December 29, 2023

# GFO-23-601California’s National Electric Vehicle Infrastructure Formula Program Addendum 1

The purpose of this addendum is to notify potential applicants of changes that have been made to GFO-23-601.

The addendum includes revisions to the Application Manual and the Scope of Work (Attachment 1). Added language appears in **bold underline**, and deleted language appears in [~~strikethrough~~] and within square brackets.

## Application Manual

The following edits are made to the Solicitation’s Application Manual.

1. **Section I.A. Purpose of Solicitation** (page 4)

This is a competitive grant solicitation. The California Energy Commission (CEC) announces the availability of up to $40,500,000 in grant funds for projects that will strategically deploy high-powered direct current **(DC)** fast charger [~~(DCFC)~~] electric vehicle (EV) charging infrastructure and establish an interconnected network to facilitate data collection, access, and reliability.

1. **Section II.B. Project Requirements** (pages 12—13)Header of Table 3: Required Site(s)**\***

**\*The charging stations deployed at the required sites listed in Table 3 must be located within one mile, per the requirements of Section II.B.2 Project Location, of *both* freeways if the required site is a junction of two freeways.**

Please refer to the Department of Energy’s [Alternative Fuels Data Center](http://www.afdc.energy.gov/fuels/electricity_locations.html) (<http://www.afdc.energy.gov/fuels/electricity_locations.html>) and [PlugShare](http://www.plugshare.com) (<http://www.plugshare.com>) for up to date existing and planned DC **fast charger** [~~FC~~ ~~charging~~] station information. [California’s NEVI Funding Program Map](https://www.energy.ca.gov/programs-and-topics/programs/national-electric-vehicle-infrastructure-program-nevi/californias) (https://www.energy.ca.gov/programs-and-topics/programs/national-electric-vehicle-infrastructure-program-nevi/californias) displays DC fast charger sites (as of October 2023) along corridors.

1. **Section II.B.14. AB 2974 Small Business Goal** [**~~Requirements~~**] (page 20)

AB 2974 (Committee on Jobs, Economic Development, and the Economy, Chapter 600, Statutes of 2022) requires that California state [~~projects using~~] **agencies awarding** funds from the federal Infrastructure Investment and Jobs Act of 2021**, which includes NEVI, establish a 25% small business participation goal. Applicants are expected to achieve this 25% small business participation goal and explain their plan to achieve it in their Project Narrative addressing Project Budget and Finances as described in Section III.D.2.g.** [~~should spend at least 25% of the NEVI funds on small businesses. Caltrans is currently seeking an exemption to this requirement for equipment and materials. Applicants may assume this exemption for equipment and materials will be approved when preparing their applications. If this exemption is not approved, the CEC will issue an addendum amending this section’s language.~~]

[~~For this solicitation there is a requirement that at least 25% of the NEVI funding allocated to sub-awardees or vendors should be defined as a small business.~~]

1. **Section II.B.15. Data Submittals** (page 20)

Applications that result in proposed awards and executed agreements will be required to **perform recordkeeping and report on charger operations and reliability as specified in the solicitation Scope of Work (Attachment 1)** [~~submit various data at different intervals~~]. These **requirements** include quarterly**,** [~~and~~] annual**, and one-time** data submittal**s**, as well as real-time reporting of charger status and **charging session** [~~price~~] information through application programming interface **(API)** for third-party developers.

1. **Section II.B.16. Operation, Maintenance, and Uptime** (page 21)

Each charger shall meet the specific recordkeeping, maintenance, and reporting requirements detailed in the solicitation Scope of Work **(Attachment 1)**.

Charging port uptime must be calculated on a monthly basis for the previous twelve months and use the following equation:

**µ = ((525,600−(T\_outage−T\_excluded))/525,600) × 100**

**where:**

**µ = port uptime percentage**

**T\_outage = total minutes of outage in previous year**

**T\_excluded = total minutes of outage in previous year caused by the following reasons outside the charging station operator's control, provided that the charging station operator can demonstrate that the charging port would otherwise be operational: electric utility service interruptions, failure to charge or meet the EV charging customer's expectation for power delivery due to the fault of the vehicle, scheduled maintenance, vandalism, or natural disasters. Also excluded are hours outside of the identified hours of operation of the charging station.**

$[U\_{c}= \frac{T\_{c}-D\_{c}+E\_{c}}{T\_{c}}\*100\%$]

[~~U~~~~c~~ ~~= Charging Port Uptime~~

~~T~~~~c~~ ~~= 525,600 minutes~~

~~D~~~~c~~ ~~= Total charging port downtime for the reporting period, in minutes.~~

~~E~~~~c~~ ~~= Total charging port excluded downtime in the reporting period, in minutes.~~]

1. **Section II.B.20. Eligible Project Costs** (pages 23—24)

Costs incurred for the following are eligible for CEC reimbursement or as the Applicant’s match share, after an E-76 has been approved and the grant agreement has been formally executed:

* + Renewable distributed energy resources **capable of providing independent or supplemental power to the EV chargers. Eligible renewable distributed energy resources include solar photovoltaic and wind and if desired can be coupled with a battery energy storage system. Any of these systems must be interconnected to the charging system and must be separately metered from the site host's regular business meter**. [~~or energy storage equipment/systems capable of providing independent or supplemental power to the EV chargers~~]
	+ [~~Photovoltaic solar panels separately metered for EV charging~~]
* Networking licenses **for up to five (5) years of operations and which are purchased during the agreement term**
* Equipment warranties **for up to five (5) years of operations and which are purchased during the agreement term**
* Maintenance **provided during the agreement term for up to five (5) years of operation**, **or a** maintenance agreement [~~,~~] or a service level agreement **for up to five (5) years of operations and which is purchased during the agreement term**

The following project **costs and/or** types **ARE NOT** eligible for funding under this solicitation:

**…**

The following are not eligible for NEVI reimbursement but may be included as an Applicant’s match share.

* + Processes to comply with applicable legal requirements (e.g., permits from the local authority having jurisdiction (AHJ) and compliance with the Americans with Disabilities Act (ADA)), so **long as** costs claimed as match share for compliance with such requirements are incurred during the agreement term.
1. **Section III.D.2.g. Project Budget and Finances** (page 36)

Describe how the proposed project plans to meet **or exceed** California’s goal **of 25% small business participation** [~~that 25% of the NEVI funding be spent on contractors, equipment, and/or materials from small businesses~~] **per AB 2974 (Committee on Jobs, Economic Development, and the Economy, Chapter 600, Statutes of 2022)**.

1. **Section IV.E. Evaluation Criteria, Project Budget and Finances** (page 57)

Describes how the proposed project plans to meet **or exceed** California’s goal **of 25% small business participation** [~~that 25% of the NEVI funding be spent on contractors from small businesses~~] **per AB 2974 (Committee on Jobs, Economic Development, and the Economy, Chapter 600, Statutes of 2022)**.

1. **Section V.A. Definition of Key Words** (pages 60—64)

The following changes are made (key words not changed are not listed):

| **Word/Term** | **Definition** |
| --- | --- |
| **Application Programming Interface (API)** | **A type of software interface that offers service to other pieces of software. An API allows two or more computer programs to communicate with each other.** |
| **CCS** | **Combined Charging System** |
| **CEQA** | **California Environmental Quality Act** |
| Charger | **A device with one or more charging ports and connectors for charging EVs. Also referred to as electric vehicle supply equipment (EVSE).**[~~One component of the larger charging station which drivers will interact with. The charger is where the charging connectors are located and may include a display screen and the payment interface.~~] |
| **Charging Network** | **A collection of chargers located on one or more property(ies) that are 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 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.** |
| **Electric Vehicle Supply Equipment (EVSE)** | **A “charger” as defined.** |
| **FHWA** | **Federal Highway Administration** |
| **Hardware** | **The machines, wiring, and other physical components of an electronic system including onboard computers and controllers.** |
| **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.** |
| **kW** | **Kilowatt** |
| **Maintenance** | **Any instance in which preventive or corrective maintenance is carried out on equipment.** |
| **NEPA** | **National Environmental Policy Act** |
| **Networked** | **A charger that 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.** |
| **Open Charge Point Protocol (OCPP)** | **An open-source communication protocol that governs the communication between chargers and the charging networks that remotely manage the chargers.** |
| **Operational** | **A charging port’s hardware and software are both online and available to use, or in use, and the charging port is capable of successfully dispensing electricity.** |
| **Recipient** | **An applicant awarded a grant under a CEC solicitation** |
| **Small Business** | **Please refer to California Government Code §14837 (d)(1)(A)-(B).** **“Small business” means an independently owned and operated business that is not dominant in its field of operation, the principal office of which is located in California, the officers of which are domiciled in California, and which, together with affiliates, has 100 or fewer employees, and average annual gross receipts of $15 million dollars or less over the previous three years, or is a manufacturer, as defined in subdivision (c), with 100 or fewer employees.****For the purposes of public works contracts, as defined in Section 1101 of the Public Contract Code, and engineering contracts, as described in Section 4525, for public works projects, awarded through competitive bids or otherwise, “small business” means an independently owned and operated business that is not dominant in its field of operation, the principal office of which is located in California, the officers of which are domiciled in California, and which, together with affiliates, has 200 or fewer employees, and average annual gross receipts of $36 million dollars or less over the previous three years.** |
| **Software** | **A set of instructions, data, or programs used to operate computers and execute specific tasks.** |
| **Uptime** | **The time that a charging port is online and available for use per the formula in this Application Manual in Section II.B.16.** |

## Scope of Work (Attachment 1)

The following edits are made to the Solicitation’s Scope of Work.

* 1. **Glossary** (pages 1—5)

The following changes are made (unchanged terms or acronyms are not listed):

| **Term/ Acronym** | **Definition** |
| --- | --- |
| **Application Programming Interface (API)** | **A type of software interface that offers service to other pieces of software. An API allows two or more computer programs to communicate with each other.** |
| **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 calling the charging network provider’s customer service number.** |
| Charger | [~~One component of the larger charging station which drivers will interact with. The charger is where the charging connectors are located and may include a display screen and the payment interface.~~] **A device with one or more charging ports and connectors for charging EVs. Also referred to as electric vehicle supply equipment (EVSE).** |
| **Charging Network** | **A collection of chargers located on one or more property(ies) that are 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 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 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 and 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 and supporting equipment and facilities. In some cases, the charging station operator and the charging network provider are the same entity.** |
| **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.** |
| [~~CTP~~] | [~~Clean Transportation Program~~] |
| **Downtime** | **A period of time that a charger is not capable of successfully dispensing electricity or otherwise not functioning as designed. Downtime is calculated pursuant to Task *<Third to Last>*.4.** |
| FHWA | Federal Highway [~~Authority~~] **Administration** |
| **Hardware** | **The machines, wiring, and other physical components of an electronic system including onboard computers and controllers.** |
| **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, such as 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. Interoperability failure leads to failed charging sessions.** |
| **Maintenance** | **Any instance in which preventive or corrective maintenance is carried out on equipment.** |
| [~~OCPP~~] | [~~Open Charge Point Protocol~~] |
| **Networked** | **A charger that 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.** |
| **Open Charge Point Protocol or OCPP** | **An open-source communication protocol that governs the communication between chargers and the charging networks that remotely manage the chargers.** |
| **Operational** | **A charging port’s hardware and software are both online and available to use, or in use, and the charging port is capable of successfully dispensing electricity.** |
| **Operative State** | **The charger is operational.** |
| **Preventative Maintenance** | **Maintenance that is performed on physical assets to reduce the chances of equipment failure and unplanned machine downtime.** |
| **Software** | **A set of instructions, data, or programs used to operate computers and execute specific tasks.** |
| **Successful Charging Session** | **Following a charging 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 *<Third to Last>*.4.** |

* 1. **TASK *<Third to Last>* OPERATIONS AND RELIABILITY** (page 19)

**\*\*The Recordkeeping and Reporting subtasks are written to align with the regulation being prepared by the CEC to satisfy the requirements of AB 2061 (Ting, Chapter 345, Statutes of 2022). Because this regulation is still under development, these subtasks are subject to change.\*\***

**…**

**Task *<Third to Last>*.2 Recordkeeping** (pages 20—22)

The goal of this task is to collect and maintain records of charging port operation and reliability **and provide them to the CEC**. The Recipient shall collect and retain the remote monitoring and maintenance records specified in this section. The Recipient shall collect and retain records for each charging port installed and operated as part of this agreement. The Recipient shall retain records for each charging port for six (6) years from the date the charging port begins operation. **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 Application Programming Interface (API) of the CEC’s choosing to permit the charging network provider to transfer the data required in this section directly to the CEC or the CEC’s 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 60 minutes 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 *Remote Monitoring 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 five (5) years from the date the charging port begins operation. Provide *maintenance records* to the CEC within 10 business days of request.**
* [~~Collect and retain the Remote Monitoring and Maintenance data below from each charging port installed and operated as part of this Agreement.~~
* ~~Retain the data below for six (6) years from the date the charging port begins operation. Provide records provided to the CEC within 10 business days of request.~~
* ~~Provide digital records in a comma separated values file unless another file format is approved by the CEC for the request.~~
* ~~Provide a clear and understandable data dictionary that describes each data element and any associated units with all digital records.~~]

**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. The PDU transmittal may be initiated by either the central system to the charger or the charger to the central system.
2. HeartbeatResponse
3. StatusNotificationRequest
4. BootNotificationRequest
5. [~~NotifyEventRequest~~]
6. A record of each customer attempt to initiate a charge including charging port identification number, transaction identification number, and date-time stamp.
7. **The total number of successful charging sessions for the reporting period.**
8. A record of each failed attempt to charge including charging port identification number, transaction identification number, and date-time stamps and reason for failure.
9. **The percentage of successful charging sessions for the reporting period relative to the total number of charge attempts for the reporting period.**

**…**

**Task *<Third to Last>*.3 Maintenance Requirements** (pages 22—23)

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 [~~10~~] **5** business days of the beginning of a time when the charger or charging port is inoperative or exhibiting failures that result in an inability to charge.
* Report on preventive and corrective maintenance in each quarterly reliability report described in Task XX.4.

**…**

**Task *<Third to Last>*.4 Reporting** (pages 23—27)

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 *Quarterly Reports on Charger and Charging Port 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. **Downtime shall be determined on a per charging port basis by summing the durations of all downtime events during the reporting period. The duration of a downtime event shall be the longest of the following periods** [~~Downtime~~~~events 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.** [~~In the event that a StatusNotification is sent indicating the charger is inoperative, the time between that StatusNotification and a subsequent StatusNotification indicating that the charger has transitioned to an operative state shall be considered downtime. In the event that a BootNotification is sent, the time between the BootNotification and the last Heartbeat PDU sent prior to the BootNotification shall be considered downtime. The timestamps contained within the relevant PDUs shall be used to calculate 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.** [~~A charging port is in an inoperative state or failing to deliver charge, which may be known by consumer notification, internal diagnostics, inspection, or other methods.~~]
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.** [~~In the event there is a conflict between the sections (a) and (b), the operative state of the charging port shall be determined by (b).~~]
* 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 Preventative Maintenance or Upgrade: Downtime caused by any preventative 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 preventative 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.**
9. [**~~Electric Utility Service Interruptions:~~** ~~Power supplied by third-party provider is not supplied at levels required to for minimum function of chargers. This may include, but is not limited to, service outages due to utility equipment malfunction or public safety power shut-offs. This does not include power generation or storage equipment installed to serve the station exclusively. Documentation from power provider detailing outage is required to claim this as excluded time.~~
10. **~~Vandalism:~~** ~~Any physical damage to the charger and / or station committed by a third-party. This may include, but is not limited to, theft of charging cables, damage to connectors from mishandling, damage to screens, etc. A maximum of 5 calendar days may be claimed as excluded downtime for each event. The CAM may authorize additional excluded downtime for extenuating circumstances on a case-by-case basis. A police report or similar third-party documentation is required to claim this as excluded time.~~
11. **~~Scheduled Maintenance:~~** ~~Any planned maintenance or upgrade work that takes the charger offline. This must be scheduled in advance of the charger being placed in an inoperative state. The maximum downtime that can be excluded for planned maintenance and/or upgrade is 24 hours for any 12-month period.~~
12. **~~Natural Disasters:~~** ~~Any disruption of the chargers operation due to a natural event such 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) must be included to claim this as excluded downtime.~~
13. **~~Operating Hours:~~** ~~Hours in which the charging port is in an operative state but are outside of the identified hours of operation of the charging station.~~
14. **~~Vehicle Fault~~**~~:~~~~Any failure to charge or failure to meet the EV charging customer’s expectation for power delivery due to fault of the vehicle.~~]
* A summary and calculation of uptime. Each report shall include **calculation of uptime on a monthly basis for the previous 12 months. For example, if the reporting period is Q1 of 2024, uptime shall be reported for the previous 12 months from January 2024 (February 1, 2023, to January 31, 2024), February 2024 (March 1, 2023, to February 29, 2024), and March 2024 (April 1, 2023, to March 31, 2024).** [~~for the 12 months preceding the report, the monthly uptime percentage of~~] **The uptime calculation must be made for** each charging port [~~(Uptime)~~] installed and operated as part of this agreement. Charging port uptime shall be calculated as:

**µ = ((525,600−(T\_outage−T\_excluded))/525,600) × 100**

**where:**

**µ = port uptime percentage,**

**T\_outage = total minutes of outage in previous year, and**

**T\_excluded = total minutes of outage in previous year caused by the following reasons outside the charging station operator's control, provided that the charging station operator can demonstrate that the charging port would otherwise be operational: electric utility service interruptions, failure to charge or meet the EV charging customer's expectation for power delivery due to the fault of the vehicle, scheduled maintenance, vandalism, or natural disasters. Also excluded are hours outside of the identified hours of operation of the charging station.**

$[U\_{c}= \frac{T\_{c}-D\_{c}+E\_{c}}{T\_{c}}\*100\%$]

[~~U~~~~c~~ ~~= Charging Port Uptime~~

~~T~~~~c~~ ~~= 525,600 minutes~~

~~D~~~~c~~ ~~= Total charging port downtime for the reporting period, in minutes.~~

~~E~~~~c~~ ~~= Total charging port excluded downtime in the reporting period, in minutes.~~]

* 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. Details of all excluded downtime and a narrative description of events that caused the excluded downtime.**
7. [~~Total number of attempts to charge~~
8. ~~Total number of failed attempts to charge~~
9. ~~Failed attempts to charge by the following categories:~~
10. ~~Number of charge attempts that failed due to payment system failures~~
11. ~~Number of charge attempts that failed due to interoperability failures~~
12. ~~Number of charge attempts that failed due to charger hardware or software failures~~
13. ~~Number of charge attempts that failed due to other reasons~~
14. ~~A summary and explanation of “other reasons” for charge attempt failures~~
15. ~~A description of steps taken to reduce the number of failed charge attempts, and the success rate of those steps~~
* ~~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. Details of~~~~all excluded downtime and a narrative description of events that caused the excluded downtime.~~]

**Enrico Palo**

**Commission Agreement Officer**