



Electric Vehicle Charging Analytics and Reporting Tool (EV-ChART)

Data Format and Preparation Guidance Version 6.0



Except for the statutes and regulations cited, the contents of this document do not have the force and effect of law and are not meant to be binding in any way. This document is intended only to provide information regarding existing requirements under the law or agency policies.

Download the EV-ChART Data Input Template on DriveElectric.gov:
driveelectric.gov/files/ev-chart-data-input-template.xlsx

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Version Notes

For notes on previous versions of this document, refer to the “Versions” tab in the [EV-ChART Data Input Template](#).

The following changes have been implemented since Version 5.0:

- Direct recipient and subrecipient/contractor users can now add and submit data for non-federally funded stations. Stations can be differentiated using the Federally Funded field in the station registration page.
- Direct recipient and subrecipient/contractor users can specify which outages (outage_id) in Module 4 submissions meet the uptime calculation exclusion criteria using the following recommended fields:
 - Excluded Outage
 - Excluded Outage Reason
 - Excluded Outage Notes

List of Acronyms

AFC	Alternative Fuel Corridor
DER	distributed energy resource
EV	electric vehicle
EV-ChART	Electric Vehicle Charging Analytics and Reporting Tool
EVSE	electric vehicle supply equipment
NEVI	National Electric Vehicle Infrastructure
OCPI	Open Charge Point Interface
USPS	U.S. Postal Service
UTC	Coordinated Universal Time



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Introduction

Background

The Joint Office of Energy and Transportation maintains the Electric Vehicle Charging Analytics and Reporting Tool (EV-ChART), which provides a centralized hub for submitting electric vehicle (EV) charging infrastructure data directed by the Federal Highway Administration (23 CFR 680.112(a)-(c)).¹ EV-ChART provides a streamlined data submission process and an integrated set of analytic tools, connects to other data sources, and empowers data sharing and access across stakeholders, including the public. Any data shared publicly will be aggregated and anonymized to stay in accordance with 23 CFR 680.

This *EV-ChART Data Format and Preparation Guidance* provides a comprehensive overview of the data reporting requirements as authorized under 23 CFR 680.112(a)-(c)). The guidance is intended to be used alongside the [EV-ChART Data Input Template](#), which defines the tabular data structure that these data submissions must follow.

Per 23 CFR 680.112(a)-(c), the annual and quarterly data submissions are required of all National Electric Vehicle Infrastructure (NEVI) Formula Program projects, as well as projects for the construction of publicly accessible EV chargers that are funded with funds made available under Title 23, United States Code, including any EV charging infrastructure project funded with federal funds that is treated as a project on a federal-aid highway. One-time data submissions are required of both the NEVI Formula Program projects and grants awarded under 23 U.S.C. 151(f) for projects that are for EV charging stations located along and designed to serve the users of designated Alternative Fuel Corridors (AFCs). Other information and data required in 23 CFR 680, such as 23 CFR 680.112(d), 23 CFR 680.116(c), and 23 CFR 680.106(a), are not discussed in this guidance.

Scope of Data

EV-ChART is the prescribed source of data for 23 CFR 680.112(a)–(c). Quarterly, annual, and one-time data submittal will provide vitally important feedback that is necessary to monitor, measure, and improve EV charging infrastructure among the broader federal, state, and local policy decisions. EV-ChART data can be used to assess the following metrics:

- **Reliability:** A February 2023 J.D. Power report surveyed 26,500 charging attempts at Level 2 and direct-current (DC) fast chargers in all 50 states and found that drivers cannot reliably charge at public charging stations, with the rate of failure increasing from 15% in the first quarter of 2021 to more than 21% by

¹ Federal Highway Administration. 2022. “National Electric Vehicle Infrastructure Standards and Requirements.” *Federal Register*, 23 CFR 680. www.federalregister.gov/documents/2022/06/22/2022-12704/national-electric-vehicle-infrastructure-formula-program.

the fourth quarter of 2022.² The Federal Highway Administration aims to address this reliability issue in part by requiring minimum uptime (23 CFR 680.116(b)) and requiring data for duration of outage and error codes associated with an unsuccessful charging session (23 CFR 680.112(a)).

- **Future planning and policy:** EV-ChART will help state, federal, and local/municipal government departments of transportation improve siting and upgrading decisions by capturing charging session level data (23 CFR 680.112(a)). This will be invaluable in determining how congested charging stations are and will help stakeholders understand what operational decisions or network functionality contributed to optimal utilization levels. Additionally, maintenance and repair cost (23 CFR 680.112(b)(1)) will provide state, federal, and local governments a better understanding of the costs associated with installation, maintenance, and operation, which will inform EV charging program design.
- **Grid impact:** Collecting data on peak energy per session (23 CFR 680.112(a)(5)), distributed energy resource (DER) installed capacity (23 CFR 680.112(c)(2)), and DER acquisition and installation cost (23 CFR 680.112(c)(3)) will improve understanding on the impact of EV charging on the grid. This will help electric utilities, state public utility commissions, independent system operators, regional transmission organizations, and other state and federal agencies set policy, plan grid upgrades, and improve the process for siting and connecting future charging stations to the grid.
- **Equity:** Providing state departments of transportation with information to track and achieve their equity goals will inform workforce development initiatives and other federal, state, and local policies aimed at creating a vibrant, competitive market and new jobs.

Instructions

Data submissions to EV-ChART must follow the reporting standards outlined in this guidance and the format of the accompanying [EV-ChART Data Input Template](#). Please reference the EV-ChART User Guide for updates and guidance.

The required data are organized into nine modules, represented as different tabs in the *EV-ChART Data Input Template*. When submitting a row of data, every column within that row must have a value (exceptions are recommended fields). Modules should be submitted at a minimum cadence specified in 23 CFR 680.112(a)–(c). Modules may be submitted at a greater frequency than required. Note: Module 1’s reporting requirement for a station is met by registering that station through the EV-ChART website.

This document provides an overview of the data fields for each module and its data submission frequency (minimum required cadence of data submission per 23 CFR 680.112(a)–(c)). Each data field or row contains:

² Hannah Lutz. 2023. “EV drivers struggle with declining reliability of charging network.” *Automotive News*, Feb. 8, 2023. www.autonews.com/mobility-report/ev-drivers-struggle-declining-reliability-charging-network.

- **Data attribute:** Human-readable form that identifies the field.
- **Field name:** Computer-readable form that identifies the field.
- **Definition:** Definition of the field.
- **Format:** The [format/type](#) for each data field, and acceptable values, with examples.
- **Reporting:** Specifies whether the data field is required per 23 CFR 680.112(a)–(c) or recommended. A recommended field is information that has been deemed pertinent but not required. Submission of recommended fields is encouraged to allow additional evaluation and analysis.
- **Constraint:** Notes whether the field is a primary key.

Data Reporting Guidelines

Data Types

String(X)

Alphanumeric entries with a maximum length of X.

Categorical

Alphanumeric entries matching values from a defined list of accepted string values for the data attribute. Complete lists for each categorical data attribute are provided with the definition of the attribute.

DateTime

The date and time reported as *YYYY-MM-DDTHH:MM:SSZ*, following RFC 3339 formatting and reported in Coordinated Universal Time (UTC).

Decimal(X,Y)

Numeric values with a maximum number of X digits permitted and a length of exactly Y decimal places required.

Boolean

Either the word “TRUE” or “FALSE” reported as a string.

Integer or Integer(X)

Numeric value greater than or equal to zero and specified to the nearest whole number. No maximum value when X is not defined or with a maximum number of X digits when X is defined.

Data Submission Frequency

One-Time

As required by 23 CFR 680.112(c), beginning March 1, 2024, data with a “One-Time” data submission frequency must be collected and submitted a minimum of once for each charging station. Module 1, Station Location, must be submitted by the direct recipient and before any other submissions may be submitted.

Note: This data frequency applies only to the NEVI Formula Program projects and grants awarded under 23 U.S.C. 151(f) for projects that are for EV charging stations located along and designed to serve the users of designated AFCs.

Data Collection Timeline

Module 1, Station Location, must be submitted by the direct recipient prior to any other submissions. For all other modules, states or other direct recipients must submit one-time data—or approve data pre-submitted by their subrecipients and contractors—by March 1 of the current year for stations that became operational in the preceding year.

For example, a station that becomes operational any time during the 2023 calendar year may submit one-time data any time in 2023, but all one-time modules must be submitted or approved by the direct recipient no later than March 1, 2024.

We encourage one-time data to be submitted as soon as the data are available, as modules can be submitted independently. For example, a station that becomes operational any time during the 2023 calendar year may submit one-time data any time in 2023, but all one-time modules must be submitted or approved by the direct recipient no later than March 1, 2024.

Annual

As required by 23 CFR 680.112(b), beginning in 2024, data with a submission frequency of “annual” are submitted, at a minimum, on an annual basis, on or before March 1.

Data Collection Timeline

States or other direct recipients must submit annual data—or approve data pre-submitted by their subrecipients and contractors—by March 1 every year following the year the station became operational. For example, for stations that became operational any time during the 2023 calendar year, all annual modules must be submitted or approved every year no later than March 1, starting in 2024.

We encourage annual data to be submitted as soon as the data are available, as modules can be submitted independently.

Quarterly

Recipients must ensure data with a submission frequency of “quarterly” are submitted, at a minimum, once per calendar quarter. If a charging station is installed during a quarter, data must be submitted from the start of operation to the end of the quarter. Calendar quarters are defined as:

- Jan. 1 – March 31
- April 1 – June 30
- July 1 – Sept. 30
- Oct. 1 – Dec. 31

Data Collection Timeline

Data collection starts the day a station becomes operational. All data for a calendar quarter should be submitted by the last day of the next month following the end of a quarter. For example, a station that became operational Jan. 16 would need to report quarterly data on that station from Jan. 16 to March 31, and the report should be submitted or approved no later than April 30. Higher frequency (e.g., daily, monthly) of data submission is allowed.

Reporting on Required or Recommended Fields

Each data attribute is either required per 23 CFR 680.112(a)–(c) or recommended. A recommended field is information that has been deemed pertinent but not required. If recommended fields are reported, they must be reported concurrently, within the same module, as required fields. Submission of recommended fields is encouraged to enhance evaluation and analysis.

Data Summarization Table

Table 1. Summary of Required Data Items per 23 CFR 680.112(a)-(c)

Module	Data Attribute Click to see definition and examples.	Field Name	Data Type	Submission Frequency
All	Station ID*	station_id	String(36)	Varies
1, 2, 3, 4	Port ID*	port_id	String(36)	Varies
All	Direct Recipient ID	direct_recipient_id	Categorical	Varies
All	Network Provider*	network_provider	Categorical	Varies
5 and 9	Project ID	project_id	String(36)	Varies
Module 1: Station Location	Station Nickname	Module 1: Station Location data must be completed by registering the station through the EV-ChART website.	String(50)	One-Time
	Station Address*		String(255)	
	Station City*		String(100)	
	Station State*		Categorical	
	Station ZIP*		String(5)	
	Station ZIP Extended*		String(4)	
	Station Longitude*		Decimal(11,6)	
	Station Latitude*		Decimal(10,6)	
	Project Type		Categorical	
	Federally Funded*		Boolean	
	Funding Type*		Categorical	
	Operational Date		DateTime	
	Station Located on AFC*		Boolean	
	Port Type		Categorical	
Number of Federally Funded Ports*	Integer			
Number of Non-Federally Funded Ports	Integer			
Module 2: Charging Sessions ^a	Charger ID	charger_id	String(36)	Quarterly
	Session ID*	session_id	String(36)	
	Connector ID	connector_id	String(36)	

Module	Data Attribute Click to see definition and examples.	Field Name	Data Type	Submission Frequency
	Session Start*	session_start	DateTime	
	Session End*	session_end	DateTime	
	Session Error*	session_error	String(255)	
	Session Error Description	error_other	String(255)	
	Energy Charged*	energy_kwh	Decimal(7,2)	
	Peak Power*	power_kw	Decimal(7,2)	
	Payment Method*	payment_method	String(255)	
	Payment Method Description	payment_other	String(255)	
Module 3: Uptime ^b	Uptime Reporting Start Date*	uptime_reporting_start	DateTime	Quarterly
	Uptime Reporting End Date*	uptime_reporting_end	DateTime	
	Uptime*	uptime	Decimal(5,2)	
	Total Outage*	total_outage	Decimal(8,2)	
	Total Excluded Outage*	total_outage_excl	Decimal(8,2)	
Module 4: Outages ^a	Outage ID*	outage_id	DateTime	Quarterly
	Outage Duration*	outage_duration	Decimal(8,2)	
	Excluded Outage	excluded_outage	Boolean	
	Excluded Outage Reason	excluded_outage_reason	Integer(1)	
	Excluded Outage Notes	excluded_outage_notes	String(255)	
Module 5: Maintenance Costs ^c	Maintenance and Repair Cost Reporting Start Date*	maintenance_report_start	DateTime	Annual
	Maintenance and Repair Cost Reporting End Date*	maintenance_report_end	DateTime	
	Charging as a Service	caas	Boolean	
	Total Maintenance and Repair Cost*	maintenance_cost_total	Decimal(9,2)	
	Federal Maintenance and Repair Cost*	maintenance_cost_federal	Decimal(9,2)	
	Maintenance Notes	maintenance_notes	String(255)	
Module 6: Station Operator Identity	Station Operator Name*	operator_name	String(255)	One-Time
	Operator Type	operator_type	String(255)	
	Station Operator Address*	operator_address	String(255)	
	Station Operator City*	operator_city	String(255)	
	Station Operator State*	operator_state	String(2)	
	Station Operator ZIP*	operator_zip	String(5)	

Module	Data Attribute Click to see definition and examples.	Field Name	Data Type	Submission Frequency
	Station Operator ZIP Extended	operator_zip_extended	String(4)	
	Operator Notes	operator_notes	String(255)	
Module 7: Station Operator Program	Opportunity Program Reporting Year*	program_report_year	Integer(4)	Annual
	Opportunity Program Participation*	opportunity_program	String(255)	
	Opportunity Program Description	program_descript	String(255)	
Module 8: DER Information	Distributed Energy Resource On-Site*	der_onsite	Boolean	One-Time
	DER Upgrade	der_upgrade	Boolean	
	DER Asset Type*	der_type	String(255)	
	DER Asset Type Description	der_type_other	String(255)	
	Power Output Capacity*	der_kw	Decimal(10,2)	
	Energy Storage Capacity*	der_kwh	Decimal(10,2)	
Module 9: Capital and Installation Costs ^d	Station Upgrade	station_upgrade	Boolean	One-Time
	Real Property Acquisition Date	real_property_acq_date	DateTime	
	Real Property Acquisition Owned	real_property_acq_owned	Boolean	
	Total Real Property Acquisition Cost*	real_property_cost_total	Decimal(11,2)	
	Federal Real Property Acquisition Cost*	real_property_cost_federal	Decimal(11,2)	
	Charging Equipment Acquisition Date	equipment_acq_date	DateTime	
	Charging Equipment Acquisition Owned	equipment_acq_owned	Boolean	
	Total Charging Equipment Acquisition Cost*	equipment_cost_total	Decimal(11,2)	
	Federal Charging Equipment Acquisition Cost*	equipment_cost_federal	Decimal(11,2)	
	Charging Equipment Installation Date	equipment_install_date	DateTime	
	Total Charging Equipment Installation Cost*	equipment_install_cost_total	Decimal(11,2)	
	Federal Charging Equipment Installation Cost*	equipment_install_cost_federal	Decimal(11,2)	

Module	Data Attribute Click to see definition and examples.	Field Name	Data Type	Submission Frequency
	Charging Equipment Installation Cost – Electric Material	equipment_install_cost_elec	Decimal(11,2)	
	Charging Equipment Installation Cost – Construction Material	equipment_install_cost_const	Decimal(11,2)	
	Charging Equipment Installation Cost – Labor	equipment_install_cost_labor	Decimal(11,2)	
	Charging Equipment Installation Cost – Other	equipment_install_cost_other	Decimal(11,2)	
	Distributed Energy Acquisition Owned	der_acq_owned	Boolean	
	Total Distributed Energy Acquisition Cost*	der_cost_total	Decimal(11,2)	
	Federal Distributed Energy Acquisition Cost*	der_cost_federal	Decimal(11,2)	
	Total Distributed Energy Installation Cost*	der_install_cost_total	Decimal(11,2)	
	Federal Distributed Energy Installation Cost*	der_install_cost_federal	Decimal(11,2)	
	Total Distribution and System Costs*	dist_sys_cost_total	Decimal(11,2)	
	Federal Distribution and System Costs*	dist_sys_cost_federal	Decimal(11,2)	
	Total Service Costs*	service_cost_total	Decimal(11,2)	
	Federal Service Costs*	service_cost_federal	Decimal(11,2)	

* This data attribute's [reporting](#) is "required."

^a If no charging sessions or outages can be associated with one or more port IDs during a calendar quarter, confirm this through EV-ChART by preparing and submitting Module 2 or Module 4 data as follows:

- Provide the station ID, network provider, and port ID for each port ID with no associated charging sessions or outages.
- All other required Module 2 or Module 4 data attributes should be left blank.

^b The station must be operational for at least a full year by uptime reporting end date ([uptime_reporting_end](#)) to calculate port uptime in accordance with the equation in 23 CFR 680.116(b)(3). Otherwise, prepare and submit Module 3 data as follows:

- Provide the station ID, port ID, network provider, uptime reporting start date, uptime reporting end date, total outage and total outage excluded, for each port ID that have not been operational for at least 12 months.
- Report uptime as a blank field.

^c If there are no federal maintenance costs associated with one or more station ID for a given reporting period and total maintenance costs are unknown to the direct recipient, confirm this through EV-ChART by preparing and submitting Module 5 data as follows:

- Provide the station ID, network provider, maintenance and repair cost reporting start date, and maintenance and repair cost reporting end date for each station ID with no federal maintenance costs and unknown total maintenance costs.
- Report federal maintenance and repair cost as zero (0.00).
- Report total maintenance and repair cost as a blank field.

^d If there are no federal capital and installation costs associated with one or more station IDs and total capital and installation costs are unknown to the direct recipient, confirm this through EV-ChART by preparing and submitting Module 9 data as follows:

- Provide the station ID and network provider for each station ID with no federal capital and installation costs and unknown total capital and installation costs.
- Report federal capital and installation cost data attributes as zero (0.00).
- Report total capital and installation cost data attributes as a blank field.”

Primary Key Constraint

Each module contains at least two primary keys that uniquely identifies a record (informally a single row of data) reported in each module. The primary keys for each module are listed in Table 2.

Table 2. Primary Keys Defined for Each Module

Module	Primary Keys
1	Module 1: Station Location data needs to be filled out in the Station Registration form on the EV-ChART website. Primary Keys do not exist for Module 1.
2	Station ID, Network Provider, Port ID, Session ID
3	Station ID, Network Provider, Port ID, Uptime Reporting Start Date, Uptime Reporting End Date
4	Station ID, Network Provider, Port ID, Outage ID
5	Station ID, Network Provider, Maintenance and Repair Cost Reporting Start Date
6	Station ID, Network Provider, Station Operator Name
7	Station ID, Network Provider, Opportunity Program Reporting Year
8	Station ID, Network Provider, DER Asset Type
9	Station ID, Network Provider

Per 23 CFR 680.112(a), station ID and port ID must be the same IDs identified in the data made available to third parties specified in 23 CFR 680.116(c).

Data Definitions, Examples, and Types

An EV charging infrastructure hierarchy should be followed as seen in Figure 1. A connector must always be associated with a single port; however, each port may have one or more connectors. A port must always be associated with a single station; however, each station may have one or more ports. If the data attribute “charger” is used, the charger must always be associated with a single station; however, one or more ports can belong to charger. The mapping of these EV charging hierarchical terms to OCPI 2.2.1 is shown in Table 3. Refer to the definition of each data attribute for a more detailed explanation.

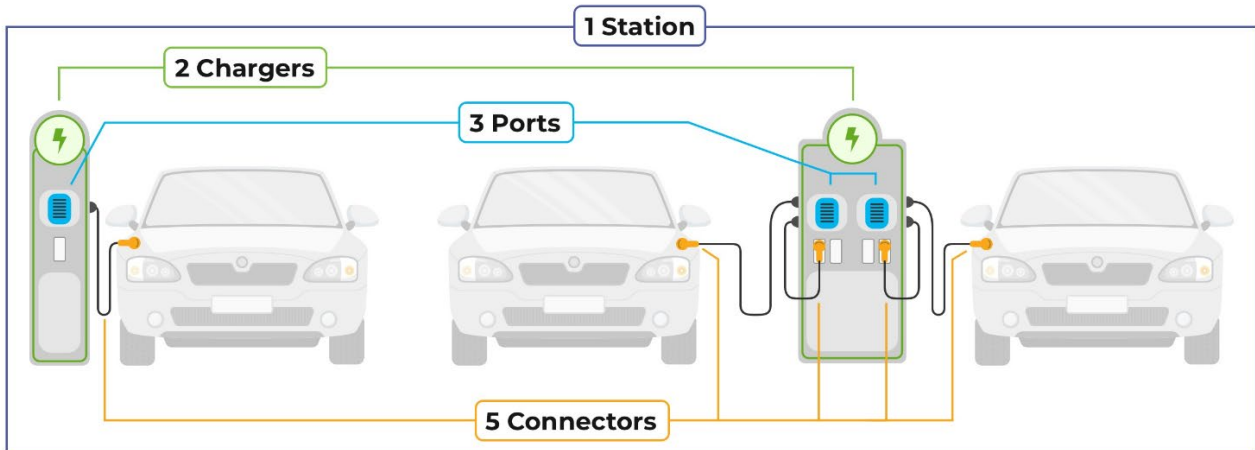


Figure 1. EV charging infrastructure hierarchy.

Source: Alternative Fuels Data Center, afdc.energy.gov/fuels/electricity-stations

Table 3. Data Attribute Definitions in EV-ChART versus OCPI 2.2.1 Recommended Properties

EV-ChART Data Attributes	OCPI 2.2.1 Recommended Properties
Station ID	The <i>id</i> property in the <i>location object</i>
Port ID	The <i>uid</i> property in the <i>evse object</i>
Connector ID	The <i>id</i> property in the <i>connector object</i>
Charger ID	No equivalence. Note: This is not equivalent to the <i>evse object</i> in OCPI 2.2.1.

Station ID* (*station_id*)

Definition

This attribute identifies a single charging station. Per 23 CFR 680, a charging station is the area in the immediate vicinity of a group of chargers and includes the chargers, supporting equipment, parking areas adjacent to the chargers, and lanes for vehicle ingress and egress. Note that a charging station could comprise only part of the property on which it is located. As stated in 680.112(a)(1), this must be the same charging station identifier used to identify the charging station in data made available in § 680.116(c)(1).

It is highly recommended that:

- The station ID attribute matches the *id property* in the *location object* in OCPI 2.2.1.
- The network provider provides the station ID, and it is unique within their organization.
- This field is never changed, modified, or renamed.

Example

LOC1

Type

String(36)

Port ID* (*port_id*)

Definition

This attribute identifies a single charging port. A charging port is capable of charging exactly one EV at a time. A charging port may have multiple connectors, but it can provide power to only one EV through one connector at a time.

Per 23 CFR 680.112(a)(2), this specified charging port ID must be the same value used to identify the charging port in data made available to third parties in 23 CFR 680.116(c)(8)(ii).

It is highly recommended that:

- The Port ID attribute matches the *uid* property in the *evse object* in OCPI 2.2.1. Note: The *uid* is not the same as the *id property* in the *evse object*.
- The network providers provide this ID, and it uniquely identifies the port within their organization.
- This field is never changed, modified, or renamed.
- The port ID is always associated with a single station ID.

Examples

- 3256
- EG98

Type

String(36)

Project ID (*project_id*)

Definition

Federal Award Identification Number (FAIN) or other identifiers that uniquely identify the NEVI Formula Program project and/or the grant awarded under 23 U.S.C. 151(f) for projects that are for EV charging stations (Station ID) located along and designed to serve the users of designated AFCs.

Examples

- AB-1234-567-89
- 12Q3456789

Type

String(36)

Direct Recipient ID (*direct_recipient_id*)

Definition

As a subrecipient or contractor uploading data for multiple direct recipients within one CSV file:

- This field must be used to identify the direct recipient organizations for whom you are uploading data.
- Each direct recipient organization has a unique ID located at evchart.driveselectric.gov/resources/direct-recipients (link is only visible in EV-ChART to subrecipients or contractors).

As a subrecipient or contractor uploading data for a single direct recipient within one CSV file:

- This field can be removed from the CSV file or ignored (left blank).

As a direct recipient:

- This field can be removed from the CSV file or ignored (left blank).

Examples

- 2000
- 4

Type

Categorical

Network Provider* (*network_provider*)

Definition

The name of 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.

The network provider field must be one of the strings listed in the Value column (not the Description column) located at evchart.driveselectric.gov/resources/network-providers.

Examples

- Tesla
- eVgo Network

Type

Categorical

Station Nickname

Definition

The station nickname is a name created by the direct recipient to identify the charging station (Station ID) more easily within EV-ChART.

Examples

- Rockcreek Expressway

Type

String(50)

Station Address*

Definition

The street address specifying the location of the charging station (Station ID). All components of the street address should be given, including street address number, street name, and sub-address (e.g., floor or unit number). Addresses may require unique formatting. Refer to the examples below.

Examples

- 0 Prince Street, Alexandria, VA 22314
- 0 1/2 Fifth Avenue, New York, NY 10003
- 210 East 400 South, Salt Lake City, UT 84111
- Milepost 240 Parks Highway, Alaska
- Milepost 72.9 Interstate 84, Wasco County, OR
- Kilometer 0.5 Carretera 917, Urbanizacion April Gardens, Las Piedras, PR 00771
- Kilometer 2 Hectometer 7 Carretera 175, Barrio San Antonio, Caguas, Puerto Rico 00725
- N89W16758 Appleton Avenue, Menomonee Falls, WI 53051
- W63N645 Washington Avenue, Cedarburg, WI 53012
- 5-5415 Kuhio Highway, Hanalei, HI 96714
- 194-03 1/2 50th Avenue, New York, NY 11365
- A 19 Calle 11, Toa Alta, Puerto Rico

Type

String(255)

Station City*

Definition

The name of the incorporated municipality (or other general-purpose local governmental unit) in which the charging station (Station ID) is located. This field should be used to identify any rural settlement in an unincorporated area, if applicable.

Examples

- 0 Prince Street, Alexandria, VA 22314
- 0 1/2 Fifth Avenue, New York, NY 10003
- 210 East 400 South, Salt Lake City, UT 84111
- Milepost 72.9 Interstate 84, Wasco County, OR
- Kilometer 0.5 Carretera 917, Urbanizacion April Gardens, Las Piedras, PR 00771
- Kilometer 2 Hectometer 7 Carretera 175, Barrio San Antonio, Caguas, Puerto Rico 00725
- N89W16758 Appleton Avenue, Menomonee Falls, WI 53051
- W63N645 Washington Avenue, Cedarburg, WI 53012
- 5-5415 Kuhio Highway, Hanalei, HI 96714
- 194-03 1/2 50th Avenue, New York, NY 11365
- A 19 Calle 11, Toa Alta, Puerto Rico

Type

String(100)

Station State*

Definition

U.S. Postal Service (USPS) name indicating the state (or state equivalent) in which the charging station (Station ID) is located. A state (or equivalent) is a primary governmental division of the United States, including the 50 U.S. states, District of Columbia, and all U.S. territories and outlying possessions.

Examples

- Illinois
- Delaware
- Puerto Rico

Type

Categorical

Station ZIP*

Definition

The 5-digit code that identifies the individual post office or metropolitan area delivery station associated with the address of a charging station (Station ID).

Example

35242-3426

Type

String(5)

Station ZIP Extended*

Definition

A 4-digit extension of the 5-digit station ZIP data attribute (preceded by a hyphen) that, in conjunction with station ZIP, identifies the specific range of USPS delivery addresses in which a charging station (Station ID) is located.

Example

35242-3426

Type

String(4)

Station Longitude*

Definition

Longitude of the charging station (Station ID) location that is derived based on point placement and in decimal degrees. A charging station could comprise only part of the property on which it is located. Provide the longitude specifically of the charging station rather than that of the parcel on which it is located.

Example

-84.290491

Type

Decimal(11,6)

Note that this must also be between 180 and -180.

Unit

Decimal degrees

Station Latitude*

Definition

Latitude of the charging station (Station ID) location that is derived based on point placement and in decimal degrees. A charging station could comprise only part of the property on which it is located. Provide the latitude specifically of the charging station rather than that of the parcel on which it is located.

Example

33.776032

Type

Decimal(10,6)

Note that this decimal must also be between 90 and -90.

Unit

Decimal degrees

Project Type*

Definition

How directed federal funds are being spent.

Table 4. Required Values for Project Type

Value	Description
Install a New Station	This option is for any station that was newly built using federal funds.
Update an Existing Station	This option is for any station that already existed but used federal funds to be repaired, replaced, or upgraded to be compliant.
Only Provide O&M	This option is for any station where federal funds have only been used on operation and maintenance.

Type

Categorical

Federally Funded*

Definition

Indicator for whether a station is funded by a federal program(s) as defined under the “Funding Type” field. A charging station is considered to be federally funded if the acquisition, installation, network connection, operation, or maintenance uses funds made available under Title 23, U.S.C. for projects for the construction of publicly accessible EV chargers or any EV charging infrastructure project funded with federal funds that is treated as a project on a Federal-aid highway.

Example

TRUE

Type

Boolean

Funding Type*

Definition

Federal funding program(s) directing funds to a project associated with a station.

Table 5. Required Values for Funding Type

Value	Description
NEVI	National Electric Vehicle Infrastructure
CFI	Charging and Fueling Infrastructure Discretionary Grant Program

EVCRAA	Electric Vehicle Charger Reliability and Accessibility Accelerator
CMAQ	Congestion Mitigation and Air Quality
CRP	Carbon Reduction Program
Other	Other Title 23 funding program that is not listed

Type

Categorical

Operational Date

Definition

The date the station officially became operational.

Example

2023-07-03

Type

DateTime

Unit

UTC

Station Located on AFC*

Definition

Indicator for whether this charging station (Station ID) is located along and designed to serve the users of AFCs.

Example

TRUE

Type

Boolean

Port Type

Definition

Classification of the port determined by the power they can provide.

Table 6. Values for Port Type

Value	Description
L2	AC Level 2 operates on a circuit from 208 to 240 volts and transfers alternating-current (AC) electricity to a device in an EV that converts AC to DC to recharge an EV battery.

DCFC

DC fast charger (DCFC) enables rapid charging by delivering DC electricity directly to an EV's battery.

Type

Categorical

Number of Federally Funded Ports*

Definition

The number of federally funded ports, as defined in 23 CFR 680, that the station has. A charging port is capable of charging exactly one EV at a time. A charging port may have multiple connectors, but it can provide power to only one EV through one connector at a time.

Example

12

Type

Integer

Number of Non-Federally Funded Ports

Definition

The number of non-federally funded ports, as defined in 23 CFR 680, that the station has. A charging port is capable of charging exactly one EV at a time. A charging port may have multiple connectors, but it can provide power to only one EV through one connector at a time.

Example

12

Type

Integer

Charger ID (*charger_id*)

Definition

This attribute identifies a single charger. A charger (or post) is a device with one or more charging ports and connectors for charging EVs.

Note: This is not equivalent to the definition of *evse object* in OCPI 2.2.1.

It is highly recommended that the charger ID is always associated with a single station ID.

Example

403

Type

String(36)

Session ID* (*session_id*)

Definition

This uniquely identifies each charging session. A charging session is a period of time that is initiated when an EV is connected to a charging port (plugged in) and concludes when the EV is disconnected from the charging port (unplugged).

The *session_id* attribute corresponds to the *id property* in the *session object* in OCPI 2.2.1.

If there were no charging sessions associated with a port ID during the reporting period, leave this field blank.

Examples

- 101
- 01KOL

Type

String(36)

Connector ID (*connector_id*)

Definition

This attribute identifies a single connector. A connector is a device that attaches the charging port to an EV's charging inlet to transfer electricity. This is the socket or cable and plug available for the EV to use. A single port may have multiple connectors, but only one of them can be in use at the same time.

It is highly recommended that:

- The Connector ID attribute matches the *id property* in the *connector object* in OCPI 2.2.1.
- A Connector ID should always be associated with a single Port ID.

Example

101

Type

String(36)

Session Start* (*session_start*)

Definition

Timestamp (following RFC 3339 in UTC, as shown in OCPI 2.2.1 DateTime Section 16.2) identifying when the charging session (charging session ID) became active in the platform of the charging network provider. The *session_start* data attribute corresponds to *start_date_time* under *session object* in OCPI 2.2.1.

A charging session is considered active when all preconditions for a session being accepted and active are met: there has been communication between the EV and charger (e.g., cable was correctly plugged in), and the EV or driver is authorized by the network provider to charge. At this time, the EV is being charged (or can be charged) and energy is (or is not) being transferred to the EV.

If there were no charging sessions associated with a port ID during the reporting period, leave this field blank.

Examples

- 2023-07-03T12:51:48Z

Type

DateTime

Unit

UTC

Session End* (*session_end*)

Definition

Timestamp (following RFC 3339 in UTC, as shown in OCPI 2.2.1 DateTime Section 16.2) identifying when the charging session (charging session ID) was completed. The *session_end* data attribute corresponds to *end_date_time* under *session object* in OCPI 2.2.1. Note that charging might have finished before the session ends (e.g., EV is full but customer must continue to pay for parking spot until session is completed).

If there were no charging sessions associated with a port ID during the reporting period, leave this field blank.

Examples

- 2023-07-03T12:51:48Z

Type

DateTime

Unit

UTC

Session Error* (session_error)

Definition

Any error codes associated with an unsuccessful charging session. If more than one error code is associated with an unsuccessful charging session, a comma-separated list of all relevant error codes must be given. Specify “None” if there are no errors associated with the charging session.

If there were no charging sessions associated with a port ID during the reporting period, leave this field blank.

Table 7. Recommended Values for Session Error

Value	Error Code Name	Description
none	None	No errors associated with the charging session.
CX001	ConnectorLockFailure	Failure to lock or unlock connector on the vehicle side.
CX002	GroundFailure	Ground fault circuit interrupter has been activated.
CX003	HighTemperature	High temperature inside the EVSE is derating power delivery.
CX004	OverCurrentFailure	Overcurrent protection device has tripped.
CX005	OverVoltage	Input voltage to the vehicle has risen above an acceptable level.
CX006	UnderVoltage	Input voltage to the vehicle has dropped below an acceptable level.
CX007	WeakSignal	Wireless communication device reported a weak signal.
CX008	EmergencyStop	Emergency stop is pressed by the user (required if equipped).
CX009	AuthorizationTimeout	The user plugs in but fails to authorize a charging session prior to the connection timeout between the vehicle and EVSE.
CX010	InvalidVehicleMode	The vehicle is in an invalid mode for charging.
CX011	CableCheckFailure	Failure during the cable check phase. Includes isolation failure.
CX012	PreChargeFailure	The EVSE did not reach the correct pre-charge voltage.
CX013	NoInternet	The EVSE has no internet connectivity.
CX014	PilotFault	The control pilot voltage is out of range.
CX015	PowerLoss	The EVSE is unable to supply any power due to mains failure.
CX016	EVContactorFault	Contactors fail to open or close on the vehicle side. May also include welding-related errors.
CX017	EVSEContactorFault	Contactors fail to open or close on EVSE's side. May also include welding-related errors.
CX018	CableOverTempDerate	Temperature of charging cable or connector assembly is too high, resulting in reduced power operation.
CX019	CableOverTempStop	Temperature of charging cable or connector assembly is too high, resulting in a stopped charging session.

Value	Error Code Name	Description
CX020	PartialInsertion	Cable latch is raised due to incomplete insertion into the vehicle charging port.
CX021	CapacitanceFault	An isolation monitoring device tripped due to high capacitance during active charging.
CX022	ResistanceFault	An isolation monitoring device tripped due to low resistance to the chassis during active charging.
CX023	ProximityFault	The proximity voltage is out of range.
CX024	ConnectorVoltageHigh	The output voltage of EVSE is high before charging starts or after charging ends.
CX025	BrokenLatch	The latch on the connector is broken.
CX026	CutCable	The output cable has been severed from the EVSE.
other	Other	Any other errors not specified above. Additional description must be provided in session error description.

More information on recommended error codes can be found in *Recommendations for Minimum Required Error Codes for Electric Vehicle Charging Infrastructure and Implementation Guide for Minimum Required Error Codes in Electric Vehicle Charging Infrastructure* by the [National Charging Experience \(ChargeX\) Consortium](#).

Examples

- CX020
- CX009, CX013
- CX025, other
- other
- none

Type

String(255)

Session Error Description (error_other)

Definition

The description for any other error codes associated with an unsuccessful charging session that are not categorized in the recommended error codes in session_error (i.e., “other” was selected for session_error). If multiple errors need to be defined, they should be given by a comma-separated list.

Examples

- Error description 1
- Error description 1, error description 2

Type

String(255)

Energy Charged* (energy_kwh)

Definition

Amount of energy (in kilowatt-hours) dispensed by the port (port ID) during the charging session (session ID). Energy charged corresponds to the attribute ENERGY_IMPORT defined in the CdrDimensionType object in OCPI 2.2.1.

If there were no charging sessions associated with a port ID during the reporting period, leave this field blank.

Examples

- 52.31

Type

Decimal(7,2)

Unit

kWh

Peak Power* (power_kw)

Definition

Maximum power (in kilowatts) dispensed by the port (port ID) during charging session (session ID). Peak power corresponds to the MAX_POWER attribute defined in the CdrDimensionType object in OCPI 2.2.1.

If there were no charging sessions associated with a port ID during the reporting period, leave this field blank.

Examples

- 120.43

Type

Decimal(7,2)

Unit

kW

Payment Method* (payment_method)

Definition

Method(s) of payment used to complete the charging session (session ID). If more than one payment method is associated with a charging session, a comma-separated list of all relevant payment methods must be given.

If there were no charging sessions associated with a port ID during the reporting period, leave this field blank.

Table 8. Values for Payment Method

Value	Description
none	Successful or unsuccessful charging session with no payment received
membership	Payment by membership account and/or membership card
credit_card_terminal	Payment via credit card or debit card terminal
phone_online	Payment through mobile app, website, automated phone number, or messaging system
plug_charge	Payment via ISO 15118 Plug and Charge
roaming	Payment via roaming partners
other	Any other payment method not specified above. Additional description should be provided in payment method description.

Examples

- membership
- credit_card_terminal, phone_online
- other
- none

Type

String(255)

Payment Method Description (payment_other)

Definition

The description for any method(s) of payment used to complete the charging session that are not categorized in the recommended payment methods in payment_method (i.e., “other” was selected for payment_method). If multiple payments need to be defined, they should be given by a comma-separated list.

Examples

- Cash
- Cash, transit card

Type

String(255)

Uptime Reporting Start Date* (*uptime_reporting_start*)

Definition

Timestamp (following RFC 3339 in UTC, as shown in OCPI 2.2.1 DateTime Section 16.2) identifying the start date of the reporting period for port uptime, total outage, and total excluded outage.

The reporting period should cover 12 rolling months, not to exceed the operational date of the port. Each quarterly submission must include data for three (3) 12-month windows for each Port ID.

This date field is the beginning of a 12-month window for which uptime and outage time is reported. The last day of each 12-month window (Uptime Reporting End Date) corresponds to the last day of each month in that quarterly submission. The first day of each 12-month window (Uptime Reporting Start Date) is exactly 12 months prior. Refer to Table 9 for reporting period dates.

If a station has been operational for less than one year, Uptime Reporting Start Date must equal the Operational Date of the port's station (Station ID). The Operational Date for a station is provided during station registration.

Table 9. Uptime Reporting Start and End Date. The start time for each start date is 00:00:00 UTC. The end time for each end date is 23:59:59 UTC.

Uptime Reporting Start Date	Uptime Reporting End Date	Reporting Period
Feb. 1	Jan. 31	Quarter 1
March 1	Feb. 28 (29 for leap year)	
April 1	March 31	
May 1	April 30	Quarter 2
June 1	May 31	
July 1	June 30	
Aug. 1	July 31	Quarter 3
Sept. 1	Aug. 31	
Oct. 1	Sept. 30	
Nov. 1	Oct. 31	Quarter 4
Dec. 1	Nov. 30	
Jan 1.	Dec. 31	

Example

2023-07-03T12:51:48Z

Type

DateTime

Unit

UTC

Uptime Reporting End Date* (uptime_reporting_end)

Definition

Timestamp (following RFC 3339 in UTC, as shown in OCPI 2.2.1 DateTime Section 16.2) identifying the end date of the reporting period for port uptime, total outage, and total excluded outage.

This date field is the ending of a 12-month window for which uptime and outage time is reported. Each quarterly submission must include data for three (3) 12-month windows for each Port ID. The last day of each 12-month window (Uptime Reporting End Date) corresponds to the last day of each month in that quarterly submission. Refer to Table 9 for reporting period dates.

Example

2023-07-03T12:51:48Z

Type

DateTime

Unit

UTC

Uptime* (uptime)

Definition

The uptime of a port (port ID) is the time over the previous 12 months when a charger's hardware and software are both online and available for use or in use, and the charging port successfully dispenses electricity in accordance with requirements for minimum power level.

23 CFR 680.112(a)(7) and 23 CFR 680.116(b) require that port uptime be calculated monthly for the previous 12 months, in accordance with the equation in 23 CFR 680.116(b)(3) for each month of the reporting period:

$$\mu = ((525,600 - (T_{\text{outage}} - T_{\text{excluded}})) / 525,600) \times 100$$

Where:

μ = Port uptime percentage for a given port ID.

T_{outage} = Total minutes of outage for the port ID in previous year.

T_{excluded} = Total minutes of outage for the port ID in previous year for reasons outside the charging station operator's control.

Reasons for excluded outages (outages outside the charging station operator’s control) include:

1. Electric utility service interruptions
2. Failure to charge or meet the EV charging customer’s expectation for power delivery due to the fault of the vehicle
3. Scheduled maintenance
4. Vandalism
5. Natural disasters
6. Hours outside of the identified hours of operation of the charging station.

The above reasons for outages stand as long as the charging station operator can demonstrate that the charging port would otherwise be operational.

Port uptime must be calculated as a rolling annual percentage that is updated each month according to the above formula. For example, data submitted for the first quarter of 2024 should include three annual uptime percentages for January, February, and March for each charging port (port ID). Refer to Table 9 for reporting periods.

If the station has not yet been operational for at least a full year by the Uptime Reporting End Date (uptime_reporting_end), port uptime should be left blank for that Port ID (port_id), Uptime Reporting Start Date (uptime_reporting_start), and the Uptime Reporting End Date (uptime_reporting_end), combination.

Table 10. Example of Module 3 Data Submission. Station A became operational December 14, 2023 and Station B became operational September 6, 2023.

station_id	port_id	uptime_reporting_start	uptime_reporting_end	uptime	total_outage	...
A	1	2023-12-14T00:00:00Z	2024-10-31T23:59:59Z			
A	1	2023-12-14T00:00:00Z	2024-11-30T23:59:59Z			
A	1	2024-01-01T00:00:00Z	2024-12-31T23:59:59Z	100.00	0.00	
B	2	2023-11-01T00:00:00Z	2024-10-31T23:59:59Z	99.12	50.25	
B	2	2023-12-01T00:00:00Z	2024-11-30T23:59:59Z	98.31	125.20	
B	2	2024-01-01T00:00:00Z	2024-12-31T23:59:59Z	97.02	854.36	

Examples

- 98.23
- 0.00
- 100.00

Type

Decimal(5,2)

Total Outage* (total_outage)

Definition

The total time (in minutes) during the previous year where the charging port (port ID) did not successfully dispense electricity as expected. This corresponds to the T_outage value in the port uptime formula in 23 CFR 680.116(b). Each quarterly submission must include Total Outage data for three (3) 12-month windows for each Port ID. Refer to Table 9 for reporting period dates.

If the station has not yet been operational for a full year, the time period for Total Outage time is from the operational date of the station to the end of each month in the calendar quarter being reported.

Examples

- 50.25
- 0.00
- 8760.00

Type

Decimal(8,2)

Unit

Minutes

Total Excluded Outage* (total_outage_excl)

Definition

The total time (in minutes) during the previous year where the charging port (port ID) did not successfully dispense electricity as expected for reasons outside the charging station operator's control. These include:

1. Electric utility service interruptions
2. Failure to charge or meet the EV charging customer's expectation for power delivery due to the fault of the vehicle
3. Scheduled maintenance
4. Vandalism
5. Natural disasters
6. Hours outside of the identified hours of operation of the charging station.

The above reasons for outages stand as long as the charging station operator can demonstrate that the charging port would otherwise be operational.

This corresponds to the T_excluded value in the port uptime formula in 23 CFR 680.116(b).

Each quarterly submission must include Total Outage data for three (3) 12-month windows for each Port ID. Refer to Table 9 for reporting period dates.

If the station has not yet been operational for a full year, similar to “Total Outage”, “Total Excluded Outage” should be reported from the first operational date of the station to the end date of each month in the calendar quarter being reported.

Examples

- 50.25
- 0.00
- 8760.00

Type

Decimal(8,2)

Unit

Minutes

Outage ID* (outage_id)

Definition

Timestamp uniquely identifying a single instance of an outage for a given charging port (port ID). An outage is any period of time during which a charging port cannot successfully dispense electricity as expected.

Outages must be identified regardless of whether their occurrence is for reasons outside of the control of the charging station operator (see outage and excluded outage data attributes for details). The outage_id should follow RFC 3339 in UTC, as shown in the OCPI 2.2.1 DateTime type.

If there were no outages associated with a port ID during the reporting period, leave this field blank.

Examples

- 2023-07-03T12:51:48Z

Type

DateTime

Unit

UTC

Outage Duration* (outage_duration)

Definition

Length of time (in minutes) during which the charging port (port ID) could not successfully dispense electricity as required by 23 CFR 680(a). Outage duration

must be reported for each outage instance (outage ID) and measure the duration of the entire outage, starting from the initial disruption in electricity being dispensed as expected to when the charging port is able to dispense electricity again successfully.

If there were no outages associated with a port ID during the reporting period, leave this field blank.

Examples

- 120.55

Type

Decimal(8,2)

Unit

Minutes

Excluded Outage (excluded_outage)

Definition

“TRUE” if the outage falls within one of the accepted excluded outage categories and was omitted from the “Uptime” calculation. “FALSE” if the outage does not fall within one of the accepted excluded outage categories. Refer to data attribute “Excluded Outage Reason” for a list of accepted excluded outage categories.

Examples

- TRUE

Type

Boolean

Excluded Outage Reason (excluded_outage_reason)

Definition

Specifies which of the accepted excluded outage categories justifies the outage being excluded from the “Uptime” calculation. This field accepts integer values from 0 to 6, aligning with the following accepted excluded outage reasons:

1. Electric utility service interruptions
2. Failure to charge or meet the EV charging customer’s expectation for power delivery due to the fault of the vehicle
3. Scheduled maintenance
4. Vandalism
5. Natural disasters
6. Hours outside of the identified hours of operation of the charging station.

This field may be reported with an integer value of 0 if the outage was included in the “Uptime” calculation and therefore does not fall into one of the accepted excluded outage categories.

Examples

- 0
- 4

Type

Integer(1)

Excluded Outage Notes (excluded_outage_notes)

Definition

A description of the outage and/or justification for why the outage is excluded in the “Uptime” calculation, using an open text field. If the outage was included in the “Uptime” calculation, leave this field blank.

Examples

- This outage was caused by a severe storm and downed power lines that interrupted the electric utility service.

Type

String(255)

Maintenance and Repair Cost Reporting Start Date* (maintenance_report_start)

Definition

Timestamp (following RFC 3339 in UTC, as shown in OCPI 2.2.1 DateTime Section 16.2) identifying the start date associated with reported maintenance and repair costs. Maintenance and repair cost data are reported on an annual basis, on or before March 1 for the previous calendar year. This should be January 1 of the previous reporting year or the start date of the station, whichever is later.

Example

2023-07-03T12:51:48Z

Type

DateTime

Unit

UTC

Maintenance and Repair Cost Reporting End Date* (maintenance_report_end)

Definition

Timestamp (following RFC 3339 in UTC, as shown in OCPI 2.2.1 DateTime Section 16.2) identifying the end date associated with reported maintenance and repair costs. Maintenance and repair cost data are reported on an annual basis, on or before March 1 for the previous calendar year. It should be December 31 of the previous reporting year or the end date of the station, whichever is earlier.

Example

2023-07-03T12:51:48Z

Type

DateTime

Unit

UTC

Charging as a Service (caas)

Definition

Indicator for whether the total maintenance and repair cost at the charging station (Station ID) is reported as a total cost from a “charging-as-a-service” agreement that does *not* provide itemized maintenance and repair costs; the total cost may include equipment acquisition, installation, and other services.

For a charging station that is part of a charging-as-a-service agreement without itemized costs for equipment, maintenance and repair, and other services, use total maintenance and repair cost and federal maintenance and repair cost to report the total cost.

Example

TRUE

Type

Boolean

Total Maintenance and Repair Cost* (maintenance_cost_total)

Definition

Total amount paid for maintenance and repair at the charging station (Station ID) during the calendar year specified in “maintenance and repair cost reporting year.”

If the amount invoiced is for multiple years, the amount should be prorated based on total number of days in the reporting period each year. For example, if maintenance and repair amount covers a total of 5 years, from Dec. 1, 2023, to

Nov. 30, 2028, the annual data submittal due by March 1, 2024, should include the amount from calendar year 2023, so the amount should be prorated for Dec. 1, 2023, to Dec. 31, 2023 (or 31 days), out of the 5-year total.

If there was no federal cost to the project, then this field may be left blank.

Examples

- 2500.35

Type

Decimal(9,2)

Unit

USD

Federal Maintenance and Repair Cost* (*maintenance_cost_federal*)

Definition

Total amount paid for maintenance and repair at the charging station (Station ID) during the calendar year specified in “maintenance and repair cost reporting year” with federal funding.

If the amount invoiced is for multiple years, the same process described in the total maintenance and repair cost should be followed.

If there was no federal cost to the project, report as 0.00.

Examples

- 1800.00
- 0.00

Type

Decimal(9,2)

Unit

USD

Maintenance Notes (*maintenance_notes*)

Definition

Additional description that explains the maintenance and repair cost data.

Examples

- Prepaid 5 years, 31 days prorated
- Includes warranty, prepaid maintenance, service, and networking

Type

String(255)

Station Operator Name* (operator_name)

Definition

The entity that owns the chargers and supporting equipment and facilities at one or more charging stations (Station ID). 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.

Example

Electrify America

Type

String(255)

Operator Type (operator_type)

Definition

Indicator for what type of involvement the private entity (station operator name) has at the charging station (station ID). If the entity is involved in more than one category, a comma-separated list of all categories must be given. Use operator notes to provide additional description if needed or if “other” is selected.

Recommended values for operator type are:

- Operation
- Maintenance
- Other

Examples

- operation
- operation, maintenance

Type

String(255)

Station Operator Address* (operator_address)

Definition

The street address specifying the headquarters of the charging station operator.

Example

See station address (above)

Type

String(255)

Station Operator City* (operator_city)

Definition

The name of the incorporated municipality (or other general-purpose local governmental unit) in which the headquarters of the charging station operator is located. This field should be used to identify any rural settlement in an unincorporated area, if applicable.

Example

See station city (above)

Type

String(255)

Station Operator State* (operator_state)

Definition

Two-character USPS abbreviation indicating the state (or state equivalent) in which the headquarters of the charging station operator is located. A state (or equivalent) is a primary governmental division of the United States, including the 50 U.S. states, District of Columbia, and all U.S. territories and outlying possessions.

Examples

- AZ
- OR
- IL

Type

String(2)

Station Operator ZIP* (operator_zip)

Definition

The 5-digit code that identifies the individual post office or metropolitan area delivery station associated with the address of the headquarters of the charging station operator.

Example

35242-3426

Type

String(5)

Station Operator ZIP Extended (*operator_zip_extended*)

Definition

A 4-digit extension of the 5-digit station operator ZIP code (preceded by a hyphen) that, in conjunction with the charging station operator ZIP data attribute, identifies the specific range of USPS delivery addresses in which the headquarters of the charging station operator is located.

Example

35242-3426

Type

String(4)

Operator Notes (*operator_notes*)

Definition

Additional description that explains station operator data.

Example

Only responsible for hardware maintenance and repair

Type

String(255)

Opportunity Program Reporting Year* (*program_report_year*)

Definition

Calendar year associated with the charging station operator's participation in community opportunity programs. Participation data are reported on an annual basis, on or before March 1.

Example

2024

Type

Integer(4)

Opportunity Program Participation* (*opportunity_program*)

Definition

The type of state or local business opportunity certification program(s) for all private entities involved in the operation and maintenance of chargers participated in during the calendar year specified in opportunity program reporting year. If the charging station (Station ID) participates in more than one opportunity program, a comma-separated list of all types must be given.

Table 11. Recommended Values for Opportunity Program Participation

Value	Description
none	The business does not identify as participating in any state or local business opportunity certification program.
minority_owned	The business identifies as participating in a state or local business opportunity certification program for minority-owned businesses.
veteran_owned	The business identifies as participating in a state or local business opportunity certification program for veteran-owned businesses.
woman_owned	The business identifies as participating in a state or local business opportunity certification program for woman-owned businesses.
economically_disadvantaged_owned	The business identifies as participating in a state or local business opportunity certification program for businesses owned by economically disadvantaged individuals.
other	The business identifies as participating in another state or local business opportunity certification program. Additional description should be provided in the opportunity program description.

Examples

- veteran_owned, woman_owned
- woman_owned
- veteran_owned, other
- other
- none

Type

String(255)

Opportunity Program Description (program_descript)

Definition

The description of opportunity_program if “other” is chosen from the recommended opportunity programs. The structure should be: “the_description_of_the_opportunity_program-the definition.” If multiple opportunity programs need to be named, they should be given by a comma-separated list.

Example

lgbtq_owned-business has 51% LGBTQ ownership

Type

String(255)

Distributed Energy Resource On-Site* (der_onsite)

Definition

Indicator for whether a DER is present at the charging station (Station ID). A DER is defined as any small, modular, energy generation and storage technologies that provide electric capacity or energy where it is needed.

Example

TRUE

Type

Boolean

DER Upgrade (der_upgrade)

Definition

“TRUE” if the charging station (Station ID) is an existing station with any DERs and the DERs were upgraded or updated; “FALSE” if the charging station was brand new or if federal funds were spent installing new DERs on an existing station.

Example

TRUE

Type

Boolean

DER Asset Type* (der_type)

Definition

The type of asset(s) that comprise the DER available on-site. This should only be for one asset type. If more than one asset type comprises the DER on-site, an additional record/row should be submitted.

Recommended values for DER asset type are:

- solar
- wind
- stationary_battery
- hydrogen_fuel_cell
- other
- none

Examples

- solar
- none
- wind, other

Type

String(255)

DER Asset Type Description (der_type_other)

Definition

The name and description for any other type(s) of assets that are not categorized in the recommended DER asset types. The structure should be: “the_name_of_the_DER-the definition.”

Example

combined_heat_and_power_units-utilize waste heat to provide cooling

Type

String(255)

Power Output Capacity* (der_kw)

Definition

The power generation capacity (in kilowatts) of the DER as power generation, or the maximum discharge power capacity (in kilowatts) of the DER as energy storage available on-site.

If der_onsite is “FALSE,” the value should be zero.

Examples

- 100.00
- 0.00

Type

Decimal(10,2)

Unit

kW

Energy Storage Capacity* (der_kwh)

Definition

The capacity (in kilowatt-hours) of the DER as energy storage available on-site.

If there is no energy storage available on-site, the value should be zero.

Examples

- 45.00
- 0.00

Type

Decimal(10,2)

Unit

kWh

Station Upgrade (station_upgrade)

Definition

Indicator whether the charging station (station ID) is an existing station (i.e., charging stations that were installed prior to this funded project and/or grant) that uses federal funds for updates, upgrades, or replacements. “TRUE” if the charging station is an existing station, “FALSE” if the charging station is a new station.

Example

TRUE

Type

Boolean

Real Property Acquisition Date (real_property_acq_date)

Definition

Timestamp (following RFC 3339 in UTC, as shown in OCPI 2.2.1 DateTime Section 16.2) identifying the date associated with acquisition of the real property on which the charging station (station ID) is located.

Example

2023-07-03T12:51:48Z

Type

DateTime

Unit

UTC

Real Property Acquisition Owned (real_property_acq_owned)

Definition

Indicator for whether the real property on which the charging station (station ID) is located is purchased or leased. “TRUE” if the real property is acquired by a purchase agreement, “FALSE” if the real property is acquired by a lease agreement.

Example

TRUE

Type

Boolean

Total Real Property Acquisition Cost* (real_property_cost_total)

Definition

Total amount paid for the parcel on which the charging station (station ID) is located. A parcel is bounded by a property line or a designated portion of a public thoroughfare. Note that a charging station could comprise only part of the property on which it is located. For real property that is leased, total real property acquisition cost should be the annualized leasing cost.

If there was no federal cost to the project, then this field may be left blank.

Examples

- 1010.00
- 0.00

Type

Decimal(11,2)

Unit

USD

Federal Real Property Acquisition Cost* (real_property_cost_federal)

Definition

Total amount paid using federal funding for the parcel on which the charging station (station ID) is located. A parcel is bounded by a property line or a designated portion of a public thoroughfare. Note that a charging station could comprise only part of the property on which it is located. For real property that is leased, federal real property acquisition cost should be the annualized leasing cost using federal funding.

If there was no federal cost to the project, report as 0.00.

Examples

- 1010.00
- 0.00

Type

Decimal(11,2)

Unit

USD

Charging Equipment Acquisition Date (*equipment_acq_date*)

Definition

Timestamp (following RFC 3339 in UTC, as shown in OCPI 2.2.1 DateTime Section 16.2) identifying the date associated with acquisition of the charging equipment associated with a given charging station (station ID).

Example

2023-07-03T12:51:48Z

Type

DateTime

Unit

UTC

Charging Equipment Acquisition Owned (*equipment_acq_owned*)

Definition

Indicator for whether the charging equipment associated with a given charging station (station ID) is purchased or leased. "TRUE" if the charging equipment is purchased, "FALSE" if the charging equipment is leased or acquired as part of charging-as-a-service agreement.

Example

TRUE

Type

Boolean

Total Charging Equipment Acquisition Cost* (*equipment_cost_total*)

Definition

Total amount paid for the charging equipment associated with a given charging station (station ID). For charging equipment that is leased, the total charging equipment acquisition cost should be the annualized leasing cost. For charging equipment that is part of a charging-as-a-service agreement without itemized charging equipment acquisition cost, use total maintenance and repair cost to report service cost that includes equipment, maintenance, and repair.

If there was no federal cost to the project, then this field may be left blank.

Examples

- 1010.00
- 0.00

Type

Decimal(11,2)

Unit

USD

Federal Charging Equipment Acquisition Cost* (equipment_cost_federal)

Definition

Total amount paid using federal funding for the charging equipment associated with a given charging station (station ID). For charging equipment that is leased, federal charging equipment acquisition cost should be the annualized leasing cost using federal funding. For charging equipment that is part of a charging-as-a-service agreement without itemized charging equipment acquisition cost, use total maintenance and repair cost to report service cost that includes equipment, maintenance, and repair.

If there was no federal cost to the project, report as 0.00.

Examples

- 1010.00
- 0.00

Type

Decimal(11,2)

Unit

USD

Charging Equipment Installation Date (equipment_install_date)

Definition

Timestamp (following RFC 3339 in UTC, as shown in OCPI 2.2.1 DateTime Section 16.2) identifying the installation data of the charging equipment associated with a given charging station (station ID).

Example

2023-07-03T12:51:48Z

Type

DateTime

Unit

UTC

Total Charging Equipment Installation Cost* (equipment_install_cost_total)

Definition

Total amount paid for the installation of charging equipment at a given charging station (station ID).

If there was no federal cost to the project, then this field may be left blank.

Examples

- 1010.00
- 0.00

Type

Decimal(11,2)

Unit

USD

Federal Charging Equipment Installation Cost* (equipment_install_cost_federal)

Definition

Total amount paid using federal funding for the installation of charging equipment at a given charging station (station ID).

If there was no federal cost to the project, report as 0.00.

Examples

- 1010.00
- 0.00

Type

Decimal(11,2)

Unit

USD

Charging Equipment Installation Cost – Electric Material (equipment_install_cost_elec)

Definition

Total amount paid for electrical materials (e.g., conduit/wiring, switchgears, insulation) for the installation of the charging equipment at a given charging station (station ID). This cost should be part of the total charging equipment installation cost.

Examples

- 1010.00
- 0.00

Type

Decimal(11,2)

Unit

USD

Charging Equipment Installation Cost – Construction Material (equipment_install_cost_const)

Definition

Total amount paid for construction materials (e.g., concrete, asphalt, wheel stops) for the installation of the charging equipment at a given charging station (station ID). This cost should be part of the total charging equipment installation cost.

Examples

- 1010.00
- 0.00

Type

Decimal (11, 2)

Unit

USD

Charging Equipment Installation Cost – Labor (equipment_install_cost_labor)

Definition

Total amount paid for labor for the installation of the charging equipment at a given charging station (station ID). This cost should be part of the total charging equipment installation cost.

Examples

- 1010.00
- 0.00

Type

Decimal (11, 2)

Unit

USD

Charging Equipment Installation Cost – Other (equipment_install_cost_other)

Definition

Total amount paid for items not associated with electric material, construction material, or labor for the installation of the charging equipment at a given charging station (station ID). This cost should be part of the total charging equipment installation cost.

Examples

- 1010.00
- 0.00

Type

Decimal (11, 2)

Unit

USD

Distributed Energy Acquisition Owned (der_acq_owned)

Definition

Indicator for whether the DER components, including energy generation and storage equipment, are purchased or leased. “TRUE” if the DER components are purchased, “FALSE” if the DER components are leased.

Examples

- TRUE

Type

Boolean

Total Distributed Energy Acquisition Cost* (der_cost_total)

Definition

Total amount paid for the acquisition of DER components, including energy generation and storage equipment. This value is distinct from the purchase price of the charging equipment (charging equipment acquisition cost). For DER components that are leased, total distributed energy acquisition cost should be the annualized leasing cost.

If there was no federal cost to the project, then this field may be left blank.

Examples

- 1010.00
- 0.00

Type

Decimal(11,2)

Unit

USD

Federal Distributed Energy Acquisition Cost* (der_cost_federal)

Definition

Total amount paid using federal funding for the acquisition of DER components, including energy generation and storage equipment. This value is distinct from the purchase price of the charging equipment (charging equipment acquisition cost). For DER components that are leased, federal distributed energy acquisition cost should be the annualized leasing cost using federal funding.

If there was no federal cost to the project, report as 0.00.

Examples

- 1010.00
- 0.00

Type

Decimal(11,2)

Unit

USD

Total Distributed Energy Installation Cost* (der_install_cost_total)

Definition

Total amount paid for the installation of the DER on-site.

If there was no federal cost to the project, then this field may be left blank.

Examples

- 1010.00
- 0.00

Type

Decimal(11,2)

Unit

USD

Federal Distributed Energy Installation Cost* (der_install_cost_federal)

Definition

Total amount paid using federal funding for the installation of the DER on-site.
If there was no federal cost to the project, report as 0.00.

Examples

- 1010.00
- 0.00

Type

Decimal(11,2)

Unit

USD

Total Distribution and System Costs* (dist_sys_cost_total)

Definition

Total distribution and system costs paid to the electric utility for distribution and system costs (e.g., extensions to overhead/underground lines, upgrades from single-phase to three-phase lines).

If there was no federal cost to the project, then this field may be left blank.

Examples

- 1010.00
- 0.00

Type

Decimal(11,2)

Unit

USD

Federal Distribution and System Costs* (dist_sys_cost_federal)

Definition

Total distribution and system costs paid using federal funds to the electric utility for distribution and system costs (e.g., extensions to overhead/underground lines, upgrades from single-phase to three-phase lines).

If there was no federal cost to the project, report as 0.00.

Examples

- 1010.00

- 0.00

Type

Decimal(11,2)

Unit

USD

Total Service Cost* (service_cost_total)

Definition

Total service costs paid to the utility in order to enable grid connection (e.g., cost of poles, transformers, meters, and on-service connection equipment).

If there was no federal cost to the project, then this field may be left blank.

Examples

- 1010.00
- 0.00

Type

Decimal(11,2)

Unit

USD

Federal Service Costs* (service_cost_federal)

Definition

Total service costs paid using federal funding to the utility in order to enable grid connection (e.g., cost of poles, transformers, meters, and on-service connection equipment).

If there was no federal cost to the project, report as 0.00.

Examples

- 1010.00
- 0.00

Type

Decimal(11,2)

Unit

USD

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