



**CALIFORNIA  
ENERGY COMMISSION**



**California Energy Commission  
May 8, 2024 Business Meeting  
Backup Materials for Iwatani Corporation of America**

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: 24-0508-18a**

**STATE OF CALIFORNIA**

**STATE ENERGY RESOURCES  
CONSERVATION AND DEVELOPMENT COMMISSION**

**RESOLUTION: Iwatani Corporation of America**

**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-23-012 with Iwatani Corporation of America for a \$2,449,744 grant to execute multiple operations and maintenance projects across its seven existing hydrogen refueling stations in California. The projects will include the installation of new hardware components, development of new software tools, development of a customer facing mobile app, and expansion of spare parts inventory; 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:

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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-23-012

### B. Division Information

1. Division Name: Fuels and Transportation
2. Agreement Manager: Miki Crowell
3. MS-: MS-6
4. Phone Number: 916-314-3159

### C. Recipient's Information

1. Recipient's Legal Name: Iwatani Corporation of America
2. Federal ID Number: 95-4153947

### D. Title of Project

Title of project: Kaizen Iwatani

### E. Term and Amount

1. Start Date: 05-08-2024
2. End Date: 06-30-2028
3. Amount: \$2,449,744

### 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

#### **Agenda Item Subject and Description:**

IWATANI CORPORATION OF AMERICA. Proposed resolution approving agreement ARV-23-012 with Iwatani Corporation of America for a \$2,449,744 grant to execute multiple operations and maintenance projects across its seven existing hydrogen refueling stations in California and adopting staff's determination that this action is exempt from CEQA. The projects will include the installation of new hardware components, development of new software tools, development of a customer facing mobile app, and expansion of spare parts inventory. (Clean Transportation Program Funding) Contact: Miki Crowell (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:

**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:

CCR section number:

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, sec. 15301

Cal. Code Regs., tit. 14, sect. 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 existing or former use at the time of the lead agency’s determination, are categorically exempt from the provisions of the California Environmental Quality Act (CEQA). The proposed project will be carried out at seven existing hydrogen refueling stations located at various locations in California, namely Hawaiian Gardens, Seal Beach, Anaheim, Santa Ana, Corona, West Sacramento, and San Juan Capistrano. The project will provide operations and maintenance improvements such as the installation of new hardware components, development of new software tools, development of a customer facing mobile app, and expansion of spare parts inventory. The most major alteration to the existing structure included in this project will be removing and replacing an existing hydrogen refueling dispenser at the station in San Juan Capistrano. This work will involve cutting, removing, and replacing existing asphalt pavement, upgrading underground mechanical lines, and upgrading mechanical lines between the compressor and the dispenser.

The proposed project makes improvements to existing hydrogen refueling stations and will not expand the use beyond that already existing. Therefore, the project falls within section 15301 and will not have a significant effect on the environment.

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

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
Hydrogen Fuel Cell Partnership	\$ 150,000	\$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
AVEVA SOFTWARE, LLC	\$235,872	\$37,128
TENSORIOT INC.	\$235,872	\$37,128
FUELING AND SERVICE TECHNOLOGIES, INC.	\$0	\$511,000
ACCO ENGINEERED SYSTEMS, INC.	\$0	\$60,000
PROCORE TECHNOLOGIES, INC.	\$0	\$172,000
STRUCTURAL INTEGRITY ASSOCIATES, INC.	\$178,000	\$0

**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	\$2,449,744

**TOTAL Amount:** \$2,449,744

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: Yuto Kurosawa

Address: 5251 California Avenue, Suite 210

City, State, Zip: Irvine, CA 92617

Phone: (669) 286-0960

E-Mail: y.kurosawa@iwatani.com

**2. Recipient’s Project Manager**

Name: James Kast



STATE OF CALIFORNIA  
CALIFORNIA ENERGY COMMISSION

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

Address: 5251 California Avenue, Suite 210

City, State, Zip: Irvine, CA 92617

Phone: (713) 471-8368

E-Mail: jkast@iwatani.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	Yes

**Approved By**

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

**Agreement Manager:** Miki Crowell

**Approval Date:** 03/08/2024

**Office Manager:** Elizabeth John

**Approval Date:** 3/13/2024

**Deputy Director:** Melanie Vail

**Approval Date:** 3/15/2024

## Exhibit A SCOPE OF WORK

### TECHNICAL TASK LIST

Task #	CPR	Task Name
1		Administration
2		Air Conditioning Unit Installation
3		Station Modeling and Data
4		O&M Software Tools
5		Cooling System Upgrade
6	X	Tatsuno Dispenser Upgrade
7		Overcooling Solution
8		Spare Parts Program
9		H2FCP Website Server Upgrade
10		H2FCP SOSS Native Application Development for Mobile Devices
11		Storage Capacity
12		Operations and Reliability
13		Data Collection and Analysis
14		Project Fact Sheet

### KEY NAME LIST

Task #	Key Personnel	Key Subcontractor(s)	Key Partner(s)
1	James Kast - Iwatani Corporation of America (Iwatani)	None	None
2	Steve Bolin - Iwatani	None	None
3	James Kast - Iwatani	None	None
4	Steve Bolin, James Kast - Iwatani	None	None
5	Steve Bolin - Iwatani	None	None
6	Steve Bolin - Iwatani	None	None
7	Steve Bolin - Iwatani	None	None



<b>Task #</b>	<b>Key Personnel</b>	<b>Key Subcontractor(s)</b>	<b>Key Partner(s)</b>
8	Steve Bolin - Iwatani	None	None
9	David Park - Hydrogen Fuel Cell Partnership (H2FCP)	H2FCP	None
10	David Park - H2FCP	H2FCP	None
11	Steve Bolin, James Kast - Iwatani	None	None
12	Steve Bolin, James Kast - Iwatani	None	None
13	Steve Bolin, James Kast - Iwatani	None	None
14	James Kast - Iwatani	None	None

## **GLOSSARY**

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

<b>Term/ Acronym</b>	<b>Definition</b>
AB	Assembly Bill
AC	Air conditioning
ADA	Americans with Disabilities Act
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
H2FCP	Hydrogen Fuel Cell Partnership
O&M	Operations and Maintenance
PIIRA	Petroleum Industry Information Reporting Act
Recipient	Iwatani Corporation of America or Iwatani
SOSS	Station Online Status System

## Background

Assembly Bill (AB) 118 (Núñez, Chapter 750, Statutes of 2007), created the Clean Transportation Program (CTP). 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 CTP 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, Iwatani Corporation of America (the Recipient) submitted application #2 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:**

The current hydrogen refueling network remains a challenge for customers. Access to fuel, station performance, and up to date information are key areas impacting fuel cell electric vehicle drivers today. Addressing these core issues at existing stations is imperative to restore confidence in the market and enable growth of fuel cell electric mobility.

## **Goal of the Agreement:**

The goal of this Agreement is to improve the station performance, station reliability, and customer access to information. The Recipient intends to achieve these goals by executing multiple operations and maintenance projects across its seven existing hydrogen refueling stations located at various locations in California, namely Hawaiian Gardens, Seal Beach, Anaheim, Santa Ana, Corona, West Sacramento, and San Juan Capistrano. The projects will include the installation of new hardware components, development of new software tools, development of a customer facing mobile app, and expansion of spare parts inventory.

## **Objectives of the Agreement:**

The objectives of this Agreement are to show measurable improvements in station performance metrics and customer access to information. The primary objective is to increase average station uptime with a target of 95% uptime. Additional performance metrics include average ending state of charge of fills, amount of fuel dispensed, and contribution of each unique task on station uptime. Customer engagement metrics will be measured by the number of active users of the Station Online Status System (SOSS) mobile app platform and the potential for customer ratings via surveys. Finally, a key metric is the timing to execute with an aggressive target to complete many of the station improvements within 2024.

## **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 10<sup>th</sup> 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 AIR CONDITIONING UNIT INSTALLATION**

The goal of this task is to install air conditioning (AC) units at each Recipient's gaseous hydrogen refueling station: the Hawaiian Gardens station, the Seal Beach station, the Anaheim station, the Santa Ana station, and the Corona station. The AC units will control the temperature keeping it under the safety limit, eliminating the reoccurring problem of the electrical cabinet overheating and shutting down the station.

### **The Recipient shall:**

- Design AC unit installation, procure required parts, hire third party to install, commission and test function of unit.
- Take *before and after photographs* of the installed AC units at each station and provide a copy to the CAM.
- Gather data to show the increase in reliability from AC units keeping the stations online during days when the ambient temperature exceeds 93 degrees Fahrenheit (93 F).
- Provide a copy of *station uptime data* for each station comparing the pre-installation and post-installation of AC units for days when the ambient temperature exceeds 93 F in Quarterly Report(s).
- Develop an updated *design, procurement, and construction plan* that can be used on future stations to avoid the problem of the electrical cabinet overheating which causes the station to shut down. Provide a copy to the CAM.

### **Products:**

- Before and after photographs of installed AC units
- Station uptime data for each station comparing the pre-installation and post-installation of AC units for days when the ambient temperature exceeds 93 F in Quarterly Report(s)
- Updated *design, procurement and construction plan*

### **TASK 3 STATION MODELING AND DATA**

The goal of this task is to build a thermodynamic model to better understand hydrogen refueling station equipment for each of the Recipient's seven stations and make design improvements that lead to more effective operations of the stations.

### **The Recipient shall:**

- Track and model actual operational data with a digital twin allowing for the identification of equipment that may not be sized correctly or modes of operation that cannot be handled by the current equipment.
- Provide *written notification* of the completion of station models for each station to the CAM.
- Make a *list of suggested improvements* to improve station design and operational procedures following analysis of the model for each station. Provide a copy to the CAM.
- Update operational procedures and provide the *updated operational procedures* to the CAM.

### **Products:**

- Written notification of the completion of station models

- List of suggested improvements to both equipment design and operational procedures following analysis of the model
- Updated operational procedures

#### **TASK 4 O&M SOFTWARE TOOLS**

The goal of this task is to develop and use a software package that allows the Recipient to set up and track assets to improve and streamline operational workflows, increase utilization, and gather data from onsite activities for each of the Recipient's seven stations.

##### **The Recipient shall:**

- Set up a modern software solution that is user friendly and integrates with Recipient's other internal systems.
- Share *screenshots* of the platform with the CAM.
- Utilize the software creating new procedures, workflows, and data gathering tools that will provide a streamlined fit for purpose operations platform.
- Provide *written notification* of the completion of updating the operations platform with new standard operating procedures, workflows, data gathering, and audits to the CAM.
- Provide *data* showing the improvement to station uptime for each station in Quarterly Report(s).

##### **Products:**

- Screenshots of the platform
- Written notification of the completion of updating the operations platform with new standard operating procedures, workflows, data gathering, and audits
- Data showing the improvement to station uptime for each station in Quarterly Report(s)

#### **TASK 5 COOLING SYSTEM UPGRADE**

The goal of this task is to increase the cooling capacity of the cooling system at the Recipient's liquid hydrogen refueling station in West Sacramento by increasing the surface area of heat exchange and air flow capability to keep up with the cooling requirements of the compressor during the summer months.

##### **The Recipient shall:**

- Transport a larger air cooler from the Recipient's storage to the West Sacramento station, decommission old unit, clean entire cooling system, and install upgraded cooling tower.
- Take *before and after photographs* of the air cooler installation and provide to the CAM.

- Update all drawings and operations documentation affected by the change.
- Provide *updated operations documents* to the CAM.
- Monitor station performance and operating parameters to demonstrate that additional surface area has resulted in keeping the compressor's temperature in range increasing station reliability.
- Provide *station reliability data* comparing the pre-installation and post-installation of the larger air cooler in Quarterly Report(s).

**Products:**

- Before and after photographs of the air cooler installation
- Updated operations documents
- Station reliability data comparing the pre-installation and post-installation of the larger air cooler in Quarterly Report(s)

**TASK 6 TATSUNO DISPENSER UPGRADE**

The goal of this task is to upgrade the existing dispenser at the San Juan Capistrano station to a Tatsuno dispenser.

**The Recipient shall:**

- Perform engineering integration work required for replacing the dispenser.
- Procure parts and materials required for construction and commissioning of the new dispenser.
- Provide *before and after photographs* of the new dispenser installation to the CAM.
- Measure the decrease in the number of short fills and the increased reliability due to the dispenser upgrade.
- Provide *dispenser reliability data* comparing the pre-installation and post-installation of the new dispenser, including but not limited to the number of short fills and ending state of charge in Quarterly Report(s).

**Products:**

- Before and after photographs of the new dispenser installation
- Dispenser reliability data comparing the pre-installation and post-installation of the new dispenser, including but not limited to the number of short fills and ending state of charge in Quarterly Report(s)

**[CPR WILL BE HELD IN THIS TASK. SEE TASK 1.2 FOR DETAILS]**

## TASK 7 OVERCOOLING SOLUTION

The goal of this task is to mitigate down time at the West Sacramento station by adding a vaporizer, which will eliminate wait time between fills and overcooling alarms.

### The Recipient shall:

- Hire a third-party vaporizer company for the engineering and design work to size a vaporizer.
- Update all engineering and operations documentation with the change and update all affected maintenance procedures.
- Work with a third-party construction firm to install the vaporizer, test the function of the system, and return the station to operation.
- Take *before and after photos* of the vaporizer installation and provide a copy to the CAM.
- Provide *written notification* of installation and commissioning of the vaporizers to the CAM.
- Monitor station performance and operating parameters to demonstrate the success of the project in increasing the reliability of the station.
- Provide *station uptime data and dispensing capacity data* comparing the pre-installation and post-installation of the vaporizers at the stations in Quarterly Report(s).

### Products:

- Before and after photos of the vaporizer installation
- Written notification of installation and commissioning of the vaporizers
- Station uptime data and dispensing capacity data comparing the pre-installation and post-installation of the vaporizers at the stations in Quarterly Report(s)

## TASK 8 SPARE PARTS PROGRAM

The goal of this task is to increase station reliability by having an adequate number of spare parts and tools required for repair work at the Recipient's seven stations.

### The Recipient shall:

- Expand stock spare parts for all assets according to internal spare parts strategy which will optimize between part cost, lead time, and risk of reactive repairs. Rent a storage space where repair work can be done, tools can be stored, and spare parts access can be controlled.
- Provide a *list of parts and tools* procured for the spare parts program to the CAM.

- Obtain and store all tools required for repair work in a centralized location. Provide *photographs* of the warehouse and storage space where spare parts and tools will be stored to the CAM.
- Provide *data* showing reduced station downtime for each station in Quarterly Report(s) as a result of the spare parts program.

**Products:**

- List of parts and tools
- Photographs of warehouse and storage space where spare parts and tools are stored
- Data showing reduced station downtime for each station as a result of the spare parts program in Quarterly Report(s)

**TASK 9 HYDROGEN FUEL CELL PARTNERSHIP WEBSITE SERVER UPGRADE**

The goal of this task is to upgrade the Hydrogen Fuel Cell Partnership's (H2FCP) website server which hosts the H2FCP.org web page and also hosts the Station Online Status System (SOSS, m.h2fcp.org) to maintain system stability and provide computing bandwidth to improve SOSS.

**The Recipient shall:**

- Execute contract with H2FCP with a scope that includes but is not limited to:
  - Specify the replacement server requirements for the H2FCP website and SOSS.
  - Acquire and install the replacement server.
  - Migrate the H2FCP website and SOSS to the replacement server.
  - Test and launch H2FCP website and SOSS on the replacement server.
  - Summarize results of project by issuing a final report on the H2FCP server upgrade project.
- Provide *written notification* of server specification development to the CAM.
- Provide *written notification* of server upgrade completion to the CAM.
- Provide a copy of the *final report* on the H2FCP server upgrade project to the CAM.

**Products:**

- Written notification of server specification development
- Written notification of server upgrade completion
- Final report on the H2FCP server upgrade project



## TASK 10 H2FCP SOSS NATIVE APPLICATION DEVELOPMENT FOR MOBILE DEVICES

The goal of this task is to develop a native application of SOSS for use on mobile devices that will allow users to more readily access SOSS, improve ease of use, and increase the number of users of SOSS. This remains the primary platform for station operators to post the status and updates at stations.

### The Recipient shall:

- Execute contract with H2FCP with a scope that includes but is not limited to:
  - Source application development vendor and design the architecture of the native SOSS application. Included in the design will be the back-end structure and the front-end user interface.
  - Develop the native SOSS application based on the design architecture.
  - Beta-test the native SOSS application in iterative design, development, test, cycles.
  - Launch the new, beta-version of the SOSS native application.
- Provide *screenshots* of the developed application to the CAM.
- Provide *written notification* of the SOSS new application release to the CAM.
- Provide *data* on the number of active SOSS users and compiled customer feedback from the new mobile platform in Quarterly Report(s).

### Products:

- Screenshots of developed application
- Written notification of the SOSS new application release
- Data on the number of active SOSS users and compiled customer feedback from the new mobile platform in Quarterly Report(s)

## TASK 11 STORAGE CAPACITY

The goal of this task is to requalify the high-pressure tubes that were taken out of service due to a flawed pressure cycling calculator. Work will be completed at both West Sacramento and San Juan Capistrano stations. This will increase the high-pressure storage capacity onsite leading to better customer experience onsite as well as improved wear and tear on the compressor.

### The Recipient shall:

- Analyze pressure cycling data to calculate the actual life usage of the tubes.
- Transport the tubes if necessary and put back into service at the stations if they have life remaining.

- Provide a *report of modeling results* summarizing which tubes will be put back into service and the expected high-pressure capacity added to each station to the CAM.
- Take *before and after photographs* of any tube integration work at the two stations and provide to the CAM.
- Provide *data* showing the improvement of station performance metrics including ending state of charge and back-to-back fill performance in Quarterly Report(s).

**Products:**

- Report of modeling results summarizing which tubes will be put back into service and the expected high-pressure capacity added to each station
- Before and after photographs of any tube integration work at the two stations
- Data from the West Sacramento and San Juan Capistrano stations showing the improvement of station performance metrics including ending state of charge and back-to-back fill performance in Quarterly Report(s)

**TASK 12 OPERATIONS AND RELIABILITY**

The goal of this task is to operate all seven 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 13 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 14 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