**Attachment 1**

**Exhibit A**

**SCOPE OF WORK**

**TECHNICAL TASK LIST**

| **Task #** | **CPR** | **Task Name**  |
| --- | --- | --- |
| 1 |  | Administration |
| 2 |  | Electric Vehicle Infrastructure Training Program (EVITP) Certification***for Charging Infrastructure Projects Only*** |
| 2 |  | Hydrogen Refueling Safety Plan ***for Hydrogen Refueling Station Projects Only*** |
| *3* |  | *<Insert Task Name>* |
| *<Etc.>* |  | *<Insert Task Name>* |
| *X<Fifth to Last Task>* |  | Workforce Plan |
| *X<Fourth to Last Task>* |  | Operations and Reliability |
| *X<Third to Last Task>* |  | Semi-Annual Electric Vehicle Charger Inventory Reports |
| *X<Second to Last Task>* |  | Data Collection and Analysis |
| *<Last Task>* |  | Project Fact Sheet |

**KEY NAME LIST**

*<Insert the Task numbers and the Key names for each Task in your Project. Include Key names only if the value of the project would significantly change without those personnel, subcontractors, or partners. Add additional lines as needed. Alternatively, you may delete this table if there are no key names.>*

| **Task #** | **Key Personnel** | **Key Subcontractor(s)** | **Key Partner(s)** |
| --- | --- | --- | --- |
| 1 | <Name> | <Name> | <Name> |
| 2 | <Name> | <Name> | <Name> |
| 3 | <Name> | <Name> | <Name> |
| *<Etc.>* | <Name> | <Name> | <Name> |

**GLOSSARY**

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

| **Term/ Acronym** | **Definition** |
| --- | --- |
| AC Charging | “AC charging” means a charger that operates on a circuit greater than 200 volts and transfers alternating-current (AC) electricity to a device in an EV that converts alternating current to direct current to charge an EV battery.  |
| ADA | Americans with Disabilities Act |
| API | Application programming interface (API) is a type of software interface that offers services to other pieces of software. An API allows two or more computer programs to communicate with each other. |
| CAM | Commission Agreement Manager |
| CAO | Commission Agreement Officer |
| CEC | California Energy Commission |
| Charge Attempt | Any instance of an EV driver taking action to initiate a charging session by taking one or all of the following steps in any order: 1) attaching the connector to the EV appropriately, or 2) attempting to authorize a charging session by use of radio frequency identification (RFID) technology, credit card, charging network provider smartphone application (app), screen input, or by calling the charging network provider’s customer service number. |
| Charger | A device with one or more charging ports and connectors for charging electric vehicles. Also referred to as Electric Vehicle Supply Equipment (EVSE). This definition excludes any charger used solely for private use at a single-family residence or a multifamily dwelling with four or fewer dwelling units. |
| Charging Network | A collection of chargers located on one or more property (ies) connected via digital communications to manage the facilitation of payment, the facilitation of electrical charging, and any related data requests. |
| Charging Network Provider | The entity that operates the digital communication network that remotely manages the chargers. Charging network providers may also serve as charging station operators and/or manufacture chargers. |
| Charging Port | The system within a charger that charges one electric vehicle. A charging port may have multiple connectors, but it can provide power to charge only one electric vehicle through one connector at a time. |
| Charging Session | The period after a charge attempt during which the electric vehicle is allowed to request energy. Charging sessions can be terminated by the customer, the electric vehicle, the charger, the charging station operator, or the charging network provider. |
| Charging Station | The area in the immediate vicinity of one or more chargers that includes the chargers, supporting equipment, parking areas adjacent to the chargers, and lanes for vehicle ingress and egress. A charging station could comprise only part of the property on which it is located. |
| Charging Station Management System | A system that may be used to operate a charger, to authorize use of the charger, or to record or report charger data, such as by using OCPP. |
| Charging Station Operator | The entity that owns the chargers, supporting equipment and facilities at one or more charging stations. Although this entity may delegate responsibility for certain aspects of charging station operation and maintenance to subcontractors, this entity retains responsibility for operation and maintenance of chargers, supporting equipment and facilities. In some cases, the charging station operator and the charging network provider are the same entity. |
| Connector | The device that attaches an EV to a charging port in order to transfer electricity. |
| Corrective Maintenance | Maintenance that is carried out after failure detection and is aimed at restoring an asset to a condition in which it can perform its intended function. |
| CPR | Critical Project Review |
| CTP | Clean Transportation Program |
| DCFC | A direct current fast charger (DCFC) is a charger that enables rapid charging by delivering direct current electricity directly to an EV's battery |
| Depot | A type of “home base” behind-the-fence location where a vehicle is typically kept when not in use (usually parked on a nightly basis) |
| Downtime  | Downtime is any period of time that a charger or dispensing equipment is not operational. |
| EV | An electric vehicle (EV) is a vehicle that is either partially or fully powered on electric power received from an external power source. |
| EVSE | Electric vehicle supply equipment (EVSE) is also referred to as a charger as defined. |
| Excluded Downtime | Downtime that is caused by events pursuant to Task <Third to Last>.4. |
| Failed Charging Session | Following a charge attempt, the criteria for a successful charging session were not met. |
| FCEV | A fuel cell electric vehicle (FCEV) is a vehicle that uses an electric motor for propulsion, much like an EV, but powers the electric motor using hydrogen fuel cells rather than an onboard battery. |
| FTD | Fuels and Transportation Division |
| Hardware | The machines, wiring, and other physical components of an electronic system including onboard computers and controllers. |
| HSP | Hydrogen Safety Panel |
| Inoperative State | The charger or charging port is not operational. |
| Installed | Attached or placed at a location and available for use for a charging session. The date a charger is installed is the date it is first available for use for a charging session. |
| Interoperability | Successful communication between the software controlling charging on the EV and the software controlling the charger. Interoperability failures are communication failures between the EV and charger that occur while the software of each device is operating as designed. |
| Maintenance | Any instance in which preventive or corrective maintenance is carried out on equipment. |
| NREL | National Renewable Energy Laboratory |
| Networked | A charger can receive or send commands or messages remotely from or to a charging network provider or is otherwise connected to a central management system, such as by using OCPP 2.0.1, for the purposes of charger management and data reporting. |
| OCPP | Open Charge Point Protocol (OCPP) is an open-source communication protocol that specifies communication between chargers and the charging networks that remotely manage the chargers. |
| Operational | A charging port is considered operational or "up" when its hardware and software are both online and available for use, or in use, and the charging port successfully dispenses electricity as expected. |
| Operative | A state indicating the charger is operational and available to charge or currently charging. |
| Operative State | A state in which the charger is operational and available to charge or currently charging.  |
| PNNL | Pacific Northwest National Laboratory |
| Preventive Maintenance | Maintenance that is regularly and routinely performed on physical assets to reduce the chances of equipment failure and unplanned machine downtime. |
| Private | Charging ports located at parking space(s) that are privately owned and operated, often dedicated to a specific driver or vehicle (for example, a charging port installed in a garage of a single-family home). |
| Public | Charging ports located at parking space(s) designated by the property owner or lessee to be available to and accessible by the public. |
| Recipient | An applicant awarded a grant under a CEC solicitation |
| Shared Private | Charging ports located at parking space(s) designated by a property owner or lessee to be available to, and accessible by, employees, tenants, visitors, and residents. Examples include workplaces and shared parking at multifamily residences. |
| Software | A set of instructions, data or programs used to operate computers and execute specific tasks. |
| Successful Charging Session | Following a charge attempt, a customer’s EV battery is charged to the state of charge the customer desires and is disconnected manually by the customer or by the EV’s onboard software system terminating the charging session, without an additional charge attempt. |
| Uptime | The time that a charger is installed during a reporting period excluding downtime pursuant to Task <Fourth to Last>.4.  |

*<Applicants* ***DO NOT*** *need to complete items listed under “Background.” This will be completed by the CAM during agreement development if proposal is recommended for funding.>*

**Background**

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

On [***insert date***], the CEC released a Grant Funding Opportunity (GFO) entitled, “Charging and Refueling Infrastructure for Transport in CALifornia Provided Along Targeted Highway Segments (CRITICAL PATHS).” This competitive grant solicitation was to support the development of publicly available charging and/or hydrogen refueling stations for medium- and heavy-duty (MDHD) zero-emission vehicles (ZEVs) along designated corridors, to help create an infrastructure network that supports the state’s transition to zero-emission transportation. In response to GFO-23-XXX, the Recipient submitted application #XX which was proposed for funding in the CEC’s Notice of Proposed Awards on [***insert date***]. GFO-23-XXX 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 CEC’s Award, CEC’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:**

*<see instructions>*

**Goals of the Agreement:**

The goal of this Agreement is to… <see instructions>

**Objectives of the Agreement:**

The objectives of this Agreement are to… <see instructions>

**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 with the CAM, 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
* “Surviving” Agreement provisions
* Final invoicing and release of retention
* Prepare a schedule for completing the closeout activities for this Agreement.

**Products:**

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

Task 1.4 Monthly Calls

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

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

**The CAM shall:**

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

**The Recipient shall:**

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

**Product:**

* Email to CAM concurring with call summary notes.

Task 1.5 Quarterly Progress Reports

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

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

**The Recipient shall:**

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

**Product:**

* Quarterly Progress Reports

Task 1.6 Final Report

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

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

The Final Report shall be a public document and is limited to 25-pages. If the Recipient has obtained confidential status from the CEC and will be preparing a confidential version of the Final Report as well, the Recipient shall perform the following activities for both the public and confidential versions of the Final Report.

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

The Recipient shall:

* Prepare an Outline of the Final Report, if requested by the CAM.
* Prepare a Final Report complying with ADA requirements and following the latest version of the Final Report guidelines which will be provided by the CAM. The CAM shall provide written comments on the Draft Final Report within fifteen (15) working days of receipt. The Final Report must be completed at least 60 days before the end of the Agreement Term.

**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.
* If requested by the CAM, submit a draft of each subaward required to conduct the work under this Agreement to the CAM for review.
* If requested by the CAM, submit a final copy of the executed subaward.
* If Recipient intends to add new subrecipients or change subrecipients, then the Recipient shall notify the CAM.

**Products:**

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

**TECHNICAL TASKS**

**TASK 2 ELECTRIC VEHICLE INFRASTRUCTURE TRAINING PROGRAM (EVITP) CERTIFICATION**
***for Charging Infrastructure Projects Only***

The goal of this task is to comply with Assembly Bill (AB) 841 certification requirements.

**The Recipient shall:**

* Submit an AB 841 Certification that certifies the project has complied with all AB 841 (2020) requirements specified in the Agreement Terms and Conditions or describes why the AB 841 requirements do not apply to the project. The certification shall be signed by Recipient’s authorized representative.
* Submit EVITP Certification Numbers of each Electric Vehicle Infrastructure Training Program certified electrician that installed electric vehicle charging infrastructure or equipment. EVITP Certification Numbers are not required to be submitted if AB 841 requirements do not apply to the project.

**Products:**

* AB 841 Certification
* EVITP Certification Numbers

**TASK 2 HYDROGEN REFUELING SAFETY PLAN
*for Hydrogen Refueling Station Projects Only***

The goal of this task is to develop a detailed hydrogen safety plan that the Recipient and any subrecipients or individuals involved in station construction, operation, and maintenance will follow throughout the project and as long as each station operates. The Recipient will collaborate with the Pacific Northwest National Laboratory (PNNL) Hydrogen Safety Panel (HSP) to ensure the plan is comprehensive and demonstrates a strong commitment to safety.

**The Recipient shall:**

* Submit the station design to the PNNL HSP for review.
* Submit a Written Notification of Completion of PNNL HSP design review to the CAM.
* Develop a Preliminary Hydrogen Safety Plan for PNNL HSP review.
* Submit the preliminary plan to the PNNL HSP for assessment.
* Receive the PNNL HSP’s assessment and provide a copy to the CAM.
* Discuss the PNNL HSP’s assessment with members of the PNNL HSP.
* Evaluate the PNNL HSP’s comments and determine how to address them in the final plan.
* Prepare a memo on how the PNNL HSP’s comments will be addressed and provide a copy to the CAM.
* Collaborate with the PNNL HSP and CAM to resolve any questions or issues pertaining to the Hydrogen Safety Plan.
* Prepare a Final Hydrogen Safety Plan.
* Submit the Final Hydrogen Safety Plan to the PNNL HSP.
* Submit a Written Notification of Submission of the Final Hydrogen Safety Plan to the PNNL HSP to the CAM.

**Products:**

* Written notification of completion of PNNL HSP design review.
* A copy of the PNNL HSP’s assessment of the Preliminary Hydrogen Safety Plan for each station
* Memo describing how the PNNL HSP’s comments will be addressed in the Final Hydrogen Safety Plan for each station
* Written notification of submission of the final Hydrogen Safety Plan to the PNNL HSP

**TASK 3** *<insert task name using ALL CAPS>*

The goal of this task is ... *<Complete the sentence with a brief description of the goal(s)*. *Please be brief,* *two to three sentences maximum*. *See instructions.>*

**The Recipient shall:**

* *<Insert verb in active tense ... complete the sentence.>*
* *<Insert verb in active tense ... complete the sentence.>*
* *<Etc. See instructions>*

**Products:**

*<Products incorporate the knowledge and understanding gained by performing the activities, and are* ***submitted to the CEC*** *for review, comment and approval. Products include, but are not limited to, written reports that describe methods, test plans, results of testing, analysis of data, conclusions, and recommendations for future study, workshop agendas and summaries, description and photographs of equipment/product developed, summaries of advisory group meetings, computer software with written instructions for data input and use of the software, if intended for public or CEC use, and production prototypes. For each product there must be a bullet under “The Recipient Shall:” explaining it in more detail.>*

* *<Insert 1st product (name only) and include draft and final versions as necessary>*
* *<Insert 2nd product (name only) and include draft and final versions as necessary>*
* *<Etc. See instructions>*

**<Add the appropriate number of tasks for the Agreement>**

**TASK XX <fifth to last task> WORKFORCE PLAN**

The goal of this task is to develop a Workforce Plan.

**The Recipient shall:**

* Develop a Workforce Plan that includes, but is not limited to:
	+ Outreach and engagement efforts aimed at job recruitment, job-placement strategies, and local hiring especially from those facing employment barriers and residents from disadvantaged and/or low-income communities and individuals whose income is below poverty.
	+ Recruitment of pre-apprentices from Division of Apprenticeship Standards (DAS) approved pre-apprenticeship programs.
	+ Number of direct and indirect jobs by the proposed project with calculations and assumptions.
	+ Support job quality by providing estimated total number of workers to be trained and/or hired; job classifications or titles; job classifications’ specific role(s) in the project; wage rates and benefits; share of jobs that are short-duration positions (less than 12 months) and long-term positions (12 months or more).
	+ Promote training and upward mobility including benefits to workers from disadvantaged and/or low-income communities, provide an estimate of the number of training hours during the project, and identify workforce training partnerships with local community-based organizations, workforce development boards, and high road training partnerships which can include State-approved Joint Apprenticeship Training Programs.
	+ How job training, placement and employment will lead to careers with living wages, health care, and other benefits.
	+ Experience respecting and implementing labor laws including workers right to organize.
* Provide a copy of the Workforce Plan to the CAM.

**Products:**

* Workforce Plan

**TASK XX <fourth to last task>** **OPERATIONS AND RELIABILITY**

**Task XX.1 Operations**

**The Recipient shall:**

* Operate the installed charging ports during the term of this agreement.
* Ensure that the charging port uptime for each charging port installed in the project is at least 97 percent of each year for six years after the beginning of operation.
* Provide a plan explaining how hydrogen stations will maximize uptime with a goal of 95% uptime.

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, this requirement to ensure operationality for six years after the beginning of operation 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:**

* Hydrogen stations: A plan explaining how uptime will be maximized, with a goal of 95% uptime

**Task XX.2 Recordkeeping**

The goal of this task is to collect, maintain, and transmit records of charging port operation and reliability to the CEC. The Recipient shall collect and retain the maintenance records specified in this section. The Recipient shall retain the services of a charging network provider that meets the criteria in 1. through 4. to record, retain, and transmit the remote monitoring data specified in this section.

1. The charging network provider must have an API of the CEC’s choosing to permit the charging network provider to transfer the data required in this section Article directly to the CEC or its designee within three days of the record’s generation.
2. The charging network provider must have Subset Certification of the Charging Station Management System in the Open Charge Alliance OCPP Certification Program for OCPP version 2.0.1, published May 24, 2023, or a subsequent version of OCPP for Core, Advanced Security, and ISO 15118 Support functionalities.
3. The charging network provider’s central system must have connection to the chargers using OCPP version 2.0.1 or a subsequent version of OCPP. This does not preclude the additional use of other communication protocols.
4. The charging network provider and chargers must transmit the following protocol data units between the Central Management System and the charger(s) as specified in OCPP version 2.0.1 or a subsequent version of OCPP:
5. HeartbeatRequest shall be transmitted to the Central Management System by the charger on a set interval.
6. HeartbeatResponse shall be transmitted to the charger by the Central Management System in response to any received HeartbeatResponse.
7. StatusNotificationRequest shall be transmitted by the charger to the Central Management System any time the charger or an associated charging port’s operative status changes.
8. BootNotificationRequest shall be transmitted by the charger to the Central Management System any time the charger is powered on.
9. BootNotificationResponse shall be transmitted by the Central Management System to the charger in response to any received BootNotificationRequest.

**The Recipient Shall:**

* Ensure the charging network provider collects and retains the Remote Monitoring data below from each charging port installed and operated as part of this Agreement.
* Ensure the charging network provider automatically transmits the Remote Monitoring data below to the CEC, via API, within 3 days of the Remote Monitoring data’s generation.
* Ensure the charging network provider retains the Remote Monitoring data below for 2 years from the date of each record’s generation. Provide records to the CEC within 10 business days of request.
1. Provide digital records in a comma separated values (CSV) file unless another file format is approved by the CEC for the request.
2. Provide a clear and understandable data dictionary that describes each data element and any associated units with all digital records.
* Collect and retain the maintenance records specified below for each charging port installed and operated as part of this agreement for 6 years from the date the charging port begins operation. Provide records to the CEC within 10 business days of request.

**Remote Monitoring Data**

1. All instances of the following Protocol Data Units (PDUs), specified in OCPP 2.0.1, that are transmitted between the charger and the central system.
2. HeartbeatResponse
3. StatusNotificationRequest
4. BootNotificationRequest
5. The total number of charge attempts for the reporting period.
6. The total number of successful charging sessions for the reporting period.
7. The total number of failed charging sessions for the reporting period.
8. The percentage of successful charging sessions for the reporting period relative to the total number of charge attempts for the reporting period.

 **Maintenance Records**

1. Reports of inoperative charging ports or charging port failures resulting in inability to charge, such as a customer complaint, internal diagnostics, or inspection.
2. Records of any maintenance conducted on charging ports installed and operated as part of the agreement. Records should specify the following:
	1. Date and time of the maintenance event
	2. Whether maintenance was corrective or preventive in nature
	3. Whether and for how long the charging port was in an inoperative state prior to maintenance.
	4. Whether the charging port was in an operative state following maintenance

**Products:**

* Remote Monitoring Records
* Maintenance Records
* Data Dictionary

**Task XX.3 Maintenance Requirements**

The goal of this task is to increase reliability through timely and effective preventive and corrective maintenance. The Recipient shall conduct maintenance on each charger installed and operated as part of the Agreement as specified in this section.

**The Recipient Shall:**

* Conduct preventive maintenance, as specified by the charger manufacturer, on the charger hardware by a certified technician annually. The time interval between consecutive preventive maintenance visits to any charger shall be no more than 13 months.
* Complete corrective maintenance within 5 business days of the beginning of a time when the charger is inoperative or exhibiting failures that result in an inability to charge.
* Report on preventive and corrective maintenance in each semiannual reliability report described in Task XX.4.

**Products:**

* Maintenance section of semi-annual report described in Task XX.4

**Task XX.4 Reporting**

The goal of this task is to provide the CEC reports on charger reliability and maintenance.

**The Recipient shall:**

* Write and submit to the CEC semi-annual reports on charger reliability and maintenance. Each report shall include: A summary of charging port downtime, including total downtime and the number and frequency of downtime events, the minimum, median, mean, and maximum duration, and the causes of downtime events during the reporting period. Downtime shall be determined on a per charging port basis by summing the durations of all downtime events. The duration of a downtime event shall be the longest of the following periods: Downtimeevents include:
1. The time after the charger has transmitted a StatusNotificationRequest indicating that the charging port associated with that charger is in a “faulted” or “unavailable” state until a subsequent StatusNotificationRequest is transmitted by that charger indicating that the charging port has transitioned to an “available,” “occupied,” or “reserved” state. The timestamps in each StatusNotificationRequest shall be used to quantify downtime.
2. The time between a BootNotificationResponse transmitted by the Central Management System and the last HeartbeatResponse transmitted by the Central Management System prior to the BootNotificationResponse. The timestamps in the relevant BootNotificationResponse and HeartbeatResponse shall be used to quantify downtime.
3. The time between the earliest record that a charger is not capable of successfully dispensing electricity or otherwise not functioning as designed and the time it is available to deliver a charge. First record that a charger is not capable of successfully dispensing electricity or otherwise not functioning as designed includes, but is not limited to, consumer notification, internal diagnostics, or inspection, whichever is earliest.
* Write and submit to the CEC a summary of Excluded Downtime, including total excluded downtime and the number and frequency of excluded downtime events, the minimum, median, mean, and maximum duration, and the causes of excluded downtime events. ‘Excluded Downtime’ includes:
1. **Before Initial Installation:** Downtime before the charging port was initially installed.
2. **Grid Power Loss:** Downtime during which power supplied by a third-party provider is not supplied at levels required for minimum function of the charging port. This may include, but is not limited to, service outages due to utility equipment malfunction or public safety power shutoffs. This does not include power generation or storage equipment installed to serve the charger(s) exclusively. Documentation from power provider detailing outage is required to claim this as excluded downtime.
3. **Vehicle Fault:** Any failure to charge or failure to meet the EV charging customer’s expectation for power delivery due to the fault of the vehicle.
4. **Outage for Preventive Maintenance or Upgrade:** Downtime caused by any preventive maintenance or upgrade work that takes the charging port offline. This must be scheduled at least two weeks in advance of the charger being placed in an inoperative state. The maximum downtime that can be excluded for preventive maintenance or upgrade work is 24 hours for any 12-month period.
5. **Vandalism or Theft:** Downtime caused by any physical damage to the charger or station committed by a third party. This may include, but is not limited to, theft of charging cables, damage to connectors from mishandling, or damage to screens. A maximum of 5 days may be claimed as excluded downtime for each Vandalism or Theft event. A police report or similar third-party documentation is required to claim this as excluded time.
6. **Natural Disasters:** Downtime caused by any disruption of the charging port due to a natural event such as a flood, earthquake, or wildfire that causes great damage. Third party documentation such as news reporting must be provided along with a narrative of the direct impacts to the chargers(s) to claim this as excluded downtime.
7. **Communication Network Outages:** Downtime caused by loss of communication due to cellular or internet service provider system outages. A Communication Network Outage can be claimed as excluded downtime provided the chargers default to a free charge state during communication losses. A free charge state is when the charger is operational and dispenses energy free of charge to any consumer.
8. **Operating Hours:** Hours in which the charging port is in an operative state but that are outside of the identified hours of operation of the charging station.
* Write and submit to the CEC a summary and calculation of uptime. Each report shall include, for the 12 months preceding the report, the monthly uptime percentage of each charging port (Uptime) installed and operated as part of this agreement.  Charging port uptime shall be calculated as:

|  |
| --- |
| $$U=\frac{T-D+E}{T} \*100\%$$U = Charging Port UptimeT = 1. Q1-Q2 reporting period = 260,640 minutes, except for a leap year, which is 262,080 minutes.
2. Q3-Q4 reporting period = 264,960 minutes.

D = Total charging port downtime for the reporting period, in minutes.E = Total charging port excluded downtime in the reporting period, in minutes. |
|  |

* Write and submit to the CEC a summary of charge data, including:
1. Total number of charge attempts in the reporting period
2. Total number of successful charge attempts in the reporting period
3. Total number of failed charges in the reporting period
4. The percentage of successful charging sessions for the reporting period relative to the total number of charge attempts for the reporting period
5. A description of steps taken to reduce the number of failed charge attempts, and the success rate of those steps
6. The total number of maintenance dispatch events that occurred since the last report, the number of days to complete each maintenance event reported, and a narrative description of significant maintenance issues
7. Details of all excluded downtime and a narrative description of events that caused the excluded downtime.

**Products:**

* Semi-annual Report on Charger Reliability and Maintenance, submitted in a manner specified by the CEC.

**Task XX <third to last task> SEMI-ANNUAL ELECTRIC VEHICLE CHARGER INVENTORY REPORTS**

The goal of this task is to provide information on the number of chargers in the Recipient’s charging network in California, including both public and shared private, serving all vehicle sectors (light-, medium-, and heavy duty) excluding any charger used solely for private use at a single-family residence or a multifamily housing unit with four or fewer units.

The Recipient shall:

* Prepare an Electric Vehicle Charger Inventory Report that includes:
* For chargers serving light-duty electric vehicles:
* Number of public AC charging ports aggregated at the county level by charging network provider
* Number of shared private AC charging ports aggregated at the county level by charging network provider
* Number of public DC fast charging ports aggregated at the county level by charging network provider
* Number of shared private DC fast charging ports aggregated at the county level by charging network provider
* For chargers serving medium- and/or heavy-duty vehicles:
* Number of public AC charging ports aggregated at the county level by charging network provider
* Number of shared private AC charging ports aggregated at the county level by charging network provider
* Number of public DC fast charging ports aggregated at the county level by charging network provider
* Number of shared private DC fast charging ports aggregated at the county level by charging network provider
* Number of other publicly available charging ports at the county level by charging network provider
* Number of other depot charging ports by power output (less than 50 kilowatts (kW), between 50kW to 150kW,150kW to 350kW, 350kW and above) at the county level by charging network provider (if applicable)
* Submit the Electric Vehicle Charger Inventory Report to the CAM no later than 30 calendar days after the Agreement is executed and then each calendar half-year thereafter. Reports are due at the end of July and end of January.

**Recipient Product:**

* Electric Vehicle Charger Inventory Report

**TASK XX <second to last task> 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:**

* For all electric vehicle chargers and charging stations installed on or after January 1, 2024:
	+ Comply with recordkeeping and reporting standards as described in CEC’s regulations. These requirements are not applicable to those electric vehicle chargers and charging stations installed at residential real property containing four or fewer dwelling units.
	+ Comply with all industry best practices and charger technology capabilities that are demonstrated to increase reliability, as described in CEC’s regulations.
	+ Without limitation to other requirements in this grant agreement, Recipient shall comply with any other regulatory requirements, including but not limited to uptime requirements and operation and reliability requirements. Such regulatory requirements may, but will not necessarily, be enacted after execution of this grant agreement. Once regulations are final, they will apply to work under this grant agreement irrespective of when finalized. Any updates to regulations may also be applicable to work under this grant agreement.
	+ If the Recipient is an electric vehicle service provider or other third-party entity that is not the site host, the electric vehicle service provider or third-party entity shall provide a disclosure to the site host about the site host’s right to designate the service provider or third-party as the entity to report the data on behalf of the site host. The Recipient shall verify receipt by signing the disclosure.
* For all hydrogen refueling stations:
	+ Complete and submit the NREL Data Collection Tool for each hydrogen refueling station once the station becomes open retail and continue to do so every quarter until one year after the final station in the Recipient’s project becomes open retail.
	+ Perform and submit results of purity testing using hydrogen collected at the nozzle for each hose at each open retail hydrogen refueling station. Purity tests for each station in the Recipient’s project will be performed:
		- At the time the station becomes open retail (to meet the open retail definition)
		- Every six months after the station becomes open retail during the approved term of this agreement
		- 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.

* Identify the source of the hydrogen using the Renewable Hydrogen Report template.
* Comply with the Petroleum Industry Information Reporting Act (PIIRA) and complete CEC Form A15 on an annual basis for submission to the CEC’s PIIRA Data Collection Unit (https://a15.energy.ca.gov/).
* Once charging/refueling station becomes operational, submit to the CAM an Open Retail Attestation Form within 5 business days.
* Collect and provide the following data:
	+ Number, type, date, and location of chargers and/or hydrogen refueling stations installed.
	+ Nameplate capacity of the installed equipment, in kW for chargers and in kilograms per day (kg/day) for hydrogen.
	+ Number and type of outlets per charger and/or number of fueling positions per station.
	+ Location type, such as street, parking lot, hotel, restaurant or shopping center, existing retail gasoline station, etc.
	+ Total cost per charger and/or hydrogen refueling station, the subsidy from the CEC per charger and/or refueling station, federal subsidy per charger and/or refueling station, utility subsidy per charger and/or refueling station, and privately funded share per charge and/or refueling station.
* Identify and discuss the results of performance data measured and collected in the Workforce Plan.
* Collect and provide 12 months of throughput, usage, and operations data from the project including, but not limited to:
	+ The data requested in the NREL Data Collection
	+ Number of charging and/or refueling sessions
	+ Average charger and/or refueling station downtime
	+ Peak power delivered (kW)
	+ Duration of active charging, hourly
	+ Duration of charging sessions, hourly (e.g., vehicle parked but not actively charging)
	+ Average session duration
	+ Energy delivered (kWh)
	+ Average kWh or kg dispensed
	+ Types of vehicles using the charging equipment and/or hydrogen refueling station equipment
	+ Applicable price for charging, including but not limited to: electric utility tariff, EVSP service contract, or public charger price and/or applicable retail price for hydrogen fuel
	+ Payment method for public charging
	+ Energy delivered back to grid or facility if a bidirectional charging use case (kWh)
	+ Normal operating hours, up time, downtime, and explanations of variations
	+ Gallons of gasoline and/or diesel fuel displaced (with associated mileage information)
	+ Expected air emissions reduction, for example:
		- Non-methane hydrocarbons
		- Oxides of nitrogen
		- Particulate Matter
		- Formaldehyde
* Identify any current and planned use of renewable energy at the facility.
* Provide data on potential job creation, economic development, and increased state revenue as a result of expected future expansion.
* Compare any project performance and expectations provided in the proposal to CEC with actual project performance and accomplishments.
* Collect and provide 12 months of throughput, usage, and operations data from the project including, but not limited to, for each session:

|  |  |  |
| --- | --- | --- |
| **Category** | **Field** | **Desired Data Type** |
| Sites | Site ID | Hash key |
| Sites | Site Name | Varchar |
| Sites | Site Type | Varchar |
| Sites | EVSP | Varchar |
| Sites | Street Address | Varchar |
| Sites | City | Varchar |
| Sites | State | Varchar |
| Sites | Zip | Varchar |
| Sites | Latitude | Decimal |
| Sites | Longitude | Decimal |
| Sites | Number of EVSEs | Varchar |
| Sites | Number of Ports | Varchar |
| EVSE | EVSE ID | Hash key |
| EVSE | EVSE Manufacturer | Varchar |
| EVSE | EVSE Model Number | Varchar |
| EVSE | EVSE Maximum kW | Integer |
| EVSE | EVSE Number of Ports | Integer |
| EVSE | EVSE Power Level | Varchar |
| Ports | Port ID | Hash key |
| Ports | Port Maximum kW | Integer |
| Ports | Connector Type | Varchar |
| Sessions | Session ID | Hash key |
| Sessions | Charge Duration | Varchar (HH:MM:SS) |
| Sessions | Charge Session Start Date | Date |
| Sessions | Charge Session Start Time | Time |
| Sessions | Charge Session End Date | Date |
| Sessions | Charge Session End Time | Time |
| Sessions | Disconnect Reason | String |
| Sessions | Connection Duration | Varchar (HH:MM:SS) |
| Sessions | Idle Duration | Varchar (HH:MM:SS) |
| Sessions | Energy Consumed | Decimal |
| Sessions | Charge Peak Demand | Decimal |
| Sessions | Charge Average Demand | Decimal |
| Sessions | Total Transacted Amount (Driver) | Currency |
| Sessions | Payment method | Character |
| Sessions | Driver ID | Hash key |
| Sessions | Vehicle Make, if known | Varchar |
| Sessions | Vehicle Model, if known | Varchar |
| Sessions | Vehicle Year, if known | Integer |
| Sessions | Vehicle Type, if known | Character |

* Provide a Data Collection and Information Analysis Report that lists and analyzes all the data and information described above.

**Products:**

* NREL Data Collection Tool, if applicable
* Initial, biannual, and as needed hydrogen purity test results, if applicable
* Open Retail Attestation Form
* Data Collection Information and Analysis Report
* Renewable Hydrogen Report

**TASK XX <last task>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