

CONTRACT REQUEST FORM (CRF)

CEC-94 (Revised 10/2015)

CALIFORNIA ENERGY COMMISSION

A) New Agreement 600-17-007 (To be completed by CGL Office)

| B) Division | Agreement Manager: | MS- | Phone |
|---------------------------------------|--------------------|-----|--------------|
| 600 Fuels and Transportation Division | Jane Berner | 6 | 916-651-9077 |

| C) Contractor's Legal Name | Federal ID Number |
|--------------------------------------|-------------------|
| Alliance for Sustainable Energy, LLC | 26-1939342 |

| D) Title of Project |
|--|
| California Hydrogen Infrastructure Research Consortium |

| E) Term and Amount | Start Date | End Date | Amount |
|--------------------|---------------|---------------|------------|
| | 6 / 30 / 2018 | 3 / 30 / 2021 | \$ 100,000 |

| F) Business Meeting Information | | | |
|--|---------------|----------------------------------|--|
| <input type="checkbox"/> Operational agreement (see CAM Manual for list) to be approved by Executive Director <input type="checkbox"/> ARFVTP agreements \$75K and under delegated to Executive Director. | | | |
| Proposed Business Meeting Date | 6 / 13 / 2018 | <input type="checkbox"/> Consent | <input checked="" type="checkbox"/> Discussion |
| Business Meeting Presenter | | Time Needed: | 5 minutes |
| Please select one list serve. Altfuels (AB118- ARFVTP) | | | |

| Agenda Item Subject and Description |
|--|
| Proposed resolution approving Agreement 600-17-007 with the Alliance for Sustainable Energy, LLC, Manager and Operator of the National Renewable Energy Laboratory in the amount of \$100,000 to provide technical research related to hydrogen infrastructure, as well as to verify solutions to problems impacting the hydrogen industry. This agreement leverages \$760,000 in federal and other funding. |

| G) California Environmental Quality Act (CEQA) Compliance |
|---|
| 1. Is Agreement considered a "Project" under CEQA? <input checked="" type="checkbox"/> Yes (skip to question 2) <input type="checkbox"/> 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: <input checked="" type="checkbox"/> a) Agreement IS exempt. (Attach draft NOE) <input type="checkbox"/> Statutory Exemption. List PRC and/or CCR section number: <input checked="" type="checkbox"/> Categorical Exemption. List CCR 20 CCR 15301 section number: <input type="checkbox"/> Common Sense Exemption. 14 CCR 15061 (b) (3) Explain reason why Agreement is exempt under the above section: Expected tasks may be performed at the NREL facility or other National Labs for analytical evaluation or at any of the ARFVTP funded hydrogen refueling stations throughout California for technical field analyses and verification of the existing hydrogen refueling components and systems. The field work may involve minor alteration of existing equipment/system at existing hydrogen refueling stations and installation and monitoring of retrofits. This work falls within the minor alteration of existing facilities involving no expansion of use in 20 CCR 15301. |
| <input type="checkbox"/> b) Agreement IS NOT exempt. (Consult with the legal office to determine next steps.) Check all that apply <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> Initial Study <input type="checkbox"/> Negative Declaration <input type="checkbox"/> Mitigated Negative Declaration </div> <div> <input type="checkbox"/> Environmental Impact Report <input type="checkbox"/> Statement of Overriding Considerations </div> </div> |

| H) List all subcontractors (major and minor) and equipment vendors: (attach additional sheets as necessary) | | | | |
|---|--------|--------------------------|--------------------------|--------------------------|
| Legal Company Name: | Budget | SB | MB | DVBE |
| | \$ 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | \$ 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | \$ 0 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

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

CONTRACT REQUEST FORM (CRF)

CEC-94 (Revised 10/2015)

CALIFORNIA ENERGY COMMISSION



| |
|---|
| Legal Company Name: |
| CARB |
| South Coast Air Quality Management District, GO Biz |

J) Budget Information

| Funding Source | Funding Year of Appropriation | Budget List No. | Amount |
|-----------------------------------|-------------------------------|----------------------|-----------|
| ARFVTP | | | \$100,000 |
| Funding Source | | | \$ |
| Funding Source | | | \$ |
| Funding Source | | | \$ |
| Funding Source | | | \$ |
| R&D Program Area: N/A | | TOTAL: | \$100,000 |
| Explanation for "Other" selection | | | |
| Reimbursement Contract #: | | Federal Agreement #: | |

K) Contractor's Administrator/ Officer

| Contractor's Administrator/ Officer | | Contractor's Project Manager | |
|-------------------------------------|----------------------------|------------------------------|----------------------------|
| Name: | Lauren Klun | Name: | Jennifer Kurtz |
| Address: | 15013 Denver West Parkway, | Address: | 15013 Denver West Parkway, |
| City, State, Zip: | Golden, CO 80401 | City, State, Zip: | Golden, CO 80401 |
| Phone: | 303-275-4410 | Fax: | - - |
| E-Mail: | | E-Mail: | Jennifer.Kurtz@nrel.gov |

L) Selection Process Used (For amendments, address amendment exemption or NCB, do not identify solicitation type of original agreement.)

| | | | | | | | |
|--|---------------------------|-----------------|-----|------------|--|----------|--|
| <input type="checkbox"/> Solicitation | Select Type | Solicitation #: | - - | # of Bids: | | Low Bid? | <input type="checkbox"/> No <input type="checkbox"/> Yes |
| <input type="checkbox"/> Non Competitive Bid | (Attach CEC 96) | | | | | | |
| <input checked="" type="checkbox"/> Exempt | Other Governmental Entity | | | | | | |

M) Contractor Entity Type

| |
|---|
| <input checked="" type="checkbox"/> Private Company (including non-profits) |
| <input type="checkbox"/> CA State Agency (including UC and CSU) |
| <input type="checkbox"/> Government Entity (i.e. city, county, federal government, air/water/school district, joint power authorities, university from another state) |

N) Is Contractor a certified Small Business (SB), Micro Business (MB) or DVBE?

| | |
|--------------------------------|---|
| | <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes |
| If yes, check appropriate box: | <input type="checkbox"/> SB <input type="checkbox"/> MB <input type="checkbox"/> DVBE |

O) Civil Service Considerations

| |
|--|
| <input type="checkbox"/> Not Applicable (Agreement is with a CA State Entity or a membership/co-sponsorship) |
| <input type="checkbox"/> Public Resources Code 25620, et seq., authorizes the Commission to contract for the subject work. (PIER) |
| <input checked="" type="checkbox"/> The Services Contracted: <ul style="list-style-type: none"> <input type="checkbox"/> are not available within civil service <input type="checkbox"/> cannot be performed satisfactorily by civil service employees <input checked="" type="checkbox"/> are of such a highly specialized or technical nature that the expert knowledge, expertise, and ability are not available through the civil service system. |
| <input type="checkbox"/> The Services are of such an: <ul style="list-style-type: none"> <input type="checkbox"/> urgent <input type="checkbox"/> temporary, or <input type="checkbox"/> occasional nature that the delay to implement under civil service would frustrate their very purpose. |

Justification:

NREL issued a request for proposals to participate in cooperative research and development agreement (CRADA) projects with the Hydrogen at Scale (H2@Scale) national laboratories consortium. A proposal was submitted by the Governor's Office of Business and Economic Development (GO-Biz) for GO-Biz, California Air Resources Board, South Coast Air Quality Management District, and the Energy Commission to form a research consortium that would assist California in decisions and evaluations related to hydrogen infrastructure, as well as to verify solutions to problems impacting the industry. This agreement will leverage total \$760,000 from DOE, NREL, and other consortium members. NREL provides specific, focused expertise in research solutions for hydrogen fueling issues that is not available within civil service.

CONTRACT REQUEST FORM (CRF)

CEC-94 (Revised 10/2015)

CALIFORNIA ENERGY COMMISSION

**P) Payment Method**

- ☐ A. Reimbursement in arrears based on:
- ☐ Itemized Monthly ☐ Itemized Quarterly ☐ Flat Rate ☐ One-time
- ☒ B. Advanced Payment
- ☒ C. Other, explain: One payment of \$100,000.

Q) Retention

1. Is Agreement subject to retention? ☒ No ☐ Yes
- If Yes, Will retention be released prior to Agreement termination? ☐ No ☐ Yes

R) Justification of Rates

The Energy Commission share was determined via competitive solicitation process, H2@Scale Laboratory CRADA Call.

<https://www.nrel.gov/hydrogen/h2-at-scale-crada-call.html>

S) Disabled Veteran Business Enterprise Program (DVBE)

1. ☒ Exempt (Interagency/Other Government Entity)
2. ☐ Meets DVBE Requirements DVBE Amount:\$ 0 DVBE %: _____
- ☐ Contractor is Certified DVBE
- ☐ Contractor is Subcontracting with a DVBE: _____
3. ☐ Contractor selected through CMAS or MSA with no DVBE participation.
4. ☐ Requesting DVBE Exemption (attach CEC 95)

T) Miscellaneous Agreement Information

1. Will there be Work Authorizations? ☒ No ☐ Yes
2. Is the Contractor providing confidential information? ☒ No ☐ Yes
3. Is the contractor going to purchase equipment? ☒ No ☐ Yes
4. Check frequency of progress reports
- ☐ Monthly ☒ Quarterly ☐ Other...
5. Will a final report be required? ☐ No ☒ Yes
6. Is the Agreement, with amendments, longer than a year? If yes, why? ☐ No ☒ Yes
- This is a two-year collaboration research project.

U) The following items should be attached to this CRF (as applicable)

- | | | |
|---|---|--|
| 1. Exhibit A, Scope of Work | <input type="checkbox"/> N/A | <input checked="" type="checkbox"/> Attached |
| 2. Exhibit B, Budget Detail | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |
| 3. CEC 96, NCB Request | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |
| 4. CEC 95, DVBE Exemption Request | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |
| 5. CEQA Documentation | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |
| 6. Resumes | <input checked="" type="checkbox"/> N/A | <input type="checkbox"/> Attached |
| 7. CEC 105, Questionnaire for Identifying Conflicts | | <input checked="" type="checkbox"/> Attached |

Agreement Manager

Date

Office Manager

Date

Deputy Director

Date

EXHIBIT A
SCOPE OF WORK

National Renewable Energy Laboratory

Cooperative Research and Development Agreement

Appendix A - Joint Work Statement
H2@Scale

CRADA # CRD-18-00754

1. Alliance for Sustainable Energy (Contractor) agrees to provide laboratory/research services as described herein:

Many stakeholders are working on hydrogen and fuel cell products, markets, requirements, mandates, and policies. California has been leading the way for hydrogen infrastructure and fuel cell electric vehicle deployment. This leadership has advanced a hydrogen network that is not duplicated anywhere in the United States and is unique in the world for its focus on providing a retail fueling experience. In addition, the advancements have identified many lessons learned for hydrogen infrastructure development, deployment, and operation. Other interested states and countries are using California's experience as a model case, making success in California paramount to enabling market acceleration and uptake in the United States. The technical research capability of the national laboratories can be used to assist California in decisions and evaluations, as well as to verify solutions to problems impacting the industry. Because these challenges cannot be addressed by one agency or one laboratory, a hydrogen research consortium has been organized to combine and collaborate. Consortium includes NREL, the Energy Commission, CARB, GO-Biz, and SCAQMD. The collaboration aims to:

- Ensure that data are available to evaluate projects and inform decision makers
- Independently verify and validate component solutions
- Provide experimental results for future hydrogen infrastructure
- Increase the availability of technical experts for quick-need issues for California hydrogen infrastructure development, deployment, operation, and technology advances.

The proposed tasks include data collection from operational stations, component failure fix verification (i.e. nozzle freeze lock), new fueling methods for medium and heavy duty applications, and ensuring hydrogen quality is maintained. U.S. leadership for hydrogen technologies is rooted in California, a location for implementing many H2@Scale pathways such as reducing curtailment and stranded resources, reducing petroleum use and emissions, and developing and creating jobs.

2. The services shall be performed at NREL's office, 15013 Denver West Parkway, Golden, CO 80401. Some services may be performed at other national labs or at hydrogen refueling stations in California.
3. The services shall be provided during the term of this Agreement, which shall start no later than October 1, 2018.

EXHIBIT A
SCOPE OF WORK

4. The Project Representatives during the term of this Agreement will be:

| | |
|---|---|
| California Energy Commission | Alliance for Sustainable Energy, LLC |
| Name: Jane Berner, Contract Manager | Name: Jennifer Kurtz, Project Director |
| Address: 1516 9th Street, MS 6, Sacramento, CA 95814-5512 | Address: 15013 Denver West Parkway, Golden, CO 80401 |
| Phone: 916-651-9077 | Phone: 303-275-4061 |
| Fax: 916-654-4676 | Fax: 303-630-2403 |
| Email: Jane.Berner@energy.ca.gov | Email: Jennifer.Kurtz@nrel.gov |
| South Coast Air Quality Management District (SCAQMD) | California Governor's Office of Business and Economic Development (GO-Biz) |
| Name: Naveen Berry | Name: Tyson Eckerle |
| Address: 21865 Copley Drive Diamond Bar, CA 91765 | Address: 1325 J Street, Suite 1800, Sacramento, CA 95814 |
| Phone: 909-396-2363 | Phone: 916-322-0563 |
| Email: NBerry@aqmd.gov | Email: Tyson.Eckerle@gov.ca.gov |

Please direct all administrative inquiries to:

| | |
|---|---|
| California Energy Commission | Alliance for Sustainable Energy, LLC |
| Section/Unit: Contracts, Grants, and Loans | Section/Unit: Contracts |
| Attention: Kevyn Piper, Contract Officer | Attention: Lauren Klun |
| Address: 1516 9th Street, MS 18, Sacramento, CA 95814-5512 | Address: 15013 Denver West Parkway Golden, CO 80401 |
| Phone: 916-654-4845 | Phone: 303-275-4410 |
| Fax: 916-654-4423 | Fax: 303-275-3040 |
| Email: Kevyn.Piper@energy.ca.gov | Email: Lauren.Klun@nrel.gov |

For the Department of Energy related inquiries:

| | |
|---|---|
| California Energy Commission | Department of Energy |
| Attention: Jean Baronas, Hydrogen Unit Supervisor | Attention: Sunita Satyapal, Program Manager |
| Address: 1516 9th Street, MS 6, Sacramento, CA 95814-5512 | Address: 1000 Independence Avenue, SW Washington, DC 20585 |
| Phone: 916-654-4526 | Phone: 202-586-2336 |
| Fax: 916-654-4676 | Fax: 202-586-2373 |
| Email: Jean.Baronas@energy.ca.gov | Email: Sunita.Satyapal@ee.doe.gov |

The parties may change their Project Representative upon providing ten (10) days written notice to the other party.

EXHIBIT A
SCOPE OF WORK

5. Detailed description of work to be performed and duties of all parties shall be provided in accordance with this Exhibit.

BACKGROUND AND GOALS

Many stakeholders are working on hydrogen and fuel cell products, markets, requirements, mandates, and policies. California has been leading the way for hydrogen infrastructure and fuel cell electric vehicle deployment. This leadership has advanced a hydrogen network that is not duplicated anywhere in the United States and is unique in the world for its focus on providing a retail fueling experience. In addition, the advancements have identified many lessons learned for hydrogen infrastructure development, deployment, and operation. Other interested states and countries are using California's experience as a model case, making success in California paramount to enabling market acceleration and uptake in the United States. The technical research capability of the national laboratories can be used to assist California in decisions and evaluations, as well as to verify solutions to problems impacting the industry. Because these challenges cannot be addressed by one agency or one laboratory, a hydrogen research consortium has been organized to combine and collaborate. The collaboration aims to:

- Ensure that data are available to evaluate projects and inform decision makers
- Independently verify and validate component solutions
- Provide experimental results for future hydrogen infrastructure
- Increase the availability of technical experts for quick-need issues for California hydrogen infrastructure development, deployment, operation, and technology advances.

The proposed tasks include data collection from operational stations, component failure fix verification (i.e. nozzle freeze lock), new fueling methods for medium and heavy duty applications, and ensuring hydrogen quality is maintained. U.S. leadership for hydrogen technologies is rooted in California, a location for implementing many Hydrogen at Scale (H2@Scale) pathways such as reducing curtailment and stranded resources, reducing petroleum use and emissions, and developing and creating jobs.

The Energy Commission responded to the National Renewable Energy Laboratory (NREL)'s H2@Scale Cooperative Research and Development Agreement (CRADA) call for projects in September 2017. The Energy Commission partnered with the California Air Resources Board (CARB), South Coast Air Quality Management District (SCAQMD), and the Governor's Office of Business and Economic Development (GO-Biz), to submit a proposal to form the California Hydrogen Infrastructure Research Consortium (Consortium). The participation of CARB is managed under a separate agreement (FIA-17-01854) and is funded at the same level (\$100,000) as the other participants.

The Energy Commission, CARB, SCAQMD, GO-Biz have identified a need to leverage national laboratory research capabilities and staff to support their hydrogen efforts. This Consortium identified the tasks summarized in the following table based on top research needs and priorities for the California agency partners. The objective of this set of tasks is to address the near-term challenges for California infrastructure development, deployment, and operation. The Consortium will use these tasks as the first step in a strategic partnership, balancing near-term research needs with accelerating earlier-stage research into the market.

EXHIBIT A
SCOPE OF WORK

The benefits of this consortium begin with coordinated research efforts that support the DOE's and California energy goals and requirements. All parties in the consortium will share lessons learned with other states to inform implementation efforts outside of California. Each of these project tasks supports shifting the hydrogen infrastructure progress from a government push into a market pull. By checking-off near-term research needs, the infrastructure stakeholders can advance the station technology and operation to meet the next waves of vehicle demand and local sourcing for increased renewable hydrogen.

| Task | Task Name | Description | Duration |
|-------------|-------------------------------|--|-----------------|
| 1 | Data Collection & Analysis | Perform analysis and aggregation of station performance, operation, and maintenance data. | 12 months |
| 2 | Medium-/Heavy-Duty Fueling | Perform analysis and reporting of retail and experimental fueling data to inform fueling-method decision makers and fueling system design. | 12 months |
| 3 | H2 Contaminant Detector | Complete verification of in-line hydrogen quality detectors prior to validation at retail hydrogen stations. | 24 months |
| 4 | Nozzle Freeze-Lock Evaluation | Create an environmentally controlled test setup for identifying conditions leading to nozzle freeze-lock and for verifying solutions. This task will be implemented upon industry budget and DOE approval to begin work. | 6 months |
| 5 | CA Hydrogen Integration | Identify the top priorities for data share and experimental scenarios to integrate hydrogen into California's energy management strategies. | 12 months |
| 6 | Technical Assistance | National laboratory technical experts will be available for California infrastructure development, deployment, and operation. | 12 months |

EXHIBIT A
SCOPE OF WORK

WORK TO BE PERFORMED

The Contractor shall prepare the Hydrogen Research Consortium Project Management Plan (Project Management Plan) for Tasks 1 through 6 and deliver it to the Consortium members at the beginning of the agreement and update the Project Management Plan quarterly. The Energy Commission and other members of the Consortium will provide input on research priorities and approve the Project Management Plan. The Project Management Plan shall contain: budget, roles, milestones, sub-tasks, and reporting requirements. The Energy Commission shall approve the allocation of its Energy Commission share of \$100,000 for tasks.

Work may involve the Contractor installing and monitoring of retrofits at hydrogen refueling stations in California.

Task 1: Data Collection & Analysis

The goal of this task is for the Contractor to perform analysis and aggregation of station performance, operation, and maintenance data as defined in the Project Management Plan.

Contractor's Task Deliverables:

- Summarize the data collection and analysis tasks performed in each Quarterly Progress Report
- Work product as defined in the Project Management Plan
- Updated Project Management Plan

The Energy Commission will continue to provide station operation data according to NREL's Fuel Cell and Hydrogen Technology Validation program, MOU-15-404.

Task 2: Medium-/Heavy-Duty Fueling

The goal of this task is for the Contractor to perform analysis and reporting of retail and experimental fueling data to inform fueling-method decision makers and fueling system design as defined in the Project Management Plan.

Contractor's Task Deliverables:

- Summarize the progress on analysis and reporting of retail and experimental fueling data in each Quarterly Progress Report.
- Work product as defined in the Project Management Plan
- Updated Project Management Plan

Task 3: H2 Contaminant Detector

The goal of this task is for the Contractor to complete verification of in-line hydrogen quality detectors prior to validation at retail hydrogen stations as defined in the Project Management Plan.

Contractor's Task Deliverables:

- Summarize the progress on the contaminant detector study in each Quarterly Progress

EXHIBIT A SCOPE OF WORK

Report.

- Work product as defined in the Project Management Plan
- Updated Project Management Plan

Task 4: Nozzle Freeze-Lock Evaluation

The goal of this task is to create an environmentally controlled test setup for identifying conditions leading to nozzle freeze-lock and for verifying solutions as defined in the Project Management Plan. This task will be implemented upon industry budget and DOE approval to begin work.

Contractor's Task Deliverables:

- Summarize the progress on the creation of an environmentally controlled test setup for identifying conditions leading to nozzle freeze-lock and for verifying solutions
- Work product as defined in the Project Management Plan
- Updated Project Management Plan

Task 5: CA Hydrogen Integration

The goal of this task is for the Contractor to identify the top priorities for data share and experimental scenarios to integrate hydrogen into California's energy management strategies as defined in the Project Management Plan.

Contractor's Task Deliverables:

- Summarize the integration activities performed in each Quarterly Progress Report.
- Work product as defined in the Project Management Plan
- Updated Project Management Plan

Task 6: Technical Assistance

The goal of this task is for the Contractor to leverage national laboratory technical experts to evaluate questions or issues as they arise as related to California hydrogen infrastructure development, deployment, and operation as defined in the Project Management Plan.

Contractor's Task Deliverables:

- Summarize the technical assistance activities conducted in each Quarterly Progress Report
- Work product as defined in the Project Management Plan
- Updated Project Management Plan

Task 7: Draft and Final Project Report

7.1 Prepare a draft project report that includes the results of the tasks listed above. The report shall include the following narrative sections:

- A brief introduction section including a statement of purpose, the scope of the project, and a description of the approach and techniques used during the project.

EXHIBIT A SCOPE OF WORK

- A list of the task deliverables previously submitted as outlined in the Schedule of Deliverable Due Dates.
- Any additional information that is deemed appropriate by the Commission Agreement Manager and Contractor's Project Director.

7.2 Submit a copy of the draft project report to the Commission Agreement Manager, SCAQMD, and GO-Biz for review and comment.

7.3 Prepare a final project report that addresses, to the extent feasible, comments made by the Commission Agreement Manager, SCAQMD, and GO-Biz on the draft project report. Submit one (1) reproducible master and two (2) copies of the final project report to the Commission Agreement Manager, SCAQMD, and GO-Biz for review and acceptance.

Contractor's Task Deliverables:

- Draft Project Report
- Final Project Report

SCCHEDULE OF DELIVERABLES DUE DATES

| Task | Deliverables | Due Date |
|------------|--|-----------------------------------|
| | Initial Project Management Plan | 3 months from the effective date |
| | | |
| 1.0 | Data Collection & Analysis | |
| | <ul style="list-style-type: none"> • Summarize the data collection and analysis tasks performed in each Quarterly Progress Report • Work product as defined in the Project Management Plan | 12 months from the effective date |
| | <ul style="list-style-type: none"> • Updated Project Management Plan | Quarterly |
| | | |
| 2.0 | Medium-/Heavy-Duty Fueling | |
| | <ul style="list-style-type: none"> • Summarize the progress on analysis and reporting of retail and experimental fueling data in each Quarterly Progress Report • Work product as defined in the Project Management Plan | 12 months from the effective date |
| | <ul style="list-style-type: none"> • Updated Project Management Plan | Quarterly |
| | | |
| 3.0 | H2 Contaminant Detector | |

EXHIBIT A
SCOPE OF WORK

| | | |
|------------|---|-----------------------------------|
| | <ul style="list-style-type: none"> Summarize the progress on the contaminant detector study in each Quarterly Progress Report. Work product as defined in the Project Management Plan | 24 months from the effective date |
| | Updated Project Management Plan | Quarterly |
| 4.0 | Nozzle Freeze-Lock Evaluation | |
| | <ul style="list-style-type: none"> Summarize the progress on the creation of an environmentally controlled test setup for identifying conditions leading to nozzle freeze-lock and for verifying solutions Work product as defined in the Project Management Plan | 6 months from the effective date |
| | Updated Project Management Plan | Quarterly |
| 5.0 | CA Hydrogen Integration | |
| | <ul style="list-style-type: none"> Summarize the integration activities performed in each Quarterly Progress Report. Work product as defined in the Project Management Plan | 12 months from the effective date |
| | Updated Project Management Plan | Quarterly |
| 6.0 | Technical Assistance | |
| | <ul style="list-style-type: none"> Summarize the technical assistance activities conducted in each Quarterly Progress Report Work product as defined in the Project Management Plan | 12 months from the effective date |
| | Updated Project Management Plan | Quarterly |
| 7.0 | Draft and Final Project Report | |
| | Draft Project Report | December 31, 2020 |
| | Final Project Report | January 31, 2021 |

EXHIBIT A SCOPE OF WORK

BUDGET DETAIL

| Costs | NREL Shared Resources | SCAQMD Funds In | CEC Funds In | GO-Biz Shared Resources In-Kind | Totals |
|--------|-----------------------------|--------------------|-----------------|---------------------------------------|---------------|
| Year 1 | \$ 270,000.00 | \$ 100,000.00 | \$ 100,000.00 | \$ 20,000.00 | \$ 490,000.00 |
| Year 2 | \$ 270,000.00 | \$ 0.00 | \$ 0.00 | \$ 00.00 | \$ 270,000.00 |
| TOTALS | \$ 540,000.00 | \$ 100,000.00 | \$ 100,000.00 | \$ 20,000.00 | \$ 760,000.00 |

- a. The Energy Commission is only funding four of the tasks defined in Exhibit A, with other Consortium members funding the remaining tasks. The Consortium is also leveraging match funding provided by U.S. DOE. The CARB funds in contribution is \$100,000 in a separate agreement.
- b. The Energy Commission, along with other Consortium members, is providing funding towards the Task 1: Data Collection & Analysis, Task 3: H2 Contaminant Detector, Task 5: CA Hydrogen Integration, and Task 6: Technical Assistance tasks. These are the tasks defined in the Exhibit A.
- c. The Energy Commission may fund Task 2: Medium-/Heavy-Duty Fueling and Task 4: Nozzle Freeze-Lock Evaluation by redistributing allocation of funds in the Contractor's Project Management Plan, which the Energy Commission will approve.
- d. Contractor will invoice the Energy Commission one lump-sum invoice advance payment after agreement execution.

Each deliverable/report shall include the following statement:

“If a Participant to the CRADA grants a license or assignment to a third party in Intellectual Property derived from the work performed under this CRADA, the third party shall agree to indemnify the Government, Contractor, and Participant for all damages, costs, and expenses, including attorneys’ fees, arising from personal injury or property damage occurring as a result of the making, using, or selling of a product, process, or service by or on behalf of such third party, its assignees, or licensees, provided, however, such third parties shall not be required to indemnify the Government, Contractor or Participant for any negligent acts or omissions made by the Government, Contractor or Participant respectively.”

Protected CRADA Information:

It is anticipated that all reports and deliverables generated under this Agreement are public and will not be considered Protected CRADA Information. If the CRADA Participants determine that a report or a deliverable will contain confidential Protected CRADA Information, before delivering Protected CRADA Information to any Participant, the Contractor or other Party will ensure that the report or deliverable is properly granted confidential designation under the Freedom of Information Act (5 USC 552(b)(4)), Title 20 California Code of Regulations 2505 and the California Public Records Act (California Government Code Section 6254 et. seq.).

Proprietary Information:

It is anticipated that third-party Proprietary Information (developed at private expense outside of this Agreement) will not be delivered to any of the Participants. However, if the CRADA Participants determine that third-party Proprietary Information needs to be delivered to any of the Participants, the Contractor or other Party will ensure that the Proprietary Information is properly granted confidential designation under the Freedom of Information Act (5 USC 552 (b)(4)), Title 20 California Code of Regulations 2505 and the California Public Records Act (California Government Code Section 6254 et. seq.).

STATE OF CALIFORNIA

**STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION**

RESOLUTION - RE: ALLIANCE FOR SUSTAINABLE ENERGY, LLC

RESOLVED, that the State Energy Resources Conservation and Development Commission (Energy Commission) adopts the staff CEQA findings contained in the Agreement or Amendment Request Form (as applicable); and

RESOLVED, that the Energy Commission approves Agreement 600-17-007 with the Alliance for Sustainable Energy, LLC, Manager and Operator of the National Renewable Energy Laboratory in the amount of \$100,000 to provide technical research related to hydrogen infrastructure, as well as to verify solutions to problems impacting the hydrogen industry. This agreement leverages \$760,000 in federal and other funding; and

FURTHER BE IT RESOLVED, that the Executive Director or his/her designee shall execute the same on behalf of the Energy Commission.

CERTIFICATION

The undersigned Secretariat to the Commission 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 California Energy Commission held on June 13, 2018.

AYE: [List of Commissioners]

NAY: [List of Commissioners]

ABSENT: [List of Commissioners]

ABSTAIN: [List of Commissioners]

Cody Goldthrite,
Secretariat