CONNECTICUT EV ROADMAP TECHNICAL MEETING

Time of Use (TOU) Rates

Presenter: Kevin George Miller, Director, Public Policy
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Supporting an Electric Fueling Network

Charging happens wherever vehicles are parked and is supported by a diverse ecosystem including:

- EV Drivers
- Energy Companies & Utilities
- OEMs Auto/Bus/Truck
- Smart City Planning
- Public Fleets & Transit
- Businesses
- Network Operators
- Autonomous Providers
- Real Estate Groups
- Private Fleets
- Ride Hail/Car Share Services
- Building Codes
- Oil & Gas MNCs
- Governments
- Private Fleets & Transit

...and out of town.
“Use Case” Drives the Grid Value of EV Chargers

Aggregated Charging Profiles by Use Case

- Workplace
- Fleet
- Home
Networked Charging = Smart Charging

+ Metering within networked EV charging stations can provide valuable and accurate data on EV charging behaviors
  - Avg 11.4 kWh/weekday for home charging
  - Xcel MN pilot to implement TOU rate with smart EVSE without installing additional meter

+ Demand Side Management
  - EV TOU rates can be very effective in encouraging EV drivers to charge off-peak
  - Ex: Customers charged 3x more off-peak
  - Load management utilizing charging station network also can achieve similar results

+ Revising regulatory metering requirements is valuable for multiple policy mechanisms (e.g., LCFS, Clean Peak, Voluntary Credit Market)
Align Interests to Send Accurate Price Signals

**EV Drivers**
- Availability
- Consistent Experience
- Convenience
- Seamless Payment

**Site Hosts**
- Optimize utilization
- Limited Administration
- Remote Diagnostics
- Seamless Transaction

**Utilities**
- Beneficial Load
- Grid Benefits
- Load Management
- Seamless Integration

**Regulators**
- Environmental Goals
- Widespread Benefits
- Equitable Access
- Seamless Operation

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Maintaining Flexibility for EVSE Pricing is Critical

+ UCLA Luskin Center study of 400,000 workplace charging sessions

+ Key insights include:
  • Free charging is the most inefficient
  • Of paid policies, straight price per kWh leads to least efficient usage of EVSE.
  • When graduated rates are in effect, users prefer to stop charging right before the increased hourly rate begins
  • Drivers are elastic in response to price
  • “Hourly then Penalty” encourages the most efficient usage of the EVSE

Source: [http://innovation.luskin.ucla.edu/sites/default/files/Full%20Report.pdf](http://innovation.luskin.ucla.edu/sites/default/files/Full%20Report.pdf)
Thank You

For further information on this topic, please contact Kevin George Miller: kevin.miller@chargepoint.com