Fleet Management Services

Specifications

Fleet Electric Vehicle (EV) Charging Stations

Product Specifications:

Operating Environment Standards: AC Level II charger will have;

- 208-240 VAC, 1 Phase;
- Maximum current input of <80 A;
- Output of 30 A;
- Branch circuit breaker rating to comply with NEC 625
- Ambient temperature of at least -20F to 120F during operations,
- Sun proof, waterproof

Physical Specifications:

- **Exterior**
  - Stainless steel shell adequate to withstand indoor and outdoor environments.

- **Charging cord and connectors**
  - Level II connectors with the J1772 Standard connector;
  - Cords and connectors to be included in the EV package with the ability to be replaced in the case of damage or technical upgrade;
  - Cords must be highly visible in color (i.e. yellow, orange)
  - Cord length, Minimum 18'
  - Ability to lock and release cable to avoid theft.
  - Ability to coil or store cord when not in use.

- **Authorization of users**
  - Users (Smithsonian employees) will interface with a secure method, (e.g. RFID card reader, fleet (credit) card, or touch screen) to authorize a charging session,
  - User interactive touch screen should be weather proof, readable in sunlight, and fingerprint resistant;
  - Card Reader must be ISO 7811 complaint;
  - RFID must be 15693 complaint;
  - A phone number for user support is to be provided on the charger station for support.

- **Internal Technology**
  - **Physical hardware will include**

- All wiring, hardware, and circuitry and internal components necessary to charge an all electric vehicle (EV), plug in hybrid (PHEV), neighborhood electric vehicle (NEV), and electric motorcycle or scooter;
- A circuit card interface device (CCID) to recognize RFID card or configurable magnetic card reader;
- A ground fault circuit interrupter (GFCI) to prevent electrocutions
- Utility grade metering – energy metering clip;
- National Electrical Manufactures Association (NEMA) type 3 enclosures.

- **Software will be included or designed for**
  - A wireless interface or 10/100/100 base –T Ethernet;
  - An internal computer with sufficient memories for future upgradability;
  - A distributed, connect environment;
  - Data communications architecture that supports smart charge management applications;
  - A firmware upgrade that can be performed remotely without disturbing the EV operations;
  - Interoperability with existing car navigation systems to display avaible stations;
  - The necessary connectivity and software upgradability for impending V2G technology.

- **User interaction requirements will include**
  - The ability to be accessed by non- fleet users;
  - A notification of the level of charge (or if interruption has occurred)

Network management:

- Web portal will be designed to;
  - Manage users, plans, policies, including potential billing, and reconciliation;
  - Ability to set user and group charging preferences / impose policies;
  - Real time control in case there is a need to override a charging profile;
  - Generation of reports for users, owners, utilities, etc,;
  - Communications to users multimedia (text message, email, web portal, etc;
  - Remote system monitoring through the web portal and notification of events (in use, finished charging, interrupted charging, operating failure, etc);
  - Ability to export all data in excel, comma deleted, CSV, PDF, formats
    - Key data point required for export
      - Unit number;
      - Vehicle identification number (VIN);
      - Mileage;
      - kWh used;
      - Charging start & stop time.

- **Load management**
    - The charging network will have the ability to work with utility programs such as demand response, plan, off peak plans, etc, to reduce energy costs;
    - Remote load management will be possible;
    - Ability for the host to set polices including load limiting.

Product safety:

- All units will include
    - The ability to stop flow of power through he unit when it is not in use;
    - An over-current protection to prevent vehicles from drawing too much power.

Data collection abilities:

- Plug-in electric vehicle (PHEV) vehicle information, including;
    - Vehicle identification number;
    - State of charge before and after charging session.
- EV information, including
    - Station utilization rate during various times of the day and days of the month;
    - Authorized requests and responses;
    - Charging data (User, location, kWh used, and start & stop time) for each charging session;
    - Station health and monitoring;
    - Number of GFCI trips and resets;
    - Plug out detection;
    - Over current detection and handling;
    - Number of reboots due to power outage or circuit breaker tripping and resets;
    - Amount of fuel or greenhouse gas (GHG) savings;
    - Inventory of station, (location, model, hardware, software versions, etc);
    - Demand response;
- Usage information to be collected
    - Time;
    - Energy consumption;
    - Current stored energy load in the battery connected to the charging station;
    - Maximum amount of energy that will be charged based on battery size;
    - GHG emissions saved;
- The system will collect time and dates of charging activities, demand response events, and vehicle information, and must comply with all state and federal regulations.

Charging Station Mounting:

Electric vehicle charging station will be mounted to /on:

- Steel mounting pole: minimum 3’ in height, or
- Concrete pedestal; minimum 12” x 12” x 27”

Warranty:

Equipment, material and parts furnished under the quote shall be the latest improved models in current production, as offered to commercial trade, and shall be of quality material. Vendor shall warrant that all materials and equipment included in such work will be new except where indicated otherwise in quote documents. Used, shopworn, demonstrator, prototype, reconditioned or discontinued models or materials are not acceptable.

The warranty period for the vendor provided materials shall be for a period of two (2) years after completion of the installation. The manufacturers' warranty period shall commence upon date of acceptance by Montgomery County Government.

Contractor shall provide the Owner and authorized County representative with all manufacturers' warranty documents upon completion of installation and prior to leaving the job site.