



AMERICAN  
PUBLIC  
TRANSPORTATION  
ASSOCIATION

# **Transit Agency and Utility Partnerships: Best Practices and Strategies for Successful Electric Bus Deployments**

May 8, 2020

# Welcome



**Lisa Jerram**

Director, Bus Programs and Emerging Vehicle Technologies

**American Public Transportation Association**

Washington D.C.



**Kellen Schefter**

Director, Electric Transportation

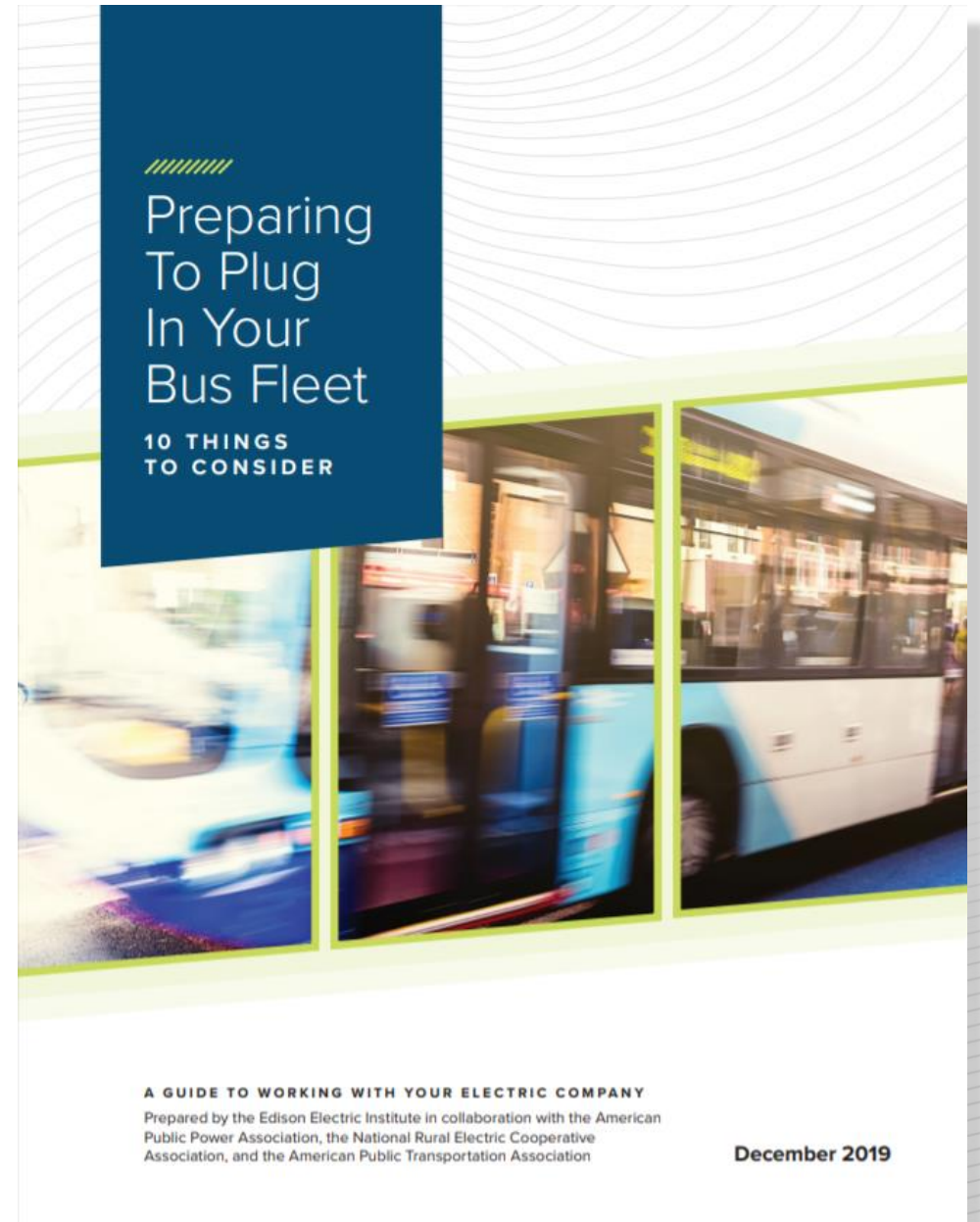
**Edison Electric Institute**

Washington D.C.



# Joint EEI-APTA Guide: *Preparing To Plug In Your Bus Fleet*

[https://www.apta.com/wp-content/uploads/PreparingToPlugInYourBusFleet\\_FINAL\\_2019.pdf](https://www.apta.com/wp-content/uploads/PreparingToPlugInYourBusFleet_FINAL_2019.pdf)



# Moderators



**Lisa Jerram**

*Director, Bus Programs and Emerging Vehicle Technologies*

**American Public Transportation Association**

Washington D.C.



**Kellen Schefter**

*Director, Electric Transportation*

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# Panelists



**Cameron Freberg**  
*Utility Strategist*  
**Austin Energy**  
Austin, TX



**Andrew Papson**  
*eMobility Advisor*  
**Southern California Edison**  
Los Angeles, CA



**Kim Winslow**  
*Senior Director of Energy Solutions*  
**Evergy**  
Kansas City, MO

# Panelists' Presentations

# Bus Electrification in Austin, TX

Cameron Freberg  
Utility Strategist







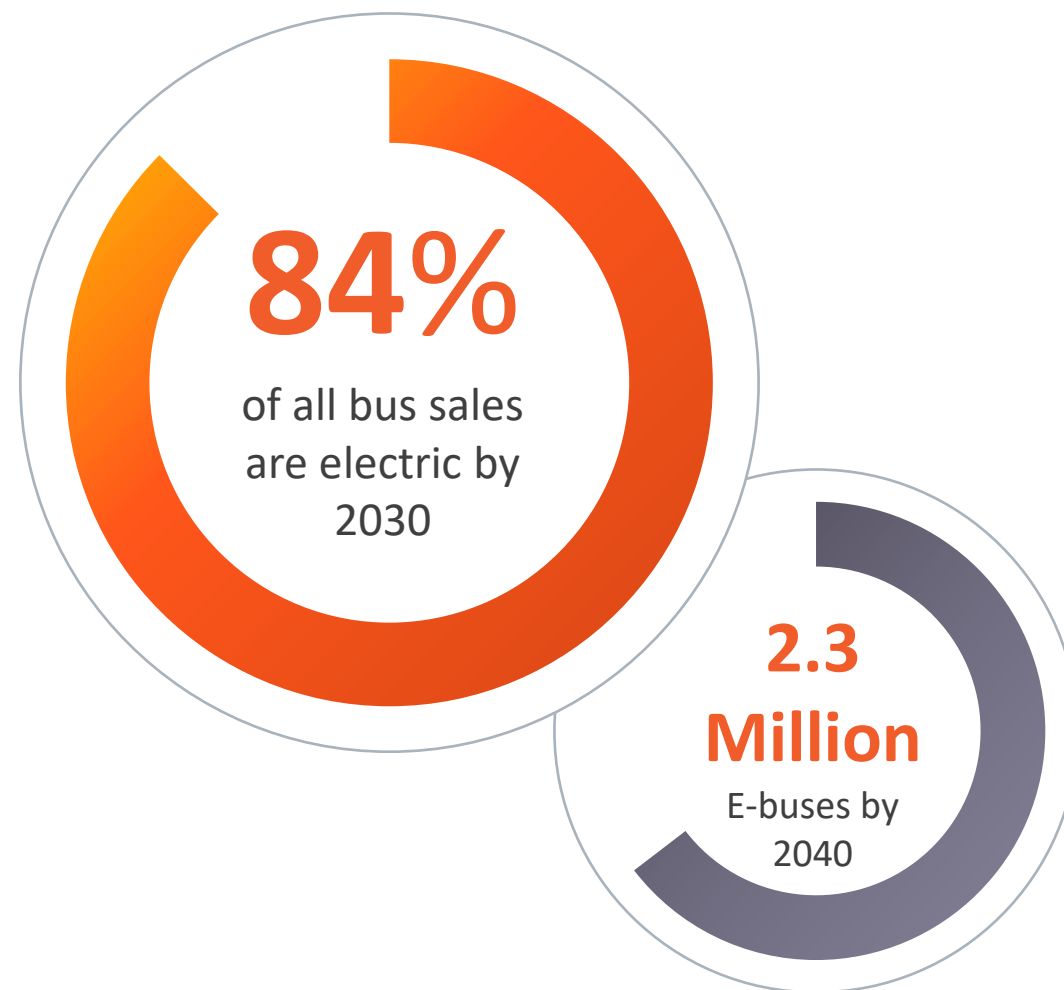
CITY OF AUSTIN  
POWER PLANT

rothenhealth



# Global Electric Bus Projections

- Electric Buses are already at cost parity with Diesel for TCO at 37,000 miles/year utilization
- Creative financing could be a driver to accelerated adoption



# Capital Metro Bus Fleet

- Total of 368 buses in Cap Metro Fleet
- Charging Depot in development for up to 200 electric buses
- Charging speeds and technologies could vary

**22MW**

Potential Load of  
368 buses at 60kW

**100%**

Bus Electrification



# Utility Levels of Involvement

- **Key Accounts**
  - Reliability Study
  - Dual Feed Assessment
- **Electric Service Delivery**
  - Site Assessment
  - Site Plan Submitted to Verify Easements and Clearances
  - Order of Magnitude Costs
- **Rate Analysis**
  - Recouping Infrastructure Costs
  - Distribution Costs, Load Profiles, Bus Capacity
  - Rate Analysis
- **Complex Metering**
  - Austin Energy owns transformers and equipment up to the disconnect





# Thank You!



**Cameron Freberg**

Electric Vehicles & Emerging Technologies  
Austin Energy

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# Southern California Edison Partnering with Transit Agencies for EV Bus Fleets

*APTA & EEI webinar, Transit Agency and Utility Partnerships*

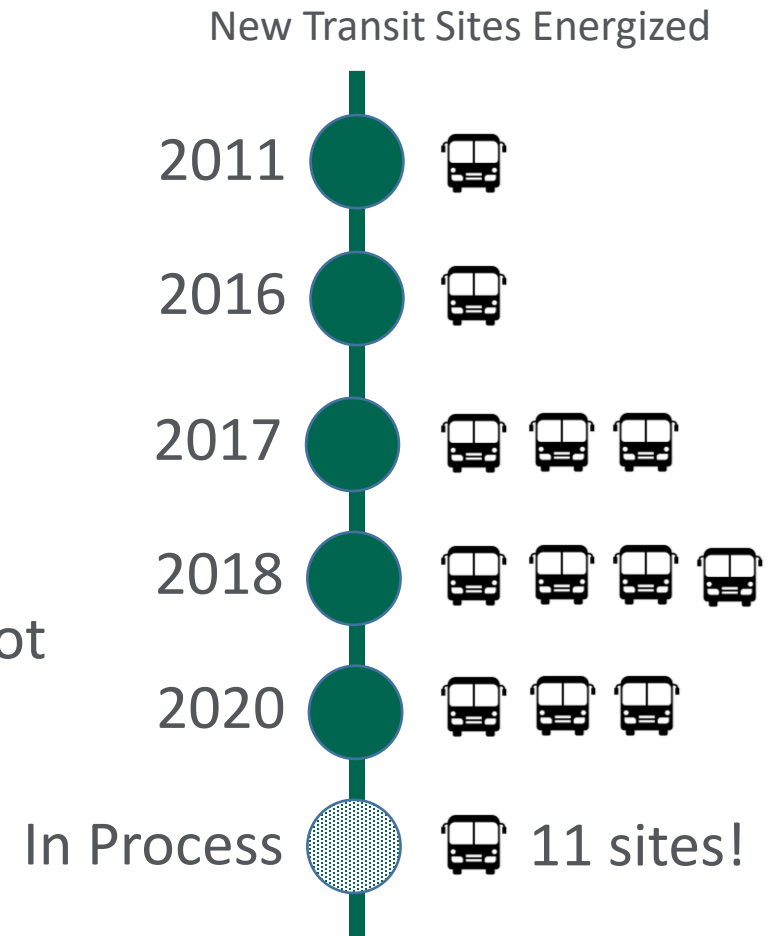


Andrew Papson  
eMobility Advisor  
Southern California Edison



# SCE is a pioneer in EV Bus charging infrastructure

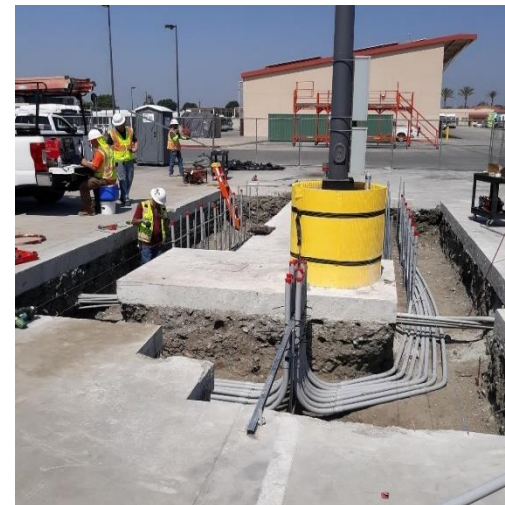
- We've been partnering with agencies on EV bus sites since 2011.
- We currently support four transit agencies with large EV fleets:
  - 103 buses in total
  - Over 2 million EV bus miles in 2019
  - Over 4.6 million kilowatt-hours in 2019.
- Several more transits are running smaller EV fleets or pilot buses.
- Twelve EV bus infrastructure sites in operation, both depot and on-route. Eleven more sites are currently in development.





# SCE's *Charge Ready Transport* program builds charging infrastructure for fleet customers

- Covers cost of all infrastructure needed up to the charging hardware
- Builds both off property (transformer, service drop) and on property (meter, panel, trenching)
- Design/build service so you don't have to hire an engineer contractor
- Charging station rebates available for transit/school buses and disadvantaged communities
- 5-year program, \$356m available targeting 870 installations.



# SCE's new innovative rates for EV fleets are transparent, predictable and a very good value

## Fleet Concerns

- High cost
- Complexity (demand vs. energy charges)
- Unpredictable variability month-to-month
- Difficult to develop charging strategies



## New EV Rates

- Clear pricing by time of day
- Zero demand charges for 5 years
- Simpler charging strategies to keep costs low
- Reduced costs by 31%
- 2.5 – 4x cheaper than diesel (cost per mi)

# Charge Ready Transport

## More Information:

Andrew Papson

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SOUTHERN CALIFORNIA  
**EDISON®**

Energy for What's Ahead®







# Transit Agencies and Utility Partnerships

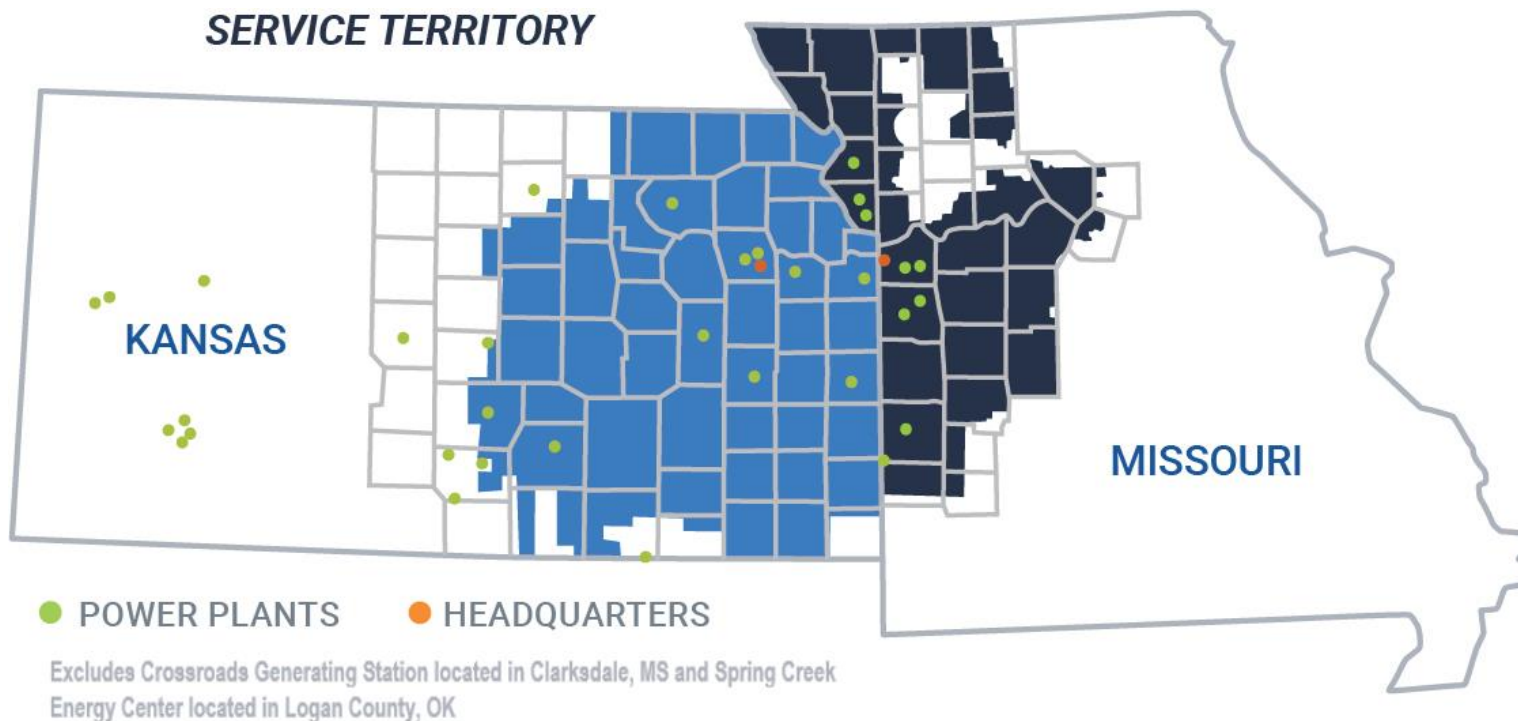
Kim Winslow

Senior Director, Evergy Energy Solutions





# Vertically Integrated Regulated Electric Utilities



1. Statistics as of 12/31/18.
2. Market cap as of 10/31/19.
3. Estimated rate base based on ordered and settled rate cases.
4. Renewables include both owned and purchase power agreements as of 12/31/18. Additionally, we expect total renewables will be over 3,800MW by 2020.

## ***Evergy Statistics<sup>1</sup>***

~\$15B market cap<sup>2</sup>

~\$14.2B of rate base<sup>3</sup>

1.6M electric customers

11,566 MW of owned generation

3,517 MW of renewables<sup>4</sup>

13,700 miles of transmission

52,200 miles of distribution

# Wichita Transit

Deployed four Proterra electric buses and chargers - Dec. 2019

**Rates:** Every implemented the Electric Transit Service tariff (2018). Researching other options, such as an EV Bus “charging as a service” tariff

**EV bus chargers & infrastructure:** Every is committed to providing ongoing consulting and financial support for grant applications. Wichita Transit was awarded the Low-No grant in 2018.

Every Field Design consulted on the project to ensure existing infrastructure met the needs for the new equipment





# Wichita Transit

Goal: Have an all-electric fleet within the next ten years

Evergy supporting Wichita Transit with their electrification goals by:

- Connecting them with tools that help optimize fleet and collect data (ViriCiti)
- Assisting with any infrastructure needs with the onboarding of 7 Gillig buses (coming soon)



# Topeka Metropolitan Transit Authority (TMAT)

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TMAT is replacing three diesel buses with electric buses as early as 2023

**Rates:** Evergy implemented the Electric Transit Service tariff (2018) and is researching other options, such as an EV Bus “charging as a service” tariff

**EV bus chargers and infrastructure:** Evergy is committed to providing financial matches for grant applications, expertise to address technical issues and facilitate cost-effective, efficient use of energy and TMAT was awarded the Low-No grant in 2019



# Kansas City Area Transportation Authority (KCATA)

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KCATA is replacing two diesel buses with electric buses in August 2020

**Rates:** Evergy is researching options to support transit agency needs, such as an EV Bus “charging as a service” tariff and a transit rate

**EV bus chargers and infrastructure:** Evergy is committed to providing financial matches for grant applications, expertise to address technical issues and facilitate cost-effective, efficient use of energy

**Downtown Electric Streetcar-** 2 mile route through downtown (2016)







# Kim Winslow

Senior Director, Energy Solutions

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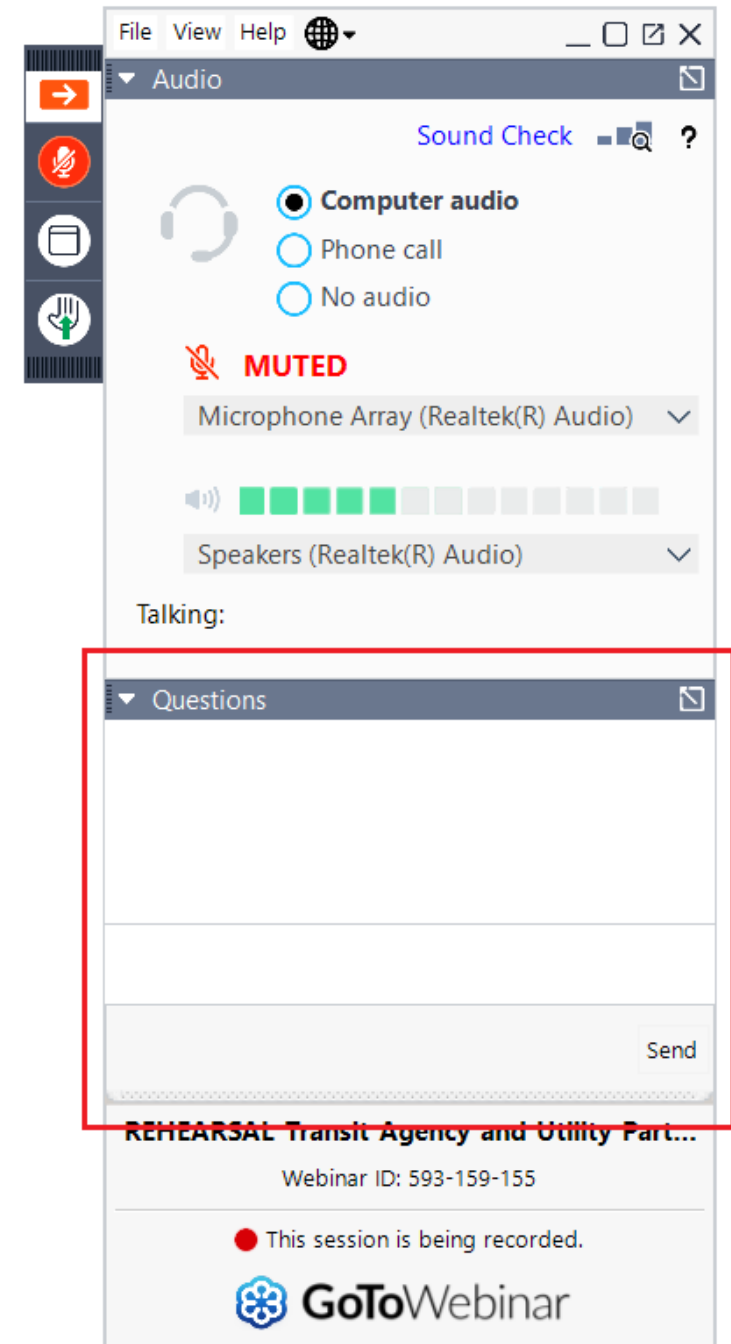
# Panel Discussion

# Audience Questions

To submit a question or comment to the moderator during the webinar, please type it into the **Questions** box in the menu panel.

Please identify your company/agency before you type your question:

*Ex. “APTA – what day is this?”*





# Moderators and Panelists



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APTA



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Edison Electric Institute



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Austin Energy



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Southern California Edison



**Kim Winslow**  
Evergy

# Webinar Series: Electric Buses, Utilities & Infrastructure

## Webinar 1:

- A recording of today's webinar will be posted on APTA's website next week.

## Webinar 2

- Topic: Case studies from electric bus deployments, featuring shared learnings from transit agencies and electric companies (Date TBD: May/June)

## Webinar 3

- Topic: New infrastructure considerations for various charging strategies (Date TBD: June)

# Thank you.