

The Tendril Platform and Electric Vehicle Integration

As electric cars – known in the industry as Electric Vehicles – are brought to market, charge management, load control and rate programs are growing concerns for utilities and their customers. Residential charging of Electric Vehicles presents a new set of grid management challenges for utilities — chief among them is the question of what happens when consumers plug in their Electric Vehicles all at once.

The energy consumed by charging an Electric Vehicle is roughly equivalent to the energy load of an average house running a dryer during peak load time. If a utility's entire customer base purchases Electric Vehicles and plugs them in at the same time, that utility's energy load would essentially double.

Tendril is working with a number of Electric Vehicle and charging station manufacturers to understand the early technical challenges and build out the first standards-based networked Electric Vehicle charging infrastructure integrated with Tendril's platform, to provide whole home energy management solutions:

- Tendril has already integrated with electric vehicle charger manufacturer AeroVironment and is in discussions with others.
- Tendril will soon launch a pilot with utility partner Kansas City Power & Light that integrates Electric Vehicle charging station management, and is in discussions with several current and potential customers about electric vehicle integration.
- Tendril has demonstrated its platform and solicited input from numerous auto and Electric Vehicle manufacturers.

- **Tendril Electric Vehicle Application Capabilities:**
 - Electric Vehicle owners can start or stop charging manually using Tendril's web portal or mobile application for smartphones – enabled by the Tendril platform.
 - Consumers also have the option to “set and forget,” selecting a pre-defined program to charge either the fastest, cheapest, greenest or set a rule — similar to the functions on a programmable thermostat.

- **Benefits to Utilities:**
 - The platform enables utilities to understand where in the grid distribution network Electric Vehicles are located in order to proactively manage hot spots of growth in energy consumption.
 - Utilities also benefit from the ability to easily and effectively communicate with electric vehicle owners regarding planned Demand Response and Direct Load Control events.
 - The platform supports Electric Vehicle-specific rate programs and incentives for charging during off-peak versus peak times.
 - The platform also establishes Electric Vehicles as another manageable load in addition to other components of the home, including water heaters, appliances, etc.

- **Benefits to Consumers:**
 - The platform shows energy use for charging in real-time as a component of whole house energy consumption and bill, so Electric Vehicle owners are more aware of the total cost of ownership.
 - Electric Vehicle owners can access and interact with their energy usage data in a variety of ways, including the web portal, smartphone applications, email or direct mail.



The Power is Yours

About Tendril

Tendril is the Energy Platform company, delivering end-to-end consumer engagement products, applications and services powered by Tendril Connect™—an open, secure and scalable platform that takes the complexity out of the Energy Internet and creates a dialogue between energy service providers and their customers. Delivering consumer engagement software, in-home products and applications as well as easy to integrate utility solutions such as Demand Response and Energy Efficiency, Tendril offers unparalleled insight into energy decisions, making the Energy Marketplace a reality. The company is venture backed by VantagePoint Venture Partners, Good Energies, RRE Ventures and GE. For more information, visit www.tendrilinc.com.