



US Department of Energy-EV Future Initiative

Karl Popham

Manager, Electric Vehicles & Emerging Technologies



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About Austin Energy

- 3rd Largest City Owned utility in the U.S.
- Fully integrated (generation, T&D, customer service)
- Established in 1895 with a culture of civic engagement & innovation

Electric Vehicles & Emerging Technologies Team



Today's Speaker: Karl Popham,
Manager EVs & Emerging Technologies, Austin Energy



E-Visionary
City of the Year 2020



FAST COMPANY



EVs for Schools



Plug-in America
EV Utility of the Year 3

Electric Grid Industry Trends

The last 100+ Years

Centralized



Decentralized

“Just in Time”
Generation



Energy Storage

Transportation –
Internal Combustion
Engine (Gasoline)



Electric Vehicles

Fossil Fuel Reliant



Renewables



Before-and-after photos show dramatic decline in air pollution around the world during coronavirus lockdown

What happens when you remove millions of tailpipes from your city's roads?

New Delhi, India



Photo Credits: Before DOMINIQUE FAGET/AFP via Getty Images After Yawar Nazir/Getty Images

Los Angeles, California

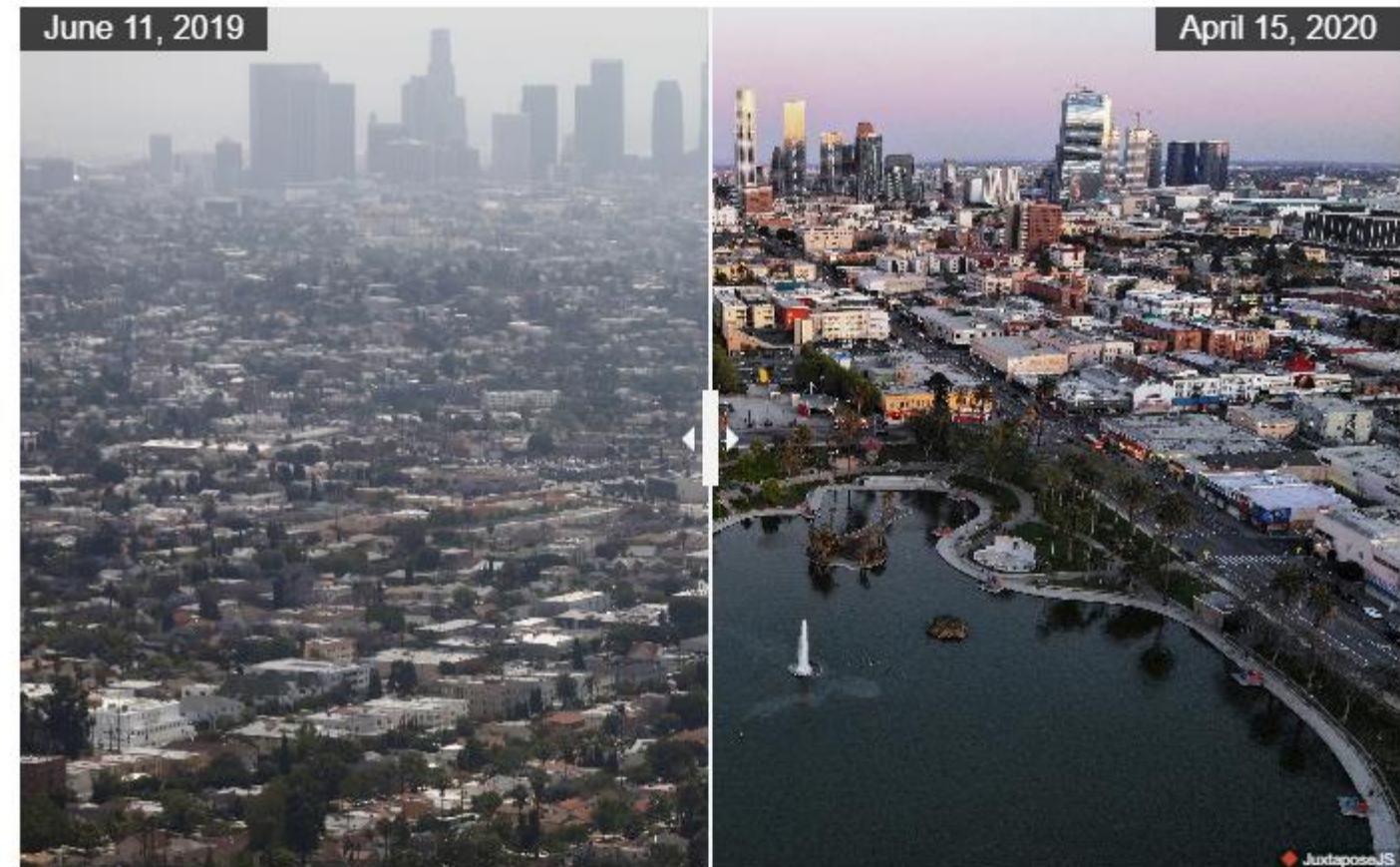
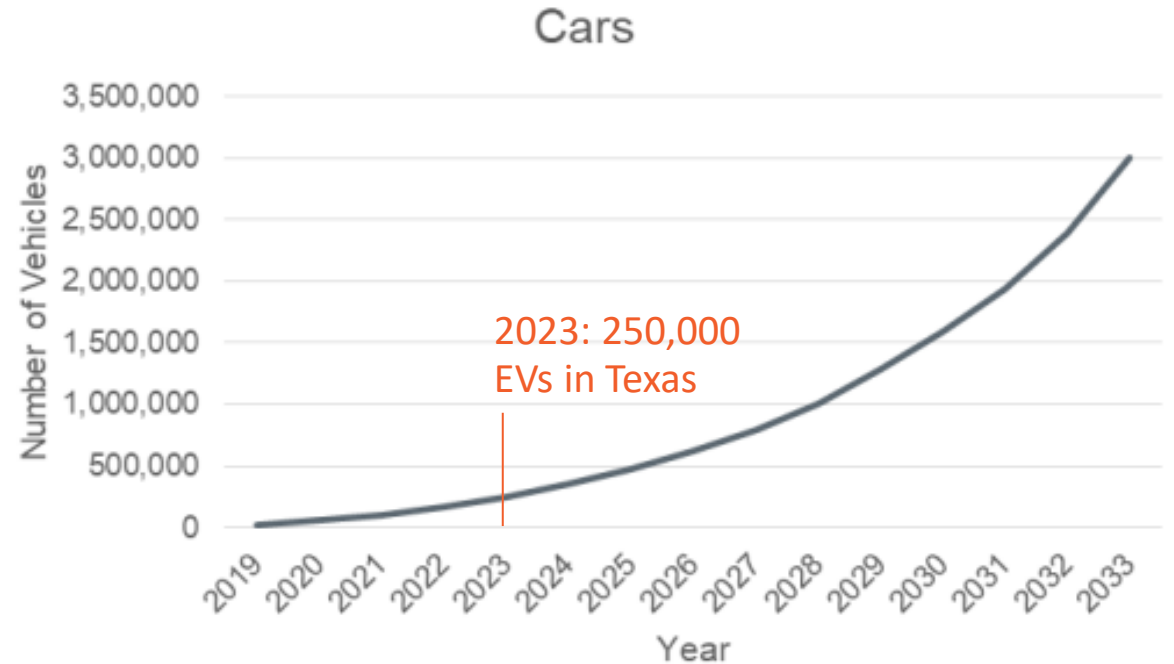


Photo Credits: Before Mario Tama/Getty Images After Mario Tama/Getty Images

Projecting to 2023 – Adoption

- Estimated **52,300** EVs in Austin by 2023
- 1EV=\$385/year new utility Revenue or \$20.1M/year
 - ERCOT LTSA estimates Texas EV adoption as 250,000 in 2023
 - Austin has held 21% of Texas' EVs market share for the last 2.5 years
 - At least 85% of these will be pure battery-electric vehicles



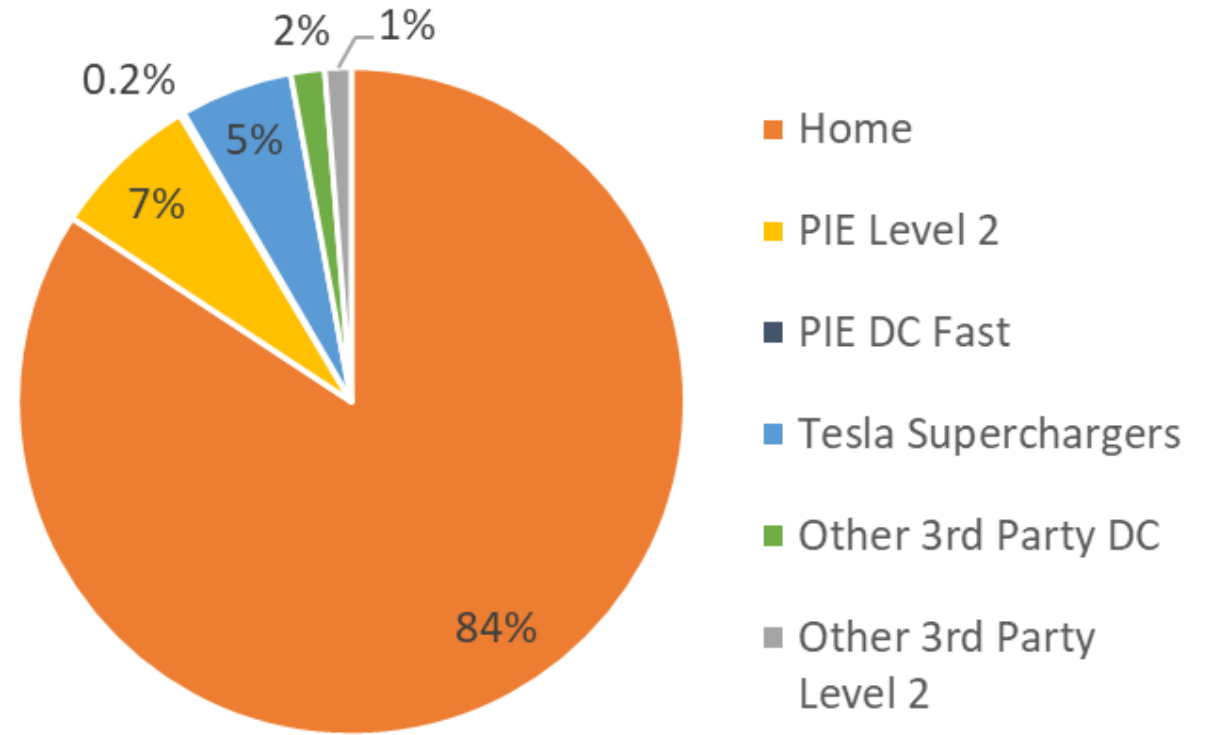
ERCOT 2018 Long-Term System Assessment – scenario planning for EV adoption in Texas



Sources: ERCOT LTSA;
EPRI EV registration data

Austin's EV Charging Ecosystem

84% of charging happens at home



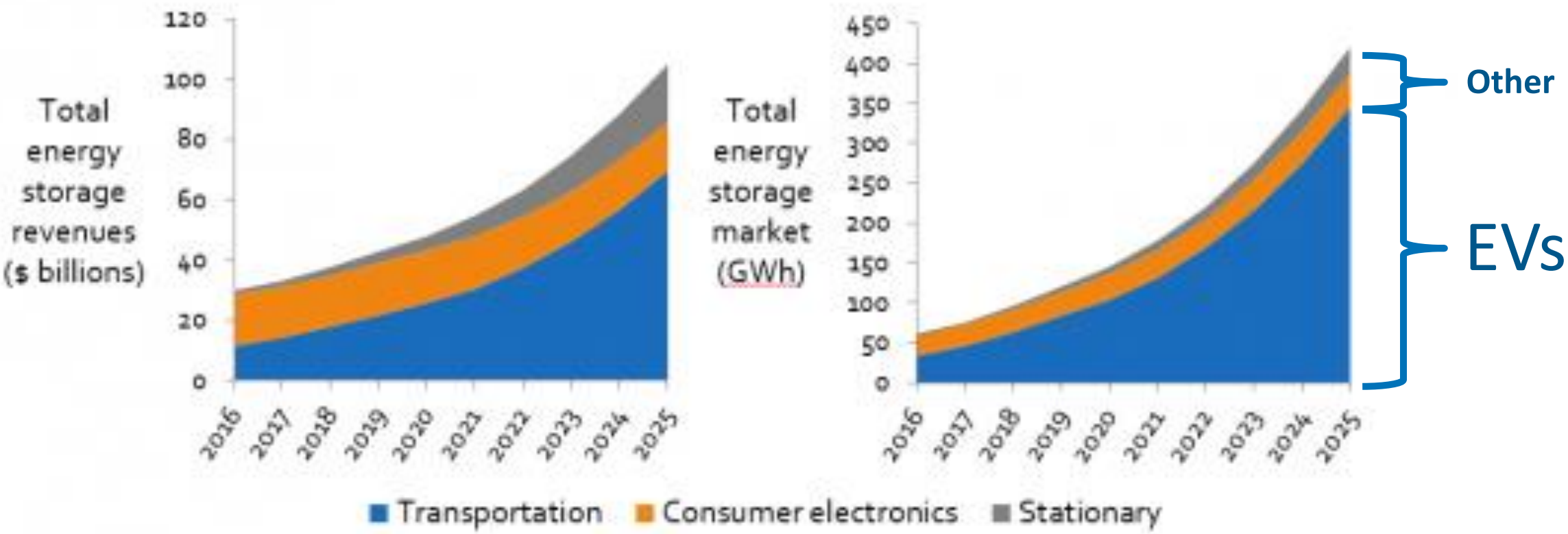
AE makes revenue off all charging, regardless of type

*Estimated using data for March 2019



EVs will drive the energy storage market

Energy Storage Market Will Surpass \$100 Billion by 2025



Source: Lux Research Report "Quantifying Growth Opportunities in the \$105 Billion Energy Storage Market"

Utility EV Investment Portfolio



Austin Energy has over 32 initiatives categorized by:

- ✓ EV Chargers Live/Work
- ✓ High-Speed Chargers
- ✓ Ratepayer/Grid Benefits
- ✓ Fair Electric Rates
- ✓ Truck/Bus Fleets
- ✓ New Mobility Services
- ✓ Low-Income Community Benefits
- ✓ Open/Competitive EV Charging Market
- ✓ Engage Stakeholders
- ✓ Educate the Public



Austin Energy EV Customer Programs

- **Plug-In EVerywhere™ Driver Program**
 - \$4.17/mo unlimited charging at all 1000+ Level-2 ports for members
 - **New** \$0.21/min DC Fast charging connection
- **Plug-In EVerywhere™ Infrastructure Rebate Program**
 - Up to \$1,200 rebate for home Level-2 wi-fi enabled (\$900 non wi-fi)
 - Up to \$4,000 rebate for commercial/public Level-2 stations
 - Up to \$10,000 rebate for public DC Fast stations
- **Fleet & Public Infrastructure Pilot Tariff**
 - **New** optional EV infrastructure commercial tariff promotes efficiency and high usage
- **EV360 Pilot**
 - Flat rate of \$30/mo for off peak home charging + Plug-In EVerywhere
- **EVs for Schools**
 - EV charging stations for staff, students, parents, and visitors
 - **New** - curriculum is now available online nationally and in Spanish
- **E-Ride Program** Up to \$400 rebate from the purchase of electric bikes, includes individuals and bike fleet applications

Powered By GreenChoice® 100%
renewable wind power

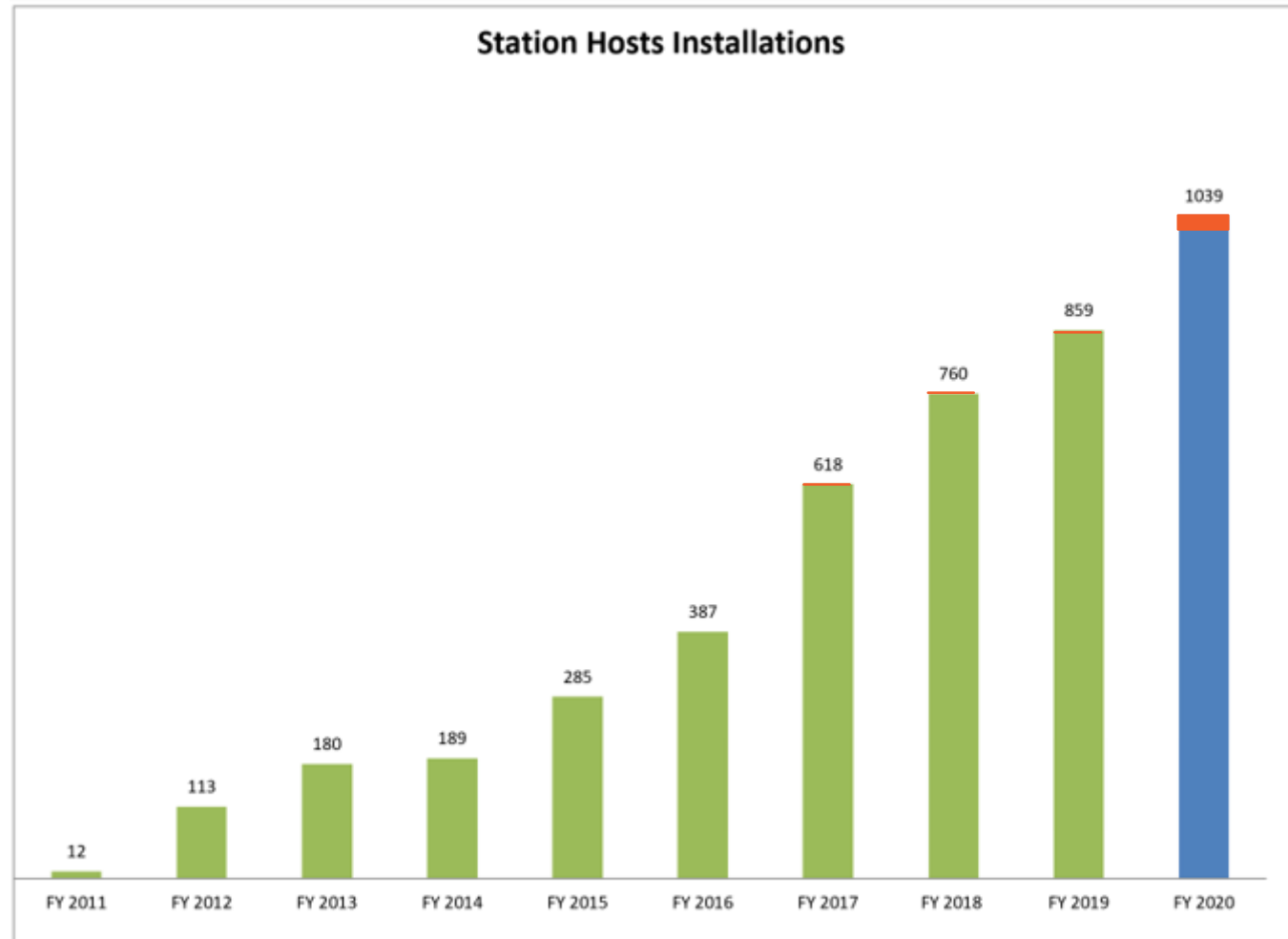


Akins High School teacher, Jay H., plugs in his EV at an “EVs for Schools” charging station



EV Host Installations - Austin

Public Charging Program



180 Charging
Port Increase
(includes 26
DC Fast)

1,000+ Port
Milestone
Achieved

289 Locations

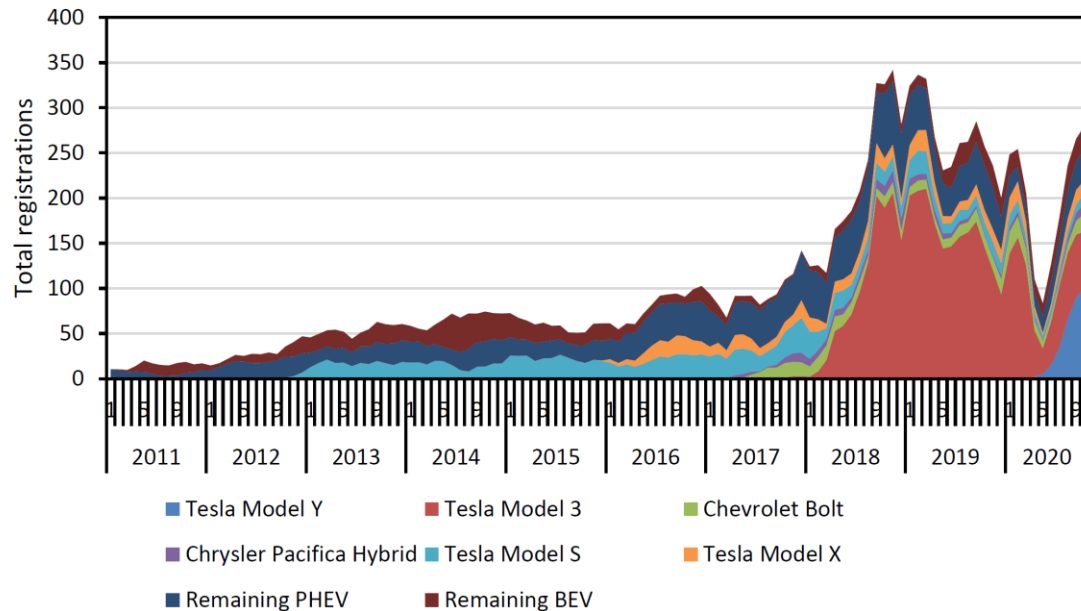


1039 charging ports have been installed at 289 locations to include retail, workplace, multifamily, and fleet

EV Registrations - Austin

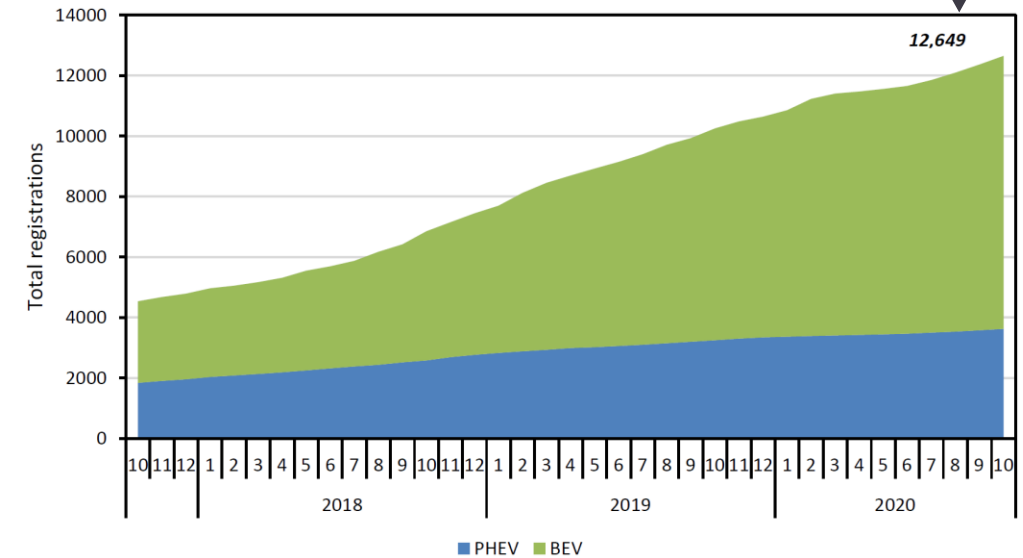
Bloomberg Cities
Climate Challenge:
5,000 new EVs on the
road metric achieved

Monthly registrations by vehicle



Data provided quarterly from EPRI for Travis and Williamson County.

Cumulative registrations by type



12,649 EVs consume approx. 38 GWh/year.
Data provided from EPRI for Travis and Williamson County

Approximately a quarter of regional EV drivers are
enrolled in Austin Energy's Plugin Everywhere
Subscription Program



City of Austin Fleet Electrification



- Over 250 light-duty EVs currently in COA fleet, tracking toward 330 phase 1 goal
- City Fleet EV phase 1 expected to save the city \$3.5M and 12,000 metric tons of CO2 over 10 years
- Deploying charging infrastructure at COA facilities to support electric fleet
 - Future proofing new COA buildings



Capital Metro Bus Electrification

- Cap Metro collaborated with Austin Energy in the development of their North Ops Bus Depot to build a smart charging facility for over 200 electric buses
- Includes 400kW enroute overhead charging infrastructure
- Cap Metro currently has 12 battery-electric buses; *Passage of Project Connect is expected to accelerate timeline*
- By collaborating early in the process, Cap Metro was able to future proof the electric capacity of their facility to expedite expansion while reducing costs
- Austin Energy has also developed a Fleet & Public Charging Pilot Rate designed to encourage high usage and efficiency while ensuring full cost recovery for Austin Energy



#LoveStEVie

StEVie, the EV loving T-rex: Designed from the ground up to be social-media savvy to include “viral moments” while promoting core values of transportation electrification





ets19

THOUGHT LEADERS



Gil Quiniones

President & CEO

New York Power Authority



StEVie

EV Scientist, EV-Loving T-Rex

Austin Energy



Mary Kipp

President & CEO

El Paso Electric Company



Steve Westly

Founder & Managing Partner

The Westly Group



Sayun Sukduang

President & CEO

ENGIE Resources



Jackie Sargent

General Manager

Austin Energy



65 Million Years



Dealership Engagement & Online EV Buyer's Guide

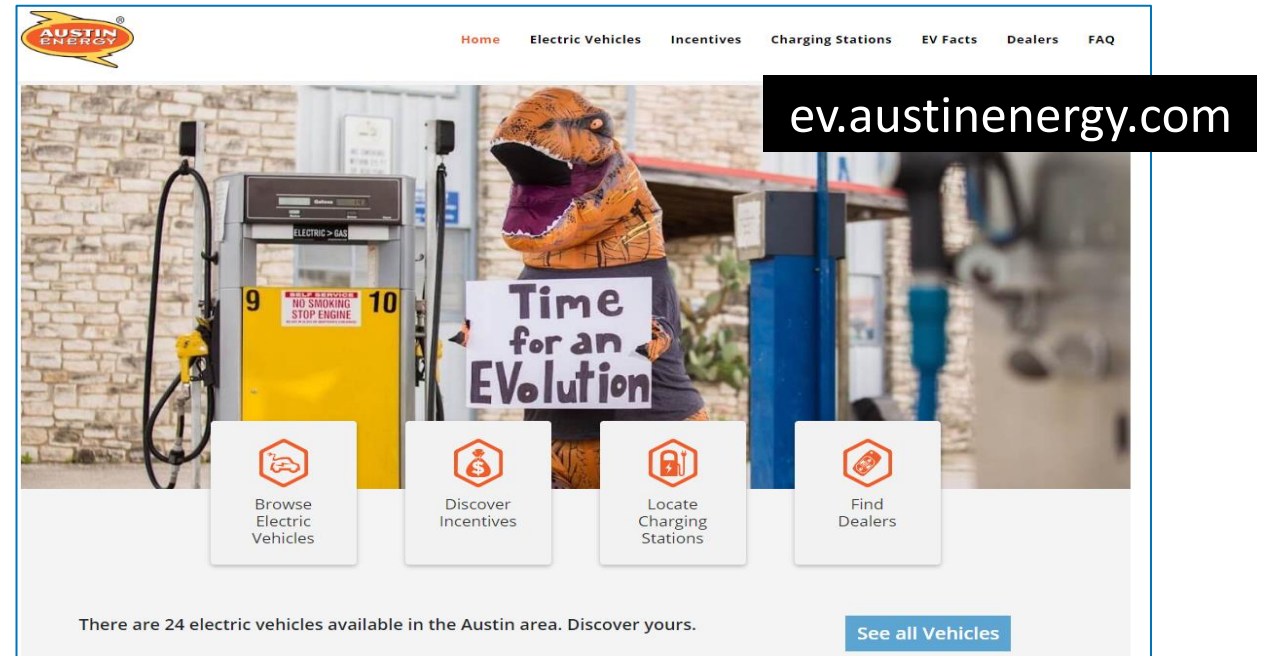
- **Online EV Resource & Buyers Guide**

- Enhance the EV shopping & charging experience
- Aggregated source of EVs for sale in Austin
- Phase 2 launched in November with “real-time” new/used EV inventory

- **Partnerships with local car dealerships**

- Boost EV sales through charging education

- **Supported by Bloomberg Climate Cities Challenge**



1. Awareness
Utility marketing to
create awareness

2. Purchase
Dealer sales and
training tool that
reinforces strategy

3. Ownership
Consumer tool for
every EV brand
simplifying electric fuel

4. Experience
Easy to visualize
fuel branding at
every station

EV Readiness

Goals

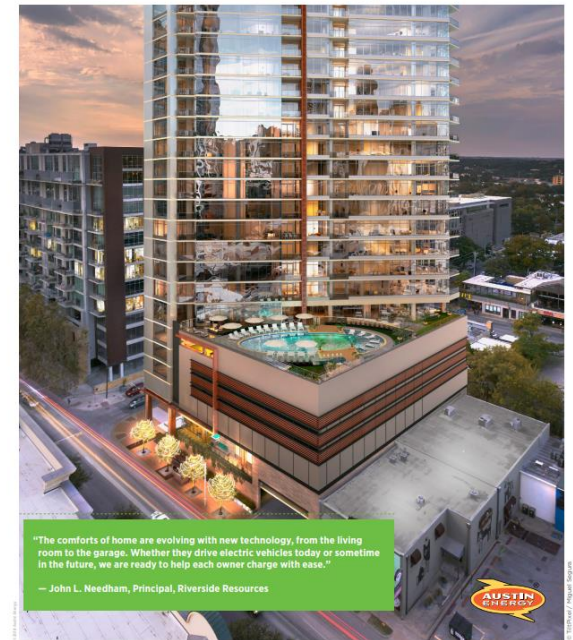
- Make at least 10% of all new parking spaces EV Ready
- Significantly reduce future costs for charging infrastructure

Requirements

- Installation of conduit/raceway
- Service Panel Capacity
- Distribution Transformer Capacity
- Sizing – (min 40-amp, 240 Volt)
- Standards based (Includes National Electrical Code Article 625 and Texas Accessibility Regulation)



CASE STUDY
FIFTH & WEST RESIDENCES
100% ELECTRIC VEHICLE READINESS



Austin case study on 100%
EV Ready

Austin Climate Equity Plan - Transportation Electrification

Draft Goals

Goal 1: By 2030, 40% of total vehicle miles traveled in the City of Austin are electrified and electric vehicle ownership is diverse culturally, geographically and economically. This translates to approximately 460,000 electric vehicles on the road.

Goal 2: By 2030, Austin has compelling and equitably-distributed charging infrastructure that is a mix of level 1, 2, and DC fast charging to accommodate 40% of total vehicle miles traveled in the city. This translates to 226 megawatts of electrical load and could mean over 37,000 charging ports.

Goal 3: The Austin-Round Rock-San Marcos MSA will be a global leader in transportation electrification by adopting policies and technologies that maximize the economic and health benefits for all while evolving with and defining the growth of this emerging industry.

Today:
~1% VMT

Goal:
40% VMT
by 2030



Equity & Inclusion – “EVs for Schools” Update

“EVs for Schools” Program, pilot prioritized deployment and outreach for economically disadvantaged students at title-one schools

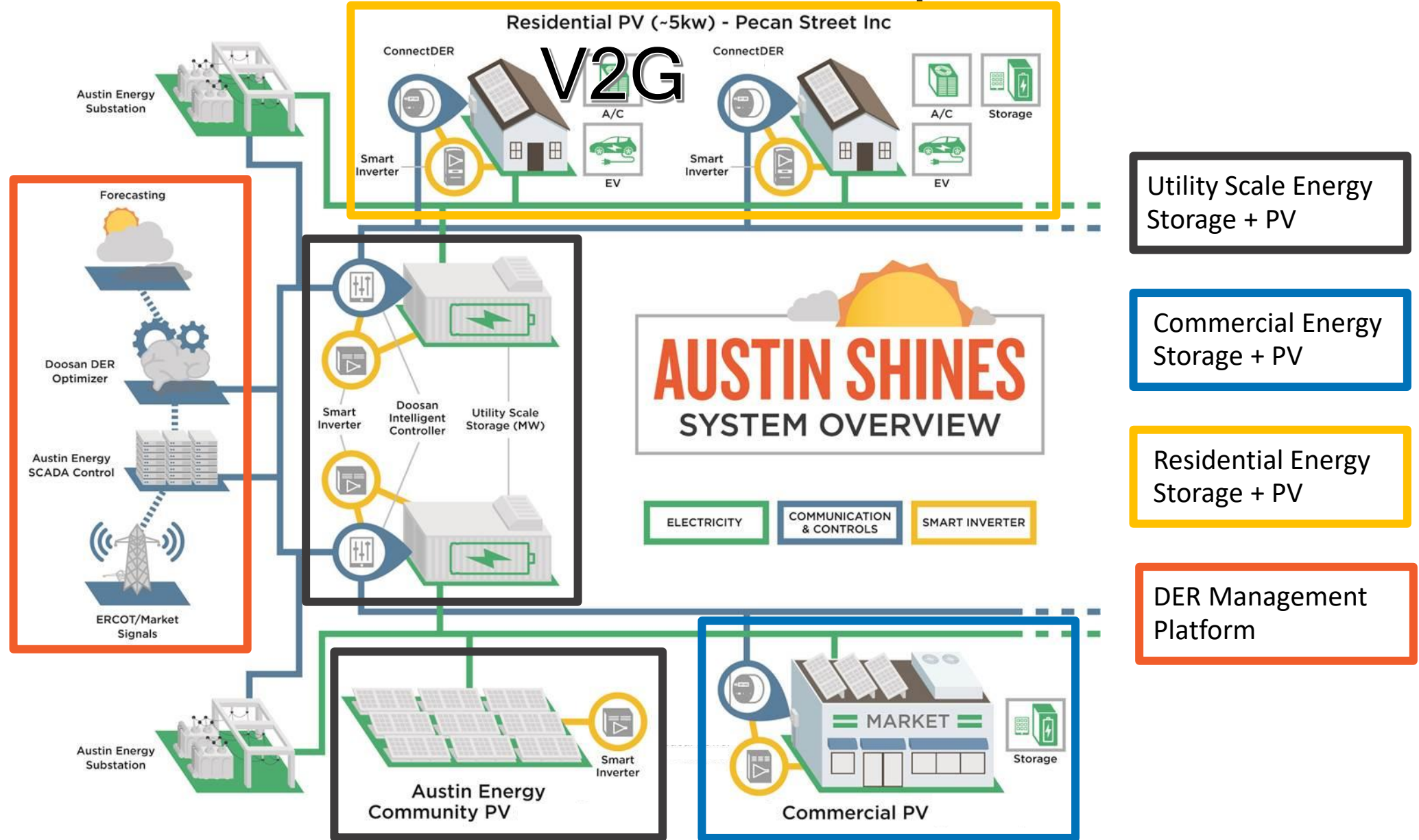
- 795 teachers at 122 schools in Central Texas are utilizing the EV lessons
- As a response to COVID19, curriculum was made online and free of charge to families locally and nationally to support at home learning
- Now offered in Spanish
- 6,850+ students experiencing the living lab with 65% of those students economically disadvantaged
- Companion Virtual Reality (VR) experience
- Curriculum incorporated by other entities nationwide to include Madison Gas and Electric, Southern California Edison, Metropolitan Area Planning Council of Boston, and Sacramento area schools

Austin American-Statesman

Charging stations at schools to power electric vehicles, student minds



Austin SHINES Concept





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austinenenergy.com/go/shines



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