

## CEC 94/270 Subcontractors and Key Partners

Agreement # ARV-12-062

Recipient: Air Liquide Industrial US LP

Major AND Minor Subcontractors (also include equipment vendors):

1. Air Liquide Advanced Technologies
2. Hydrogen Frontier, Inc.

Key Partners:

1. PDC Machines
2. Hofer Compressors
3. Consultants Mesar

**GRANT REQUEST FORM (GRF)**

CEC-270 (Revised 02/13)

CALIFORNIA ENERGY COMMISSION

New Agreement ARV-12-062 (To be completed by CGL Office)

Division	Agreement Manager:	MS-	Phone
600 Fuels and Transportation Division	Tobias Muench	27	916-654-4831

Recipient's Legal Name	Federal ID Number
Air Liquide Industrial US LP	75-3174747

Title of Project
California FCV Initiative - Hydrogen Infrastructure Market Development Program

Term and Amount	Start Date	End Date	Amount
	6 / 30 / 2013	6 / 30 / 2016	\$ 1,500,000

**Business Meeting Information**
 ARFVTP agreements under \$75K delegated to Executive Director.

Proposed Business Meeting Date	6 / 12 / 2013	<input type="checkbox"/> Consent	<input checked="" type="checkbox"/> Discussion
Business Meeting Presenter		Time Needed:	10 minutes

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

**Agenda Item Subject and Description**

Possible approval of Agreement ARV-12-062 with Air Liquide Industrial US LP for a \$1,500,000 grant to build one hydrogen fueling station in Anaheim, CA. This hydrogen fueling station will help build an early commercial network of hydrogen fueling stations to supply fuel cell vehicles with hydrogen fuel. Hydrogen fuel cell technology for transportation represents a significant option to reduce greenhouse gas emissions and displace the use of petroleum fuels in California. \$933,966.00 in match funds

**California Environmental Quality Act (CEQA) Compliance**

1. Is Agreement considered a "Project" under CEQA?  
 Yes (skip to question 2)  No (complete the following (PRC 21065 and 14 CCR 15378):  
 Explain why Agreement is not considered a "Project":  
 Agreement will not cause direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment because .
2. If Agreement is considered a "Project" under CEQA:  
 a) Agreement **IS** exempt. (Attach draft NOE)  
 Statutory Exemption. List PRC and/or CCR section number:  
 Categorical Exemption. List CCR section number: 15303  
 Common Sense Exemption. 14 CCR 15061 (b) (3)  
 Explain reason why Agreement is exempt under the above section:  
 This project is New Construction of Small Structures. It will involve the installation of several small hydrogen storage tanks, located inside a steel container enclosure, and compression and dispensing equipment at 1 location. The main hydrogen on-site storage is done through parking a DOT-compliant hydrogen tube-trailer next to the equipment and connecting it with breakaway-safe SmartHoses. The trailers are used to supply the station with hydrogen and when empty are replaced with a full trailer. A trailer stores up to 100 Kg of hydrogen. A chiller is also being installed (cooler) to control the dispensing temperature. The storage tanks inside the steel container are used for booster compression and will hold smaller amounts of hydrogen (approx.20-70Kg). The hydrogen dispenser will dispense at 350 bar and 700 bar.  
 b) Agreement **IS NOT** exempt. (Consult with the legal office to determine next steps.)  
 Check all that apply  
 Initial Study  Environmental Impact Report  
 Negative Declaration  Statement of Overriding Considerations  
 Mitigated Negative Declaration

**List all subcontractors (major and minor) and equipment vendors: (attach additional sheets as necessary)**

Legal Company Name:	Budget
Air Liquide Advanced Technologies	\$ 58,407
Hydrogen Frontier, Inc.	\$ 422,942
	\$ 0

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

**GRANT REQUEST FORM (GRF)**

CEC-270 (Revised 02/13)

CALIFORNIA ENERGY COMMISSION



Legal Company Name:
PDC Machines, Hofer Compressors, Consultants Mesar, Local Civil, Plumbing and Electrical contractors

Budget Information			
Funding Source	Funding Year of Appropriation	Budget List No.	Amount
ARFVTF	2010		\$1,500,000
Funding Source			\$
R&D Program Area:	Select Program Area	TOTAL:	\$1,500,000
Explanation for "Other" selection			
Reimbursement Contract #:		Federal Agreement #:	

Recipient's Administrator/ Officer				Recipient's Project Manager			
Name:	Bob Oesterreich			Name:	Tobias Muench		
Address:	2700 Post Oak Blvd			Address:	1516 Ninth Street		
City, State, Zip:	Houston, TX 77056			City, State, Zip:	Sacramento, CA 95814		
Phone:	713-402-2161	Fax:	- -	Phone:	916-654-4831	Fax:	916-654-4753
E-Mail:	bob.oesterreich@airliquide.com			E-Mail:	tmuench@energy.ca.gov		

Selection Process Used	
<input checked="" type="checkbox"/> Competitive Solicitation	Solicitation #: PON-12-606
<input type="checkbox"/> First Come First Served Solicitation	

The following items should be attached to this GRF	
1. Exhibit A, Scope of Work	<input checked="" type="checkbox"/> Attached
2. Exhibit B, Budget Detail	<input checked="" type="checkbox"/> Attached
3. CEC 105, Questionnaire for Identifying Conflicts	<input checked="" type="checkbox"/> Attached
4. Recipient Resolution	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Attached
5. CEQA Documentation	<input type="checkbox"/> N/A <input checked="" type="checkbox"/> Attached

_____ Agreement Manager	_____ Date	_____ Office Manager	_____ Date	_____ Deputy Director	_____ Date
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## EXHIBIT A SCOPE OF WORK

### TECHNICAL TASK LIST

Task #	CPR	Task Name
1		Administration
2		Engineering Design and Fabrication
3	X	Site Preparation, and Construction of the hydrogen fueling station
4		Startup and Commissioning
5		Ongoing Operations
6		Data Collection & Analysis

### KEY NAME LIST

Task #	Key Personnel	Key Subcontractor(s)	Key Partner(s)
1	Bob Oesterreich (AL) David Osborne (AL)	Dan Poppe Hydrogen Frontier (HF)	
2	David Osborne (AL) Jeff Schlosser (AL)	Julie Flynn (ALAT) Dan Poppe (HF)	PDC Machines Hofer Compressors Consultants Mesar
3	David Osborne (AL) Jeff Schlosser (AL)	Julie Flynn (ALAT) Dan Poppe (HF)	
4	David Osborne (AL) Jeff Schlosser (AL)	Julie Flynn (ALAT) Dan Poppe (HF)	Hofer Compressors Consultants Mesar
5	Jeff Schlosser (AL)	Dan Poppe (HF)	
6	Jeff Schlosser (AL)	Dan Poppe (HF)	

### GLOSSARY

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

Term/ Acronym	Definition
ARFVT	Alternative and Renewable Fuel and Vehicle Technology
CAM	Commission Agreement Manager
CPR	Critical Project Review
FTD	Fuels and Transportation Division
Recipient (AL)	<i>Air Liquide Industrial US LP</i>
ALAT	<i>Air Liquide Advanced Technologies, Grenoble France</i>

<b>Term/ Acronym</b>	<b>Definition</b>
FCEV	<i>Fuel Cell Electric Vehicle</i>
HF	<i>Hydrogen Frontier – Installation and operation partner to Air Liquide</i>

## **BACKGROUND**

Assembly Bill 118 (Núñez, Chapter 750, Statutes of 2007), created the Alternative and Renewable Fuel and Vehicle Technology (ARFVT) Program. The statute, subsequently amended by AB 109 (Núñez Chapter 313, Statutes of 2008), authorizes the Energy Commission to develop and deploy alternative and renewable fuels and advanced transportation technologies to help attain the state’s climate change policies. The Energy Commission has an annual program budget of approximately \$100 million and provides financial support for projects that:

- Develop and improve alternative and renewable low-carbon fuels;
- Optimize alternative and renewable fuels for existing and developing engine technologies;
- Produce alternative and renewable low-carbon fuels in California;
- Decrease, on a full fuel cycle basis, the overall impact and carbon footprint of alternative and renewable fuels and increase sustainability;
- Expand fuel infrastructure, fueling stations, and equipment;
- Improve light-, medium-, and heavy-duty vehicle technologies;
- Retrofit medium- and heavy-duty on-road and non-road vehicle fleets;
- Expand infrastructure connected with existing fleets, public transit, and transportation corridors; and
- Establish workforce training programs, conduct public education and promotion, and create technology centers.

The California Energy Commission issued solicitation PON-12-606 to provide funding opportunities under the ARFVT Program for projects which expand the network of publicly accessible hydrogen fueling stations to serve the current population of fuel cell electric vehicles (FCEVs) and to accommodate the planned large-scale roll-out of FCEVs commencing in 2015.

In response to PON-12-606, the Recipient submitted proposal #3 which was proposed for funding in the Energy Commission’s Notice of Proposed Awards on April 11, 2013. The solicitation PON-12-606 and the Recipient’s application are both incorporated by reference to 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 the Energy Commission’s Award, the Energy Commission’s Award shall control. Similarly, in the event of any conflict or inconsistency between the terms of this Agreement and the Recipient’s Application, the terms of this Agreement shall control.

**Problem Statement:**

Hydrogen distribution and dispensing infrastructure is not readily available to meet projected commercial targets for the deployment of FCVs. As FCVs are deployed in greater quantities, a program is needed to ensure ample fuel supply via a network of fueling stations that provides coverage which takes advantage of the range of the vehicle and a means to transport and store/dispense the hydrogen.

**Goals of the Agreement:**

The goal of this Agreement is to prove hydrogen vehicles can be successful in large scale urban and suburban settings and to supply the infrastructure that will allow the automobile suppliers to roll out new cars in larger volumes than in the past. In order to be successful:

1. It must be proven to the consumer that hydrogen can be stored and dispensed as safely or more safely as gasoline.
2. The fueling technology must be adequate to give drivers the same high quality fuel supply they expect when they fill their car with gasoline.
3. The capacity of the fueling stations must be sufficient so gas is always available when drivers require it. Long periods of system recharge are not acceptable.
4. The hydrogen must be from a renewable source if this technology is to be successful in the long term. This project will enable the market to improve the entire hydrogen supply chain, and increase the percentage of renewable hydrogen currently used.
5. The additional usage of the technology should allow for a long term reduction in infrastructure costs and hydrogen supply.

**Objectives of the Agreement:**

The objectives of this Agreement are to:

1. Deploy safe high quality compression and dispensing technology.
2. Maintain the system performance so that availability, ease of use, and filling speed meet or exceed customers' expectations.
3. Increase Air Liquide's hydrogen supply chain in California to help increase overall supply, market competition, and percentage of available renewable hydrogen.
4. Prove that the technology and cost per kg hydrogen can be reduced with increased usage of FCEVs.

**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 CAM shall designate the date and location of this meeting and provide an agenda to the Recipient prior to the meeting.

**The Recipient shall:**

- Attend a “Kick-Off” meeting with the Commission Agreement Manager, the Grants Officer, and a representative of the Accounting Office. The Recipient shall bring its Project Manager, Agreement Administrator, Accounting Officer, and others designated by the Commission Project Manager to this meeting.
- Discuss the following administrative and technical aspects of this Agreement at the meeting:
  - Agreement Terms and Conditions
  - Critical Project Review (Task 1.2)
  - Match fund documentation (Task 1.6) No reimbursable work may be done until this documentation is in place.
  - Permit documentation (Task 1.7)
  - Subcontracts needed to carry out project (Task 1.8)
  - The CAM’s expectations for accomplishing tasks described in the Scope of Work
  - An updated Schedule of Products and Due Dates
  - Monthly Progress Reports (Task 1.4)
  - Technical Products (Product Guidelines located in Section 5 of the Terms and Conditions)
  - Final Report (Task 1.5)

**Recipient Products:**

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

**Commission Project Manager Product:**

- Kick-Off Meeting Agenda

**Task 1.2 Critical Project Review (CPR) Meetings**

CPRs provide the opportunity for frank discussions between the Energy Commission and the Recipient. The goal of this task is to determine if the project should continue to receive Energy Commission funding to complete this Agreement and to identify any needed modifications to the tasks, products, schedule or budget.

The Commission Project Manager 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 Commission Grants Officer, the Fuels and Transportation Division (FTD) team lead, other Energy Commission staff and management as well as other individuals selected by the CAM to provide support to the Energy Commission.

**The CAM shall:**

- Determine the location, date, and time of each CPR meeting with the Recipient. These meetings generally take place at the Energy Commission, but they may take place at another location.
- 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 Energy Commission staff to present the findings, conclusions, and recommendations. The final meeting must be completed during the closeout of this Agreement.

This meeting will be attended by, at a minimum, the Recipient, the Commission Grants Office Officer, and the Commission Project Manager. 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 Commission Project Manager.

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 Commission Project Manager will determine the appropriate meeting participants.

The administrative portion of the meeting shall be a discussion with the Commission Project Manager and the Grants Officer about the following Agreement closeout items:

- What to do with any equipment purchased with Energy Commission funds (Options)
- Energy Commission's request for specific "generated" data (not already provided in Agreement products)
- Need to document Recipient's disclosure of "subject inventions" developed under the Agreement
- "Surviving" Agreement provisions
- Final invoicing and release of retention
- Prepare a schedule for completing the closeout activities for this Agreement.

**Products:**

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

**Task 1.4 Monthly Progress Reports**

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

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

**The Recipient shall:**

- Prepare a Monthly Progress Report which summarizes all Agreement activities conducted by the Recipient for the reporting period, including an assessment of the ability to complete the Agreement within the current budget and any anticipated cost overruns. Each progress report is due to the Commission Agreement Manager within 10 days of the end of the reporting period. The recommended specifications for each progress report are contained in Section 6 of the Terms and Conditions of this Agreement.
- In the first Monthly Progress Report and first invoice, document and verify match expenditures and provide a synopsis of project progress, if match funds have been expended or if work funded with match share has occurred after the notice of proposed award but before execution of the grant agreement. If no match funds have been expended or if no work funded with match share has occurred before execution, then state this in the report. All pre-execution match expenditures must conform to the requirements in the Terms and Conditions of this Agreement.

**Product:**

- Monthly Progress Reports

**Task 1.5 Final Report**

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

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

The Final Report shall be a public document. If the Recipient has obtained confidential status from the Energy Commission and will be preparing a confidential version of the Final Report as well, the Recipient shall perform the following activities for both the public and confidential versions of the Final Report.

**The Recipient shall:**

- Prepare an Outline of the Final Report, if requested by the CAM.
- Prepare a Final Report following the latest version of the Final Report guidelines which will be provided by the CAM. The CAM shall provide written comments on the Draft Final Report within fifteen (15) working

days of receipt. The Final Report must be completed at least 60 days before the end of the Agreement Term.

- Submit one bound copy of the Final Report with the final invoice.

**Products:**

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

**Task 1.6 Identify and Obtain Matching Funds**

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

The costs to obtain and document match fund commitments are not reimbursable through this Agreement. Although the Energy Commission budget for this task will be zero dollars, the Recipient may utilize match funds for this task. Match funds shall be spent concurrently or in advance of Energy Commission funds for each task during the term of this Agreement. Match funds must be identified in writing and the associated commitments obtained before the Recipient can incur any costs for which the Recipient will request reimbursement.

**The Recipient shall:**

- Prepare a letter documenting the match funding committed to this Agreement and submit it to the Commission Project Manager at least 2 working days prior to the kick-off meeting. The letter shall include 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 Commission Project Manager if during the course of the Agreement additional match funds are received.
- Notify the Commission Project Manager within 10 days if during the course of the Agreement existing match funds are reduced. Reduction in match funds must be approved through a formal amendment to the Agreement and may trigger an additional CPR meeting.

**Products:**

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

**Task 1.7 Identify and Obtain Required Permits**

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

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

**The Recipient shall:**

- Prepare a letter documenting the permits required to conduct this Agreement and submit it to the Commission Project Manager 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 Commission Project Manager.
- As permits are obtained, send a copy of each approved permit to the Commission Project Manager.
- If during the course of the Agreement permits are not obtained on time or are denied, notify the Commission Project Manager 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)

**Task 1.8 Obtain and Execute Subcontracts**

The goal of this task is to ensure quality products and to procure subcontractors required to carry out the tasks under this Agreement consistent with the Agreement Terms and Conditions and the Recipient's own procurement policies and procedures. It will also provide the Energy Commission an opportunity to review the subcontracts to ensure that the tasks are consistent with this Agreement, and that the budgeted expenditures are reasonable and consistent with applicable cost principles.

**The Recipient shall:**

- Manage and coordinate subcontractor activities.
- Submit a draft of each subcontract required to conduct the work under this Agreement to the Commission Agreement Manager for review.
- Submit a final copy of the executed subcontract.
- If Recipient decides to add new subcontractors, then the Recipient shall notify the CAM.

**Products:**

- Draft subcontracts
- Final subcontracts

## **TECHNICAL TASKS**

### **TASK 2 ENGINEERING AND DESIGN FABRICATION**

The goal of this task is to finalize all equipment design specifications and complete the plan for a third party integrator to package each of the components into a workable product. All of the work necessary to plan the construction phase will be included in this task.

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

- Finalize development of the piping and instrumentation diagram, and perform a detailed Risk Assessment.
- Develop detailed equipment specifications for all major components.
  - Design hydrogen fueling station equipment to applicable codes and standards for hydrogen fuel quality, production, compression, purification, fueling, storage devices and construction/operation. The hydrogen fueling station will be capable of delivering a minimum of 100kg/day.
  - Design hydrogen fueling station equipment to provide hydrogen that meets SAE J2799.
  - Design retail SAE J2601 / J2719 compliant 350/700 bar dispensers with back to back refueling capability.
- Develop purchasing specifications for all components of the hydrogen fueling station.
- Develop specifications and manage the integration of the components into a final package to be delivered on site.
- Prepare and submit engineering and design fabrication report which includes, but is not limited to:
  - Bill of materials and component purchasing specifications.
  - Final piping and instrumentation diagram updated with all operation setpoints and alarm and shutdown setpoints.
  - Final risk assessment.
  - Equipment integration plan.
  - Final construction documents, and permit applications.

#### **Products:**

- Engineering and Design Fabrication Report

### **TASK 3 SITE PREPARATION AND CONSTRUCTION OF THE HYDROGEN FUELING STATION**

The goal of this task is to prepare the site and complete site work and system installation. All of the work necessary to receive permits and complete the final construction will be included in this task.

**The Recipient shall:**

- Procure and integrate the components required for the hydrogen fueling station capable of delivering a minimum of 100kg/day.
- Procure and integrate SAE J2601 / J2719 compliant 350/700 bar compliant dispenser components with back to back refueling capability.
- Complete all construction including, but not limited to, utility upgrades, civil, electrical, mechanical work and equipment installation.
- Prepare and submit Final Construction Report which includes, but is not limited to the final construction documents.

**Products:**

- Final Construction Report

**TASK 4 STARTUP AND COMMISSIONING**

The goal of this task is to successfully commission the refueling station. Upon completion, all systems will have been successfully tested and the Pre-Startup Safety Review will confirm that the system is installed in accordance with design specifications. Deviations to the original plans will be noted with proper documentation of approvals.

**The Recipient shall:**

- Document all changes to plan and have them approved with Air Liquide's Management of Change Program.
- Complete all Pre-Startup Safety Review documentation in order to confirm installation in accordance with design specifications.
- Complete all qualification testing to ensure compliance with J2601, and J2719.
- Perform all necessary community outreach to inform and educate first responders, and other interested public and private organizations.
- Prepare and submit pre-startup safety review which includes any possible management of change requests and their subsequent approval.
- Prepare and submit startup system qualification reports which will include written notification of start-up of hydrogen fueling station, including time and date of start-up, tests performed, and test results.

**Products:**

- Completed Pre-Startup Safety Review
- Start up System Qualification reports

**TASK 5 ONGOING OPERATIONS**

The goal of this task is to maintain safe and reliable operations of the refueling station.

**The Recipient shall:**

- Enact all appropriate maintenance and operations procedures.
- Enact all preventative maintenance procedures.

- Ensure all remote system surveillance is operational, and system reactions are appropriate and timely.
- Perform all safety system preventative maintenance tasks.
- Prepare and submit the ongoing operations report which will include, but is not limited to:
  - Equipment maintenance procedures.
  - Preventative maintenance procedures.
  - Operational logs.
  - Alarm logs.
  - Safety equipment testing reports.

**Products:**

- Ongoing Operations Report

**Task 6 DATA COLLECTION AND ANALYSIS**

The goal of this task is to collect operational data from the project, to analyze that data for economic and environmental impacts, and to include the data and analysis in the Final Report.

- Troubleshoot any issues identified that could possible effect the collection of data.
- Collect a minimum of 12 months of throughput, usage, and operations data from the hydrogen fueling station including, but not limited to:
  - Number of hydrogen fills per day per station.
  - Number of days (per month) hydrogen vehicles are fueled at the hydrogen fueling station.
  - Number of days (per month) the hydrogen fueling station is operational.
  - Maximum capacity of the new fueling system (actual).
  - Gallons of gasoline and/or diesel fuel displaced by the operations of the station.
  - Expected air emissions reduction, for example:
    - Non-methane hydrocarbons
    - Oxides of nitrogen
    - Non-methane hydrocarbons plus oxides of nitrogen
    - Particulate Matter
    - Formaldehyde

- Summarize the use of renewable energy at the hydrogen fueling facility.
- Summarize the percentage and source(s) of renewable hydrogen fuel used at the hydrogen fueling station.
- Summarize greenhouse gas reduction, water efficiency, and natural resource impacts, and overall environmental impact.
- Summarize the potential impact of the hydrogen fueling station in the current network of existing and planned hydrogen fueling stations in the state of California.
- Describe any energy efficiency measures used at the hydrogen fueling station that may exceed Title 24 standards, Part 6 of the California Code Regulations (CCR).
- Provide data about the actual and the potential jobs creation, economic development, and increased state and local revenue.
- Provide a quantified estimate of the project's carbon intensity (CI) values for life-cycle greenhouse gas emissions.
- Summarize project performance and accomplishments.
- Compile the data and information specified above in the Final Report format provided by the California Energy Commission.

**Products:**

- Data collection information and analysis shall be included in the Final Report as defined in task 1.5 in the format provided by the California Energy Commission.