VCI-MUD

Multi-Unit Dwelling (MUD) Electric Vehicle (EV) Charging Technology Solutions:

Mobile Charging

MUD BARRIERS TO INSTALLING EV CHARGING

Parking Limitation: Limited number of parking spaces can be allocated for shared EV charging

Parking Operation: MUD Property Managers need to maximize shared EV charging usage to minimize the number of shared parking spots. Alternatively, MUD Property Managers need a way to share power among a group of dedicated charging stations at assigned parking spots that minimizes disruption to parking spot logistics.

Electrical Infrastructure Cost: Conventional solutions require a dedicated circuit/power for each charging station. MUD properties without sufficient electrical capacity for the desired number of charging stations will require costly electrical infrastructure upgrades.

Charging Station Cost: MUD property managers want to use cost-effective charging stations that provide the required functionality

Operating Cost: It is challenging for MUD properties to establish a business case for offering EV charging to residents. MUD Property Managers want lower charging network provider fees and strategies to reduce power cost, along with ability to bill for usage.

HOW MOBILE CHARGING CAN ADDRESS EV CHARGING BARRIERS

Parking Limitation: Can be used in dedicated or shared parking situations. Does not require any changes to parking management approach.

Parking Operation: Does not require any changes to parking management approach

Electrical Infrastructure Cost: The system's internal battery pack is charged via a standard AC outlet (e.g., 208-240 volt) or with a charging station. This simplifies the installation requirements because it allows for leveraging an existing/easily installed low-cost electric outlet wherever it is convenient.

Charging Station Cost: The systems cost includes 1+ charging ports and an integrated battery pack, so the unit cost is higher than a fixed charging station. The unit can eliminate the need to install multiple charging stations, so the cost comparison sharply improves.

Operating Cost: Option to lease the unit. MUD property receives revenue (net after electric and charging network provider fees)

Example VCI-MUD Project Innovative Technologies Demonstrations:

FreeWire Technologies Mobi

Source: FreeWire Technologies

TECHNOLOGY OVERVIEW

Mobile charging station with one or more charging ports that uses an integrated battery pack. Instead of installing fixed charging stations, the system moves to wherever EVs are parked. The units can be used in dedicated or shared parking spaces and for long-dwell parking situations (e.g., overnight parking at home) and shorter stays (e.g., short resident charge sessions or visitors). The system's internal battery pack is charged via a standard AC outlet (e.g., 208-240 volt) or with an EV charging station. This simplifies the installation requirements because it allows for leveraging an existing/easily installed low-cost electric outlet wherever it is convenient. The systems have an onboard drive system to move to the next EV charging location or internal battery recharging outlet. Does not require charged vehicles to be moved. This approach can be used either to evaluate vehicle charging demand or as a long-term solution. Systems have mobile app interface for users to initiate/manage charging sessions. Systems have web-based interface for MUD property manager interface and usage data access.

FREEWIRE

For more information, visit: VCI-MUD.org

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