



MEMORANDUM

TO: Mayor and Council Members

CC: Spencer Cronk, City Manager

FROM: Jackie A. Sargent, General Manager *JAS*

DATE: January 28, 2020

SUBJECT: Electric Vehicle Progress Update (Resolution No. 20190509-020)

The purpose of this memo is to respond to Council Resolution No. [20190509-020](#), which included direction to the City Manager to provide the City Council with a progress update by February 1, 2020, of lessons learned from electric vehicle (EV) grid integration efforts, demand response programs, and EV rate structures.

Austin Energy has been an industry leader and innovator among electric utilities in EV programs since 2007, including being named 2019 EV Utility of the Year by Plug-in America. Many other utilities are now following Austin Energy's lead, realizing the business opportunities and best practices that exist as EVs grow in popularity. Austin is averaging a 39% increase in EVs annually over the past five years, with now over 10,000 EVs on the road with strong continued growth in adoption and models available.

EV Grid Integration Efforts

In February 2019, Austin Energy and Pecan Street Inc. launched Texas' first vehicle-to-grid (V2G) research and testing center to develop and pilot hardware and software innovations to examine the commercialization of V2G applications. The V2G initiative is part of Austin Energy's Sustainable and Holistic Integration of Energy Storage and Solar Photovoltaics (SHINES) project, in collaboration with grant-funding from the U.S. Department of Energy and the State of Texas.



Figure 1: Nissan LEAF 10kW V2G Demonstration at Pecan Street Lab, part of Austin Energy SHINES Project

SHINES integrates solar photovoltaic systems with two utility-scale energy storage systems and multiple customer-sited energy storage systems, smart inverters, real-time data feeds, and a newly developed distributed energy resource software platform to optimize energy use. The project seeks to determine viable solutions to help the local grid integrate more solar power in a reliable and cost-effective manner.

This research is still underway and poses many technological challenges that the project team is examining. Results are expected later this year, at which point Austin Energy will brief the Austin Energy Utility Oversight Committee.

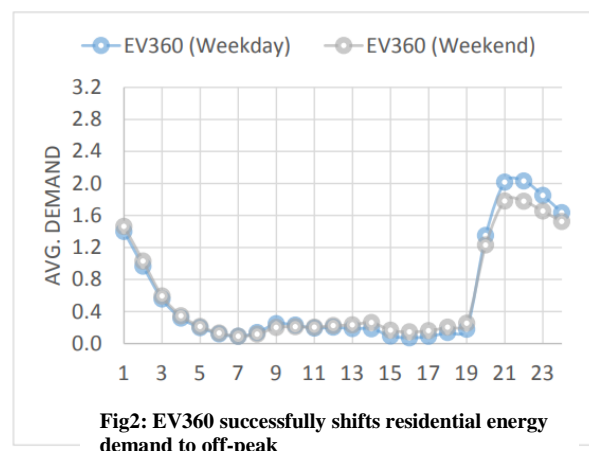
Demand Response Programs

Demand response is a means of shifting or reducing electricity demand away from peak usage periods in order to achieve cost benefits or increased grid reliability. These programs can be a resource to help balance electric supply with demand. Austin Energy first integrated EVs into its demand response programs in 2013 as part of a federal grant from the U.S. Department of Energy that managed EV and air conditioning peak consumption of pilot project participants. This project allowed for the integration of multiple platforms of thermostats and electric vehicle charging stations to be controlled in a single platform using open standards.

Building upon the completed pilot, Austin Energy reconfigured the residential EV charging station rebate to include a higher tier rebate for smart, connected residential charging stations for future applications.

A request for proposals was put forward to take a more comprehensive approach to Distributed Energy Resource integration and management, expanding the power partner thermostat program to integrate other technologies, including electric vehicle charging. This sets the contractual language in place to include EV charging as new technologies and offerings become available.

In addition to demand response, Austin Energy's EV charging program options have other mechanisms aimed at benefitting the electric grid and reducing costs for customers. The EV360 Plug-Electric Vehicle Charging Subscription pilot program offers charging options for residential customers with an integrated off-peak home and public charging program. This time-of-use EV pilot a flat-rate subscription, starting at \$30 per month, with an on-peak residential charging adder, measured by a meter connected to an in-home charging station.



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The EV360 pilot program was designed to:

- shift residential charging from peak periods to off-peak thus reducing cost and carbon from charging
- add to electric grid reliability in critical peak times
- subscribe home EV charging with 100% renewable energy credits
- allow for full cost recovery and a sustainable utility business model
- support community/utility climate protection and clean air goals
- leverage advanced data analytics to develop customized marketing materials and increase customer satisfaction.

Austin Energy published a white paper¹ as part of the EV360 pilot which documented lessons learned and best practices. Additionally, Austin Energy established an Electric Vehicle Connection Guide for Residential Customers in its interconnection guide for connecting to EV360. The guide contains information on application processes, technical requirements, applicable codes, metering configurations, and rate structures.

EV Rate Structures

Austin Energy has multiple established rate structures for EV charging:

- flat rate subscription of \$4.17/month pilot for unlimited charging at over 850 (and growing) Level 2 charging ports
- non-subscription rate of \$2.00/hour pilot for these stations
- \$0.21/minute for the use of DC Fast charging stations
- residential “Off Peak” Electric Vehicle Charging Subscription Pilot Rate, starting at \$30 per month

Austin Energy is currently developing an E-mobility rate schedule, with a focus on fleet applications and third-party charging providers. This rate schedule is being developed in collaboration with Capital Metro to electrify buses and will be extended to other transportation electrification business cases.

Austin Energy is consistently evaluating rate structures to ensure cost recovery, economical grid integration, and customer satisfaction in this evolving market.

Next Steps

Later this year, pursuant to Resolution No. 20190509-020, Austin Energy will present its annual briefing to the Austin Energy Utility Oversight Committee on EVs that will include the topics listed:

Austin Energy will submit a staff briefing, as part of Austin Energy's regular reporting to the Utility Oversight Committee, annual updates on the status and progress of Austin Energy's transportation electrification programs, including the public EV charging network, fleet

¹ [<https://austinenergy.com/wcm/connect/b216f45c-0dea-4184-9e3a-6f5178dd5112/ResourcePlanningStudies-EV-Whitepaper.pdf?MOD=AJPERES&CVID=mQosOPJ>]

electrification, EV building codes, rebates for EV programs, outreach, new plans and strategies to reach multifamily and low-income households, and electrifying new mobility services.

If you have any questions, please contact Jeff Vice, Austin Energy's Director of Local Government Issues, at 512-322-6087.

Cc: Lucia Athens, Chief Sustainability Officer
Jennifer Walls, Fleet Officer
Rob Spillar, Director, Austin Transportation Department