CTME Final Report

Recharge Power: Electric Vehicle Station and Vehicle Detection Monitor "MAPS/GPS APPLICATION FOR VEHICLE DRIVERS"

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Recharge Power CTME Project
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Description of Problem:

Between 2010 and 2012, over a dozen major automobile manufacturers will be introducing electric vehicles (EV's) and plug-in extended range electric vehicles (PHEV's) that will require electrical charging infrastructure in commercial parking garages and at municipal curb-side parking locations, hospitals, universities, shopping malls and other public parking environments. The ability to reliably locate and find charging stations will be critical for drivers of electric vehicles who need to recharge their batteries. Furthermore, the ability to determine whether these charging stations are actually available will be equally important. Recharge Power has developed proprietary technology to support this need of electric vehicle drivers, and it is equally applicable to drivers of gasoline-powered vehicles looking for general parking. In commercial parking garage applications, it will inform drivers about which garages have charging stations and whether they are available. In addition, a global database will monitor and record all transactions with charging stations, vehicle drivers, and host parking garage locations through advanced wireless communications and web portals. The integration of GPS location/mapping technologies support by CTME will provide drivers new ways to locate charging stations and parking spaces, track their availability, and place prepaid reservations.

Approach to Solution:

Recharge Power has developed an advanced mapping/GPS application that is integral to the implementation of charging stations for electric vehicles. The GPS application communicates with equipment located in commercial parking garages or at curbside parking spaces, and it is tied into a global transaction database.

- Locates parking spaces in garages or on streets; shows vacancy status.
- Provides driving and walking direction to parking locations.
- In commercial parking garage environments, allows reservations to be made for special event parking

Results Achieved:

Since the last Progress Report dated August 2, 2010, Recharge Power has completed the program development of the GSP mapping and reservation system, integrate it with the global RP database, and begin to install charging stations for trials in more than a dozen locations including the parking facilities at Cumberland Development, University Hospitals, Case Western Reserve University and the Cleveland Clinic.

The back-end communication system between the charging units and a global database, which operate over Ethernet, WIFI or cellular networks, has been completed. It is used for monitoring the occupancy status at charging stations and for recording other transactional information such a start time, end time, kilowatt usage, payment method, fees charged, and costs.

Occasional users can access the mapping/GPS application on any Internet enabled device. Drivers with Recharge Power issued subscription cards, which employ prepaid balance accounts similar to an EZ Pass, are able to reserve parking and charging spaces for special event parking where such service is offered by commercial parking garage operators.

The mapping/GPS system, which has been introduced with Recharge Power's dual-vehicle 240V charging stations, form the technology platform for future applications in the areas of shore power stations for long haul diesel trucks, RV camp ground reservations for space and power, and on-street parking access and enforcement.