Project Team's approach to ensure safe operation of all hydrogen technologies
    - Results of a functional hazard analysis to be conducted by the Project Team
    - A conformity plan for relevant codes and standards

    - The Project Team's safety reporting policies and procedures
    - A detailed description about how the Project Team will provide safety training for the hydrogen fueling infrastructure's initial operation and safety training for all operators
- Submit the Preliminary Hydrogen Safety Plan for review by the Pacific Northwest National Laboratory (PNNL) Hydrogen Safety Panel (HSP)
- Receive a *copy of PNNL HSP's assessment of the Preliminary Hydrogen Safety Plan* and provide a copy to the CAM.
- Evaluate the PNNL HSP's comments and determine how to address them in the final plan.
- Prepare a *memo describing how the PNNL HSP's comments will be addressed in the Final Hydrogen Safety Plan* and provide a copy to the CAM.
- Incorporate feedback from PNNL HSP into the Final Hydrogen Safety Plan.
- Submit the Final Hydrogen Safety Plan to the PNNL HSP.
- Submit *written notification of submission of the Final Hydrogen Safety Plan to PNNL HSP* to the CAM.
- Complete a review of the station design for compliance with PNNL-approved hydrogen safety plan.
- Report unintended hydrogen releases to the Certified Unified Program Agency (CUPA) and the CAM.
- Report *Safety Incident Report(s) using the NREL Data Collection Tool (if and when applicable)*.

Products:

- Copy of PNNL HSP's assessment of the Preliminary Hydrogen Safety Plan
- Memo describing how the PNNL HSP's comments will be addressed in the Final Hydrogen Safety Plan
- Written notification of submission of the Final Hydrogen Safety Plan to PNNL HSP
- Safety Incident Report(s) using the NREL Data Collection Tool (if and when applicable)

TASK 5 CONSTRUCTION, INSTALLATION, AND COMMISSIONING

The goal of this task is to build and install the hydrogen refueling station including pipeline. This task also consists of startup and commissioning of the equipment to ensure its functionality and performance.

The Recipient shall:

- Begin grading the site.
- Install all civil works, foundations, road improvements, and other - infrastructure recommended by the local permitting authority.
- Work with Victorville Municipal Utility Service to receive approval for utility connection.
- Install and connect to all necessary infrastructure, such as electrical.
- Install hydrogen pipeline from adjacent renewable hydrogen plant. Provide *Written Notification of Installed Hydrogen Pipeline* to the CAM once completed.
- Install equipment and connect it to electrical infrastructure. Provide *Written Notification of Connection of Hydrogen Pipeline* to the CAM.
- Provide at least (6) six *high quality digital photographs of installed and connected equipment* to the CAM.
- Compile a *List of Tests* to be performed prior to start-up and commissioning. Provide a copy to the CAM.
- Complete tests specified in *List of Tests*.
- Complete a *Site Acceptance Testing Report* and provide a copy to the CAM.
- Commission the hydrogen refueling station.
- Provide *Written Notification of Station Commissioning* when station is operational to the CAM when completed.

Products:

- Written Notification of Installed Hydrogen Pipeline
- Written Notification of Connection of Hydrogen Pipeline
- High quality digital photographs of installed and connected equipment
- List of Tests
- Site Acceptance Testing Report
- Written Notification of Station Commissioning

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

Task 6 DEMONSTRATION OF HYDROGEN REFUELING STATION AND PIPELINE

The goal of this task is to fuel at least one heavy-duty truck using the hydrogen pipeline-fed station for the duration of the 12-month demonstration period. Record all

operational data and thoroughly document failure conditions.

The Recipient shall:

- Develop and execute the *Test Plan* over a minimum of 12 months in real fueling operations and record the results. Compare the performance results against the key metrics. The task results should include, but are not limited to a report showing pressures, temperatures, mass flow, cost effectiveness of hydrogen delivery through use of the pipeline connection, reliability monitoring, and energy efficiency performance.
- Complete a *Conclusion Report of Refueling System* testing. Conclude pass / fail conclusion on key metrics to include, but are not limited to:
    - Achieve flow rate of >8kg/min through use of high flow dispensers and compression system
    - Hydrogen delivery <$2/kg through use of hydrogen pipeline connection with adjacent plant
    - Reliability – Achieve at least a 98% reliability rate through use of shared maintenance from plant and advanced station monitoring
    - Increased energy efficiency through storage and delivery by over 80%
- Identify the trucks(s) and/or fleet(s) that will be utilizing the hydrogen refueling station and provide a *list of truck(s) and/or fleet(s) using the hydrogen refueling station* to the CAM.
- Develop a *fueling schedule*, including when the heavy-duty truck(s) will begin using the station, and submit to the CAM.

Products:

- Test Plan
- Conclusion Report of Refueling System testing
- List of truck(s) and/or fleet(s) using the hydrogen refueling station
- Fueling schedule

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

Task 7 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:

- Develop data collection test plan and/or submit the *NREL Data Collection Tool (Exhibit XE)* once the hydrogen refueling station becomes operational and continue to do so every quarter until the end of the agreement.
- Perform and submit results of purity 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; and,
  - 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.
- Troubleshoot any issues identified.
- Collect and provide data on the cost effectiveness of hydrogen delivery through use of the pipeline connection.
- Collect and provide the following data:
  - Number, type, date and location of hydrogen refueling stations installed.
  - Nameplate capacity of the installed equipment, in kg/day for hydrogen.
  - Location type, such as street, parking lot, hotel, restaurant or multi-unit housing.
  - Total cost per refueling station, the subsidy from the CEC per refueling station, federal subsidy per refueling station, utility subsidy per refueling station, and privately funded share per refueling station.
- Collect and provide 12 months of throughput, usage, and operations data from the project including, but not limited to:
  - Number of refueling sessions
  - Average refueling station downtime
  - Average session duration
  - Average kg dispensed

- Types of vehicles using the refueling equipment
- Applicable retail price for hydrogen fuel
- Payment method for public refueling, if applicable
- Maximum capacity of the new fueling system
- Normal operating hours, up time, downtime, 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
- Duty cycle of the current fleet and the expected duty cycle of future vehicle acquisitions

- Identify any current and planned use of renewable energy at the facility.
- Identify the source of the hydrogen using the *Renewable Hydrogen Report (Exhibit F)* template.
- 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 and explain the approved Low Carbon Fuel Standard pathway used.
- 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 data and information described above that is not provided in another specified product.

Products:

- Initial, biannual, and as needed hydrogen purity test results
- Quarterly NREL Data Collection Tool
- Documents and data supporting the cost effectiveness of hydrogen delivery through use of the pipeline connection.

- Data on refueling events will be submitted electronically in Quarterly Progress Reports.
- Biannual Renewable Hydrogen Report
- Data Collection Information and Analysis Report

TASK 8 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