

Members Meeting & FALL WORKSHOP 2022

Oct. 25-26 | St. Louis

Hosted by Ameren Missouri
and Ameren Illinois

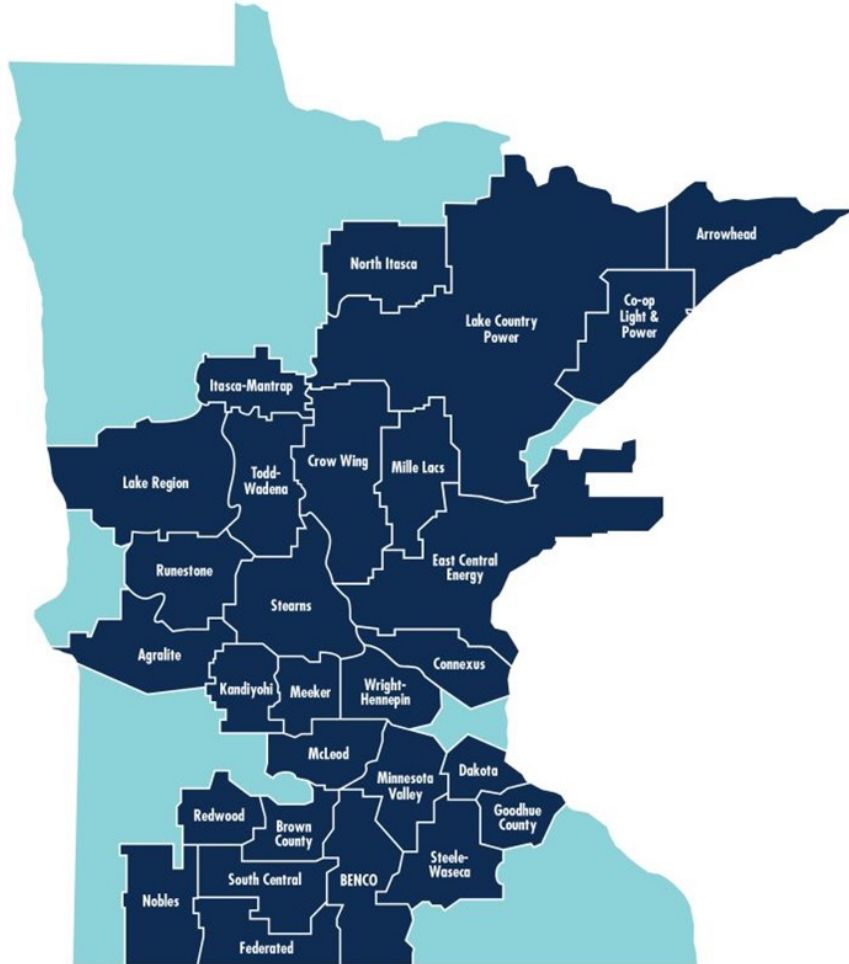


SMART ENERGY
CONSUMER COLLABORATIVE

First Responders EV Safety Training Program

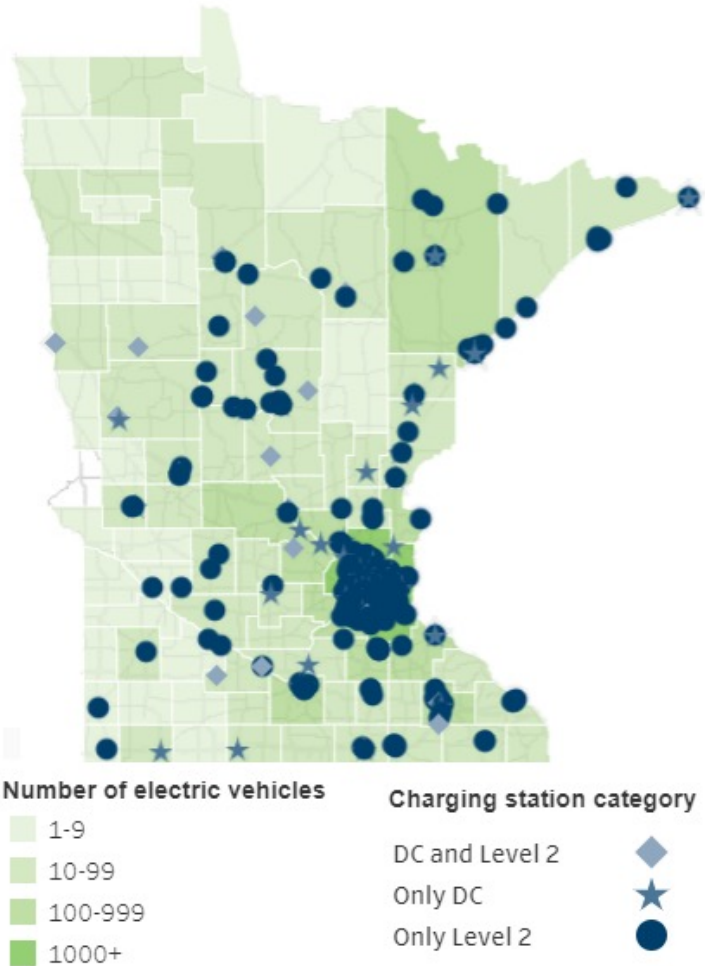
Rodney De Fouw
SECC Fall Workshop
Oct 25, 2022

Great River Energy



- ▶ 28-member/owner utilities
- ▶ 700,000 members
- ▶ 1.7 million people
- ▶ 92,000 miles of distribution lines
- ▶ Average of 7.7 members per mile of line
- ▶ 5,000 EVs (~27,000 in MN)

Minnesota's EV scene



Winter



#1 Priority = Safety



Great River Energy Aerial View

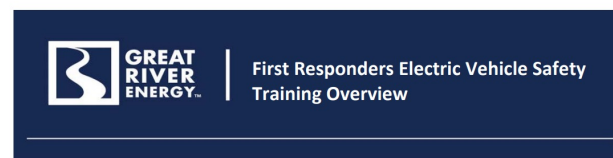


Identified a need

- ▶ Information for EV first responders is currently scant
- ▶ Several false perceptions amongst first responders and the general public about
 - EV safety
 - Fire risk
- ▶ First responder EV safety training could save a life and will make the areas we serve safer for EV drivers

First Responders EV Safety Training Program

- ▶ Identified a training provider - SASCS
- ▶ Created a program to sponsor these events for our member owner utilities
- ▶ GRE funds the training, and the distribution cooperative takes care of the rest
 - Location/Time
 - Outreach
 - Event Staffing



What is the first responder electric vehicle safety training program?
The first responder electric vehicle (EV) safety training program is an offering to provide each member cooperative with an opportunity to host a first responders EV safety training in their cooperative service area in 2022 (up to \$1,000 per member event).

Goals of the first responders EV safety training program

1. Nurture a safer EV environment for EV drivers.
2. Engage with first responders to help them mitigate the hazards involved with electric transportation accidents while eliminating false perceptions around the safety of EVs when damaged.
3. Expose first responders to EV technology.
4. Capture marketing/PR benefits from helping these organizations enhance their knowledge about current EV crash response safety while keeping the members who drive electric in our communities safe.

Details
The courses will be taught by staff of Safety and Security Consultation Specialists, LLC (SASCS), a first responder training company based out of southern Minnesota. In the past 10 years, SASCS has grown to become one of the largest fire training companies in Minnesota. It carries Minnesota Board of Firefighter Training and Education approval and all our instructors are Fire Board and IFSAC accredited.

Safety & Security Consultation Specialists

22838 West County Line Road
Minnesota Lake, MN. 56068



Electric Vehicle Emergency Response

COURSE DESCRIPTION: EV Emergency Response
LENGTH IN HOURS: 2-3 hours
TEXT AND REFERENCES: NFPA EV Response website

[NFPA - Emergency Response Guides for Alternative Fuel Vehicles](#)

COURSE GOALS:

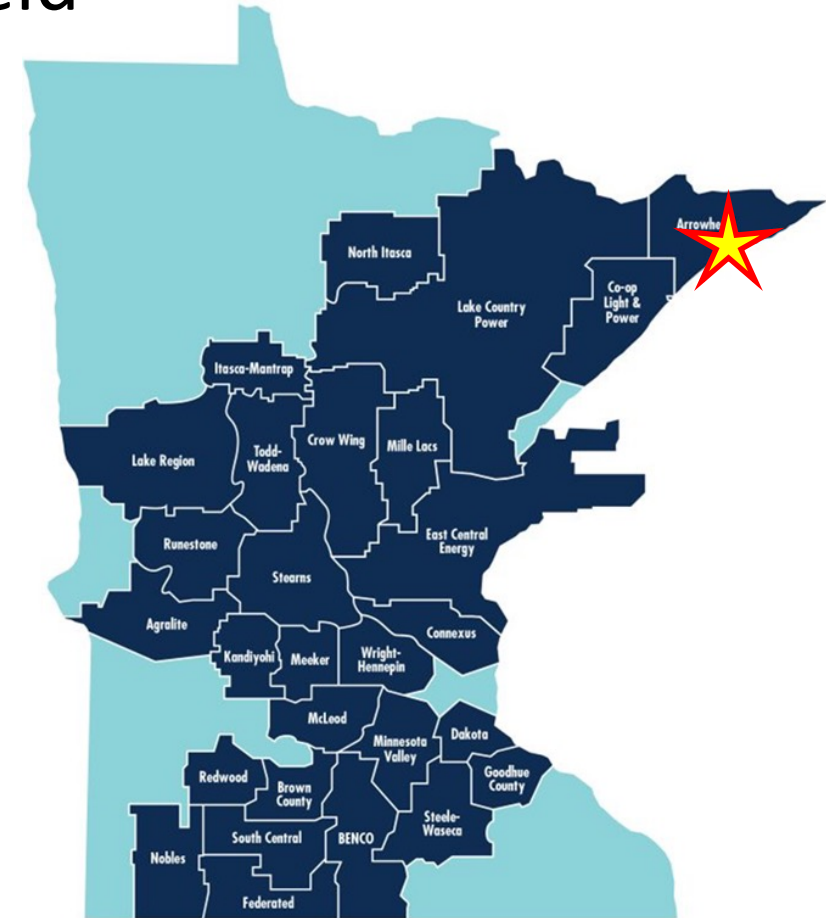
- ▶ Introduction
- ▶ EV Vehicle Construction
- ▶ EV Emergency Response
- ▶ Dispelling EV Myths

Topics Covered:

- EV numbers and EV Manufacturers
- EV Types
- EV History
- EV Basic Components
 - High Voltage Battery
 - Low Voltage Battery
 - High Voltage Cables
 - Charging Port and Connectors
 - DC/DC Converter
 - Regenerative Braking

First Responders EV Safety Training Program

- ▶ Dec. 13, 2021 our first training event was held
 - Arrowhead Cooperative Electric
 - 33 first responders



First Responders EV Safety Training Program

- ▶ Event feedback was very positive
- ▶ Posted on social media
- ▶ An article was written for our GREnews



First responders get firsthand EV safety training

January 19, 2022

Access to, and demand for, electric vehicles (EV) continues to increase as more states implement transportation standards to reduce their greenhouse gas emissions and with growing consumer interest in driving electric.

Minnesota is working to become the Midwestern leader for plug-in EV use and recently adopted clean car standards with a goal for 20% of all passenger vehicles in the state to be electric by 2030. There were nearly 7,000 EV registrations in the state in 2018. That number, the Minnesota Department of Transportation estimates, jumped to 20,000 in 2021 with 61% being fully electric and 39% plug-in hybrids.

First Responders EV Safety Training Program

- Developed additional materials and event guides

First Responders EV Safety Training Event Checklist and Info Sheet

Checklist

- Coordination and confirmation with SASCs/Jack on event time, date and location
- Outreach and coordination with local first responder organizations
- EV education overview sheet for distribution to attendees at event – also posted to Member Owner
- EV info list linked [here](#) for distribution to attendees at event
- Social media / promotion coordination (internal at your co-op and with GRE)
- Photos/photo release
- Event Survey
- Event staffing – (typical 30-40 attendee event needs are 3-4 co-op/GRE members to greet attendees, provide training utility intro and answer general EV questions and generally manage attendee needs during the training.)
- Please ensure your GRE member strategist is aware of the date for your event
- Coordinating EVs for display at events
 - GRE Fleet Vehicles (please work with your assigned GRE member for your event)
 - Pacifica Hybrid
 - Chevy Bolt
 - Neighbor Co-op EVs
 - Member EV Drivers
 - Local Dealerships
- EVSE (Charger) displays
 - Level 2 Mock charger provided by GRE (Jack/SASCs has this shared at responder events but it is always good to confirm with SASCs.)



LEARN MORE ABOUT:

- ▶ Types of electric vehicles
- ▶ Electric vehicle crash & fire response
- ▶ Shutting down/disabling an EV
- ▶ Emergency responder safety
- ▶ Dispelling EV response myth



DATE: JANUARY 18, 2022
TIME: 7:00 – 8:30 PM
LOCATION:



EV Responder Safety Training Survey

Please help us serve you better in the future by answering the questions below.

What fire department are you from?

Would you recommend this training to others? YES NO

	NO KNOWLEDGE, LOW CONFIDENCE	KNOWLEDGEABLE, VERY CONFIDENT
Your confidence level of emergency EV response BEFORE today's training:	1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8 <input type="radio"/> 9 <input type="radio"/> 10	
Your confidence level of emergency EV response AFTER today's training:	1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8 <input type="radio"/> 9 <input type="radio"/> 10	

What is the most important thing you learned today?

First Responders EV Safety Training Program

- ▶ Word spread faster than we expected
- ▶ Social media feedback was great



SWCE
Steele - Waseca
Cooperative Electric

SASCS
Safety & Security
Consultation Specialists

SWCE Warehouse, 2411 W Bridge St,
Owatonna, MN 55960 | BSU to
Jack Schwab, jschwab@swce.coop,
507.339.2088 by **JANUARY 10TH**

**First Responder EV
Safety Training**
January 18, 2022 | 6:30 PM Meal | 7:00 PM-8:30 PM Training

Learn more about:

- 01 Types of electric vehicles.
- 02 Electric vehicle emergency response
• EV crash response
• EV fire response
- 03 Shutting down/disabling an EV
- 04 Emergency responder safety
- 05 Dispelling EV response myth

GR GREAT RIVER ENERGY

ECE
East Central Energy

**ELECTRIC VEHICLE
RESPONDER SAFETY TRAINING**

Be one of the first to receive this free, cutting-edge EV training. Space is limited to 4 per department. Talk to your chief today!

Training includes:

- Types of EVs
- EV crash & fire response
- Disabling an EV
- Emergency responder safety
- EV response myths
- Hands-on demonstration
- Light, pre-packaged dinner
- Masks may be required per CDC guidelines

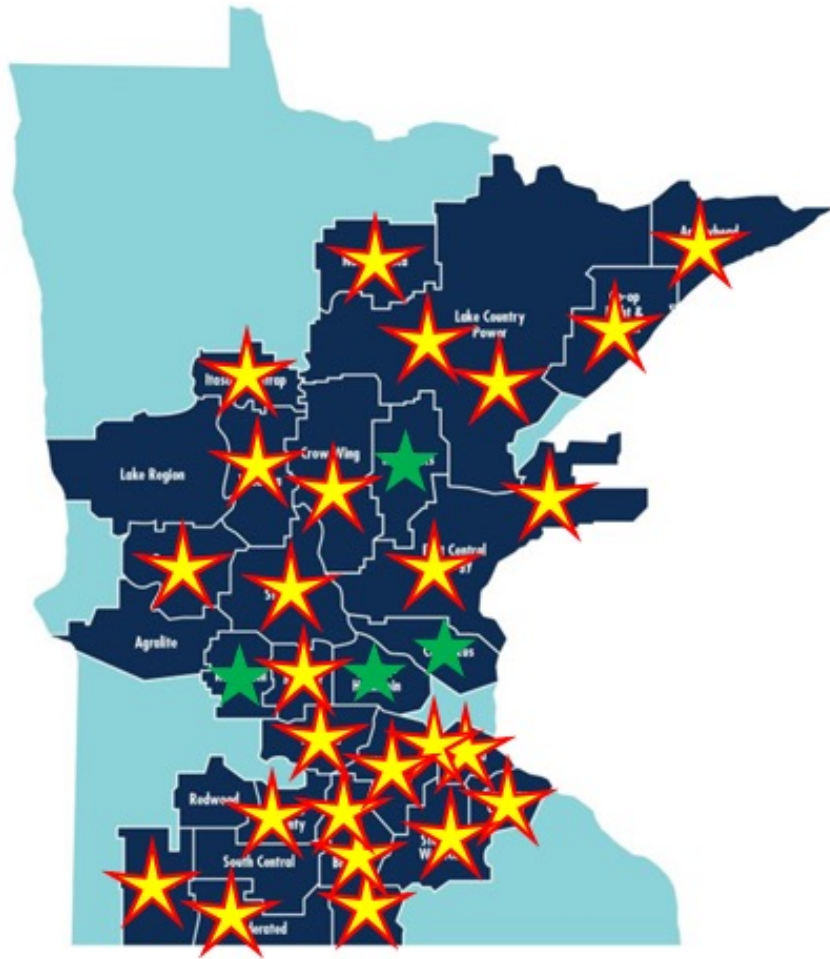
Wednesday, February 23
ECE Superior Operations Center
6:30-8:30 p.m.



5617 BAUMGARTNER RD, SUPERIOR, WI

Training provided by Safety & Security Consultation Specialists (SASCS) courtesy of East Central Energy and Great River Energy

First Responders EV Safety Training

Program events



-  = Completed Event
-  = Scheduled Event

Results To Date

- 25 events across 20 different co-ops
- 1,219 first responders received training
- 208 different fire and police departments
- 4 more events scheduled

First Responders EV Safety Training Program



Additional benefits

- ▶ Dispelled EV safety myths
- ▶ Spread general EV knowledge



ENERGY WISE

for your Home



ELECTRIC VEHICLES

How much does it cost to drive an EV?

On average, EVs get 3 miles per kilowatt-hour (kWh), which is equivalent to 100 miles per gallon (mpg) in a gas-powered car. This means if you drive 1,000 miles per month (12,000 miles a year), you use about 333 kWh of electricity. The average electricity cost in the U.S. is \$0.12/kWh (about the same in Minnesota, too) so your electricity costs for driving are about \$40 a month. If you enroll in your cooperative's off-peak program, you could cut that cost in half.

It costs about \$40 per month in electricity to charge an EV compared to gas costs of \$100 per month for a car with an internal combustion engine.

Type of vehicle	Mileage/month	Cost/gallon of gas Cost/kWh of electricity	MPG miles per gallon/ Miles per kWh	Gallons/month kWhs/month	Monthly costs
Internal Combustion	1,000	\$2.50	25/mpg	40 gallons	\$100
Internal Combustion	1,000	\$2.50	10/mpg	100 gallons	\$250
Electric Vehicle	1,000	\$0.12/kWh	3/miles per kWh	333 kWh	\$40
Electric Vehicle (charged off peak)	1,000	\$0.07/kWh	3/miles per kWh	333 kWh	\$24

First Responders EV Safety Training Program

- ▶ Most attendees would not have come to an EV event
- ▶ All left with some great safety information on how to respond to incidents involving EVs
- ▶ Awareness vs. familiarity



Thank you



Rodney De Fouw, LC, CKAE
Member Electrification Strategist
Great River Energy
O: 763-445-6124 | M: 763-276-8110
rdefouw@grenergy.com

Gearing Up the Grid for Electric Transportation - SECC

Ensuring Equitable Distribution of Benefits



Puget Sound Energy (PSE) at a glance

- Washington's largest natural gas and electric utility, serving 1.2 million electric customers & nearly 900K gas customers over 6,000 square miles
- 3,100+ employees live and work in the communities they serve
- Investor-owned utility regulated by Washington Utilities and Transportation Commission (WUTC)



PSE's strategic framework for electrifying transportation

PSE is committed to carbon reduction and supporting the growth of electric transportation in our region by making it easier for drivers to charge their EVs at home, at work and in public. The **Transportation Electrification Plan (TEP)** provides a 5-year strategic framework for electric vehicle products and services that builds on current programs.



Drive market transformation and support the transition to a cleaner energy future



Remove barriers & create TE benefits for underserved customers



Fill charging infrastructure gaps



Plan for and manage electric loads



In 2019, PSE launched its equity-focused Up & Go Electric pilots

PSE co-hosted an **electric mobility ideation workshop** with a community partner to solicit community input on which EV pilot project use cases would be the most impactful.

Resulting in 4 project types with 8 separate community-based service providers:

- Low-income weatherization service providers
- Tribal transportation
- Community car shares
- Electric school bus for a Head Start

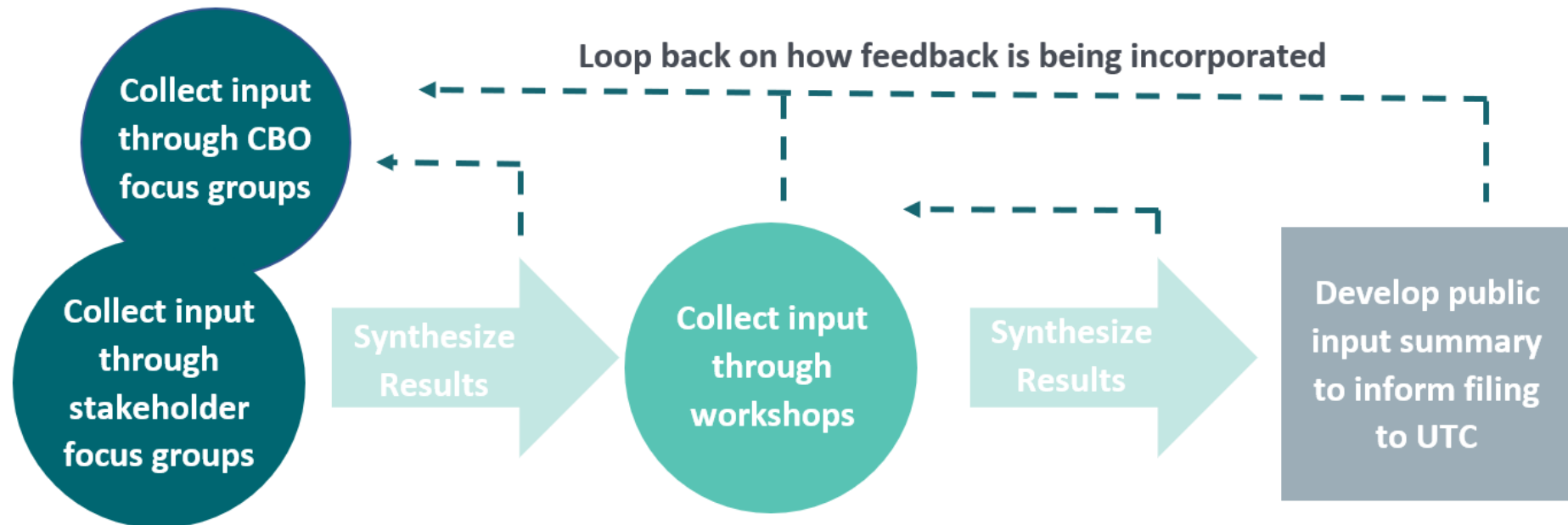


PSE's transportation electrification programs are split into two phases



Community engagement process

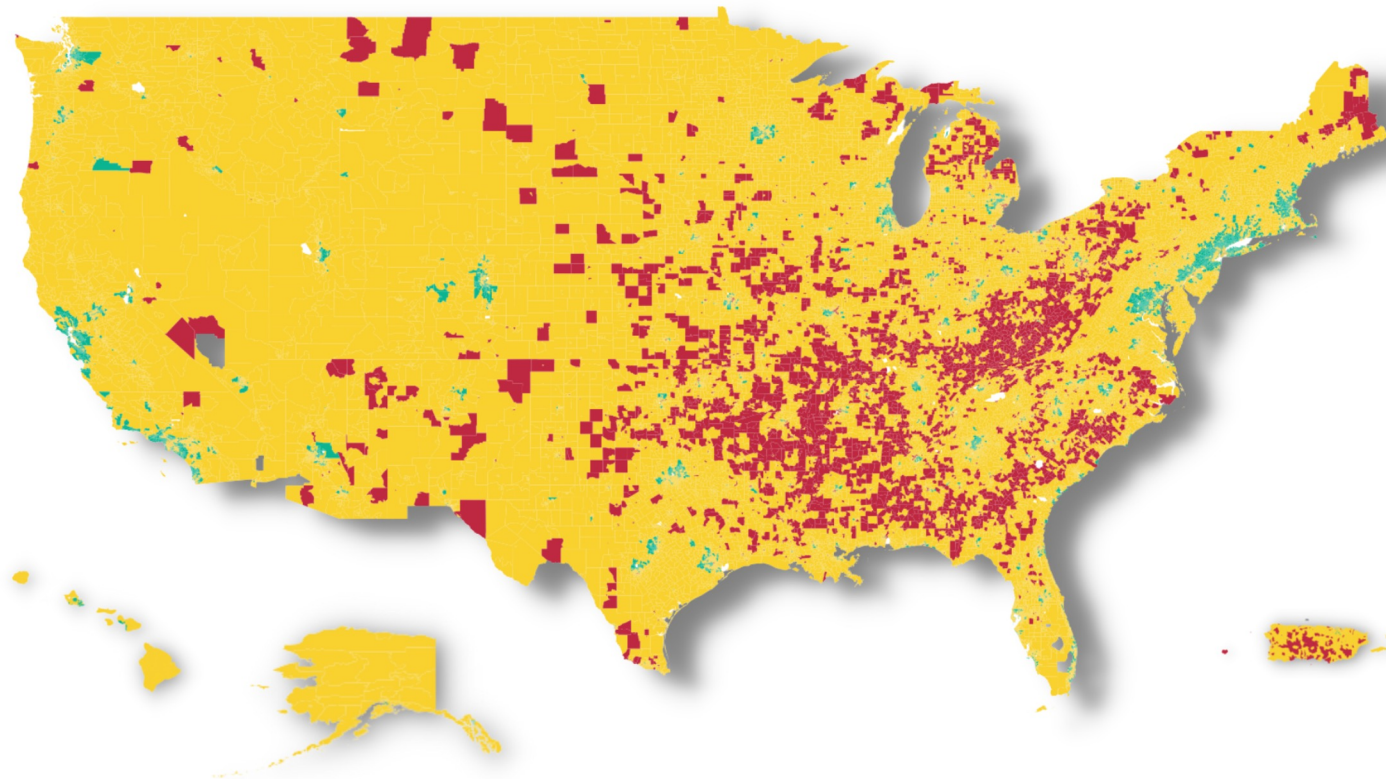
From August 2021 through October 2022, PSE has engaged community based organizations, government agencies, tribal entities and residents from Highly Impacted Communities and Vulnerable Populations through interviews, focus groups, workshops, and surveys to hear directly from them what would be most beneficial as PSE develops EV charging programs and services.



Thank you!

Heather Mulligan
Manager Customer Clean Energy Solutions
Puget Sound Energy
Heather.Mulligan@pse.com

EV adoption modeling helps utilities meet customers where they are on the adoption curve & plan for the future.



● Ready to Adopt ● Ready to Adopt Soon ● Roadblocks to Adoption

1 - Understand demand within your region now and in the years ahead

2 - Target customers with the most effective offers & messaging to promote adoption

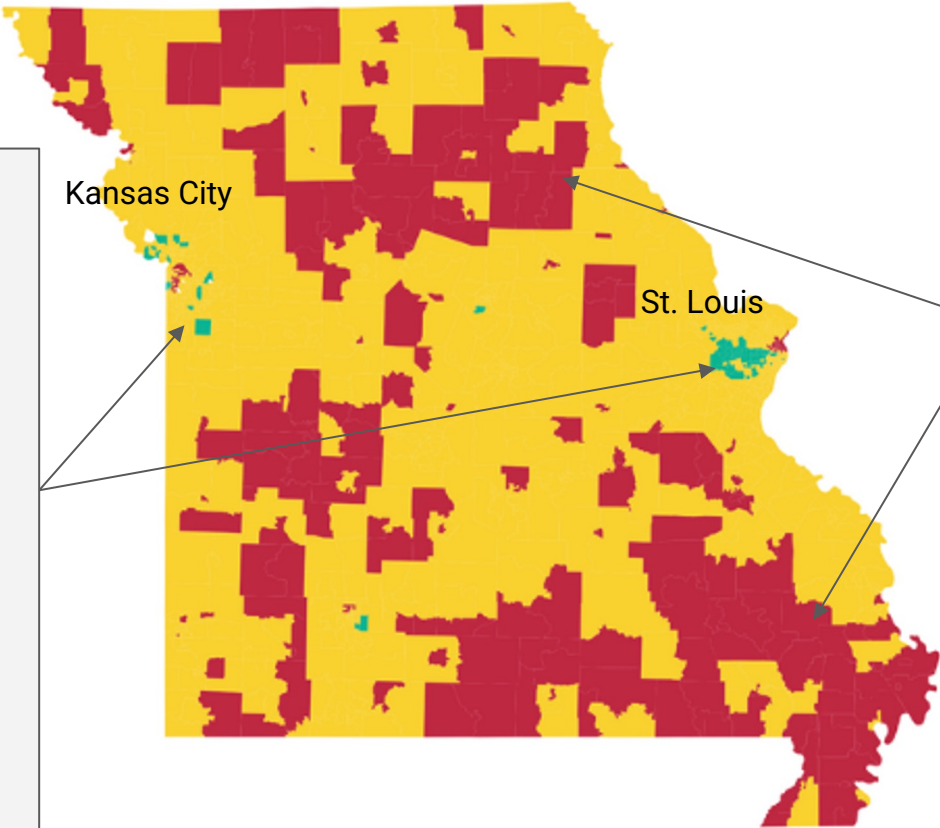
3 - Identify areas for targeted equity partnerships & initiatives



EV Adoption Model Overview: Significant Data Factors



Missouri



Growth Predictors

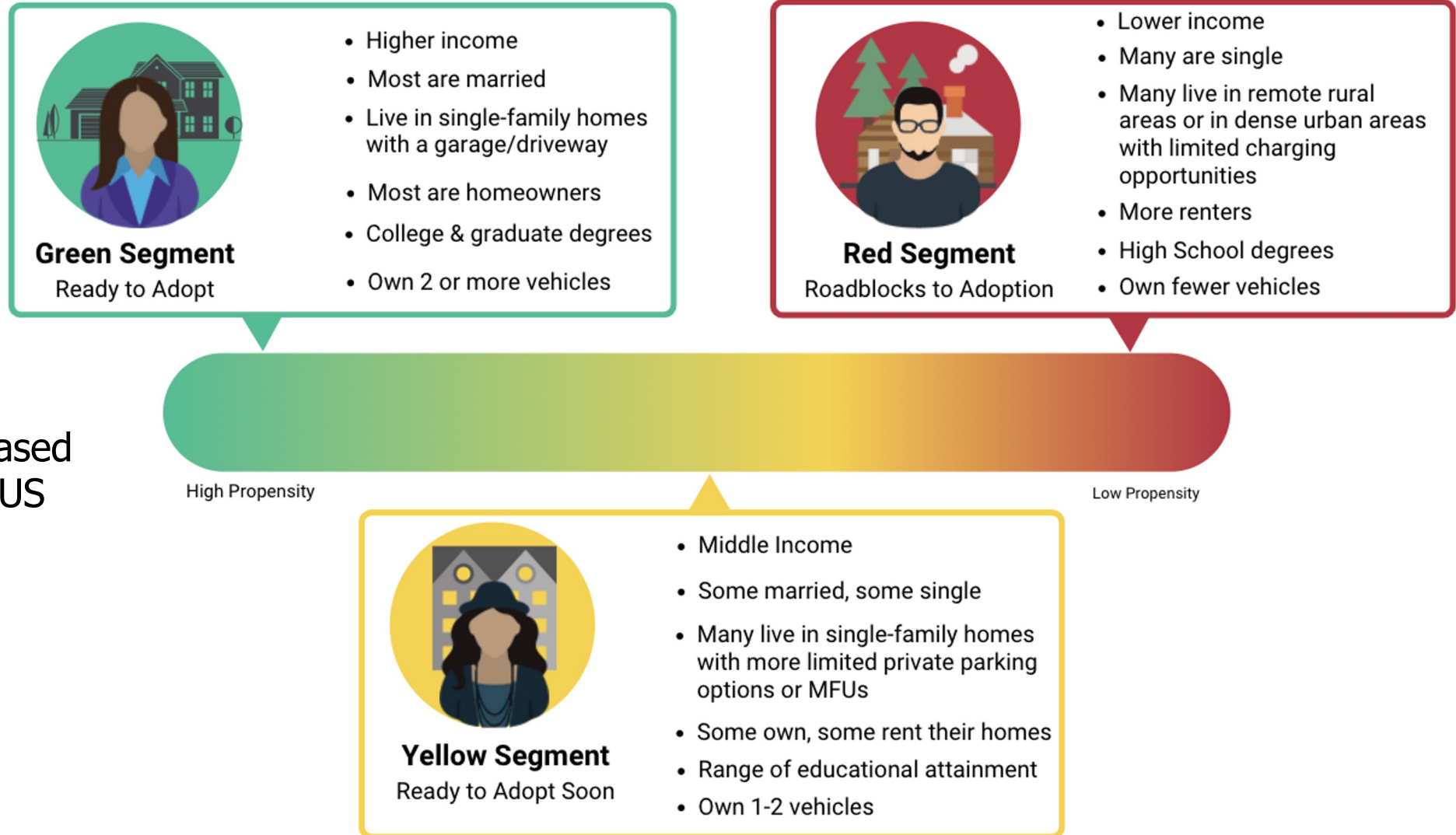
- Higher income
- Higher home values
- More single-family, resident-owned housing
- Working from home
- More management & "white collar" professions; higher educational attainment

Roadblock Predictors

- Lower income
- Lower home values
- Lower educational attainment
- More renter-occupied housing
- More senior citizens
- Few, if any, public chargers nearby



EV Model Overview: Green, Yellow & Red Tracts



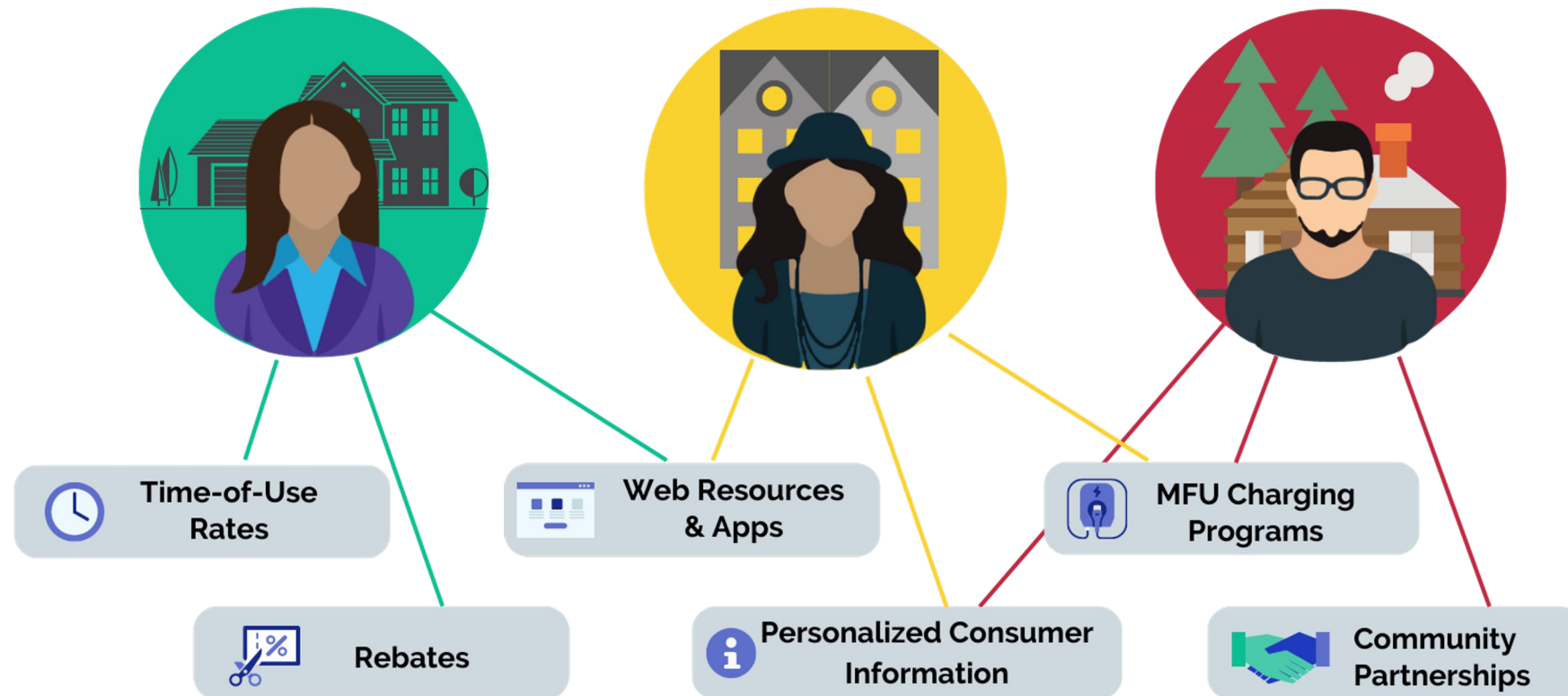
Our model identified three Census Tract-based segments across the US defined by specific demographic characteristics.

**Note that these segment profiles are based on averages. Not all consumers in a segment will be the same.*

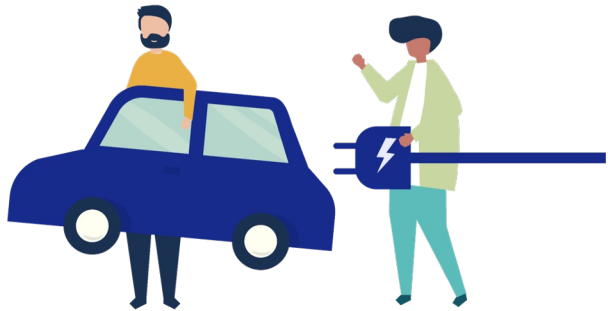
Customer Targeting Based on EV Segments



EV adoption segments show utilities which programs are most relevant for specific customers in order to boost enrollment in EV-related programs, build new programs that will help more customers adopt, and create meaningful community partnerships to support charging equity.

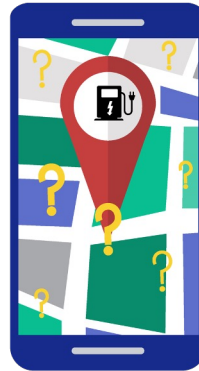


Boost Enrollment in EV Incentives



DLC increased customer engagement with EV content up to 500%, enrollment in their EV rebate program by 55%, and enrollment in their Whole Home rate by 98% after targeting their Green EV segment.

Find Partners to Grow Charging Infrastructure



ATCO, a large Canadian energy company, identified commercial customers who would be good partners for EV charging installation.

Launch New EV Programs & Products



A large automaker is utilizing BlastPoint's adoption model to plan a new plugshare program in specific regions of the US.



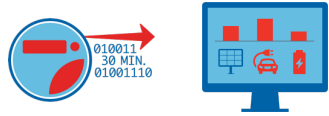
EV Introduction and the Grid

Christine Cole, Technical Solutions, Itron Inc

The EV Tipping Point and the Jones Effect

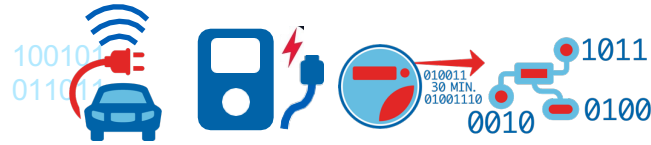


The Utility Grid and Residential EV Introduction



Detect

- Awareness
- AMI
- Disaggregation
- Consumer Engagement
- Planning



Monitor

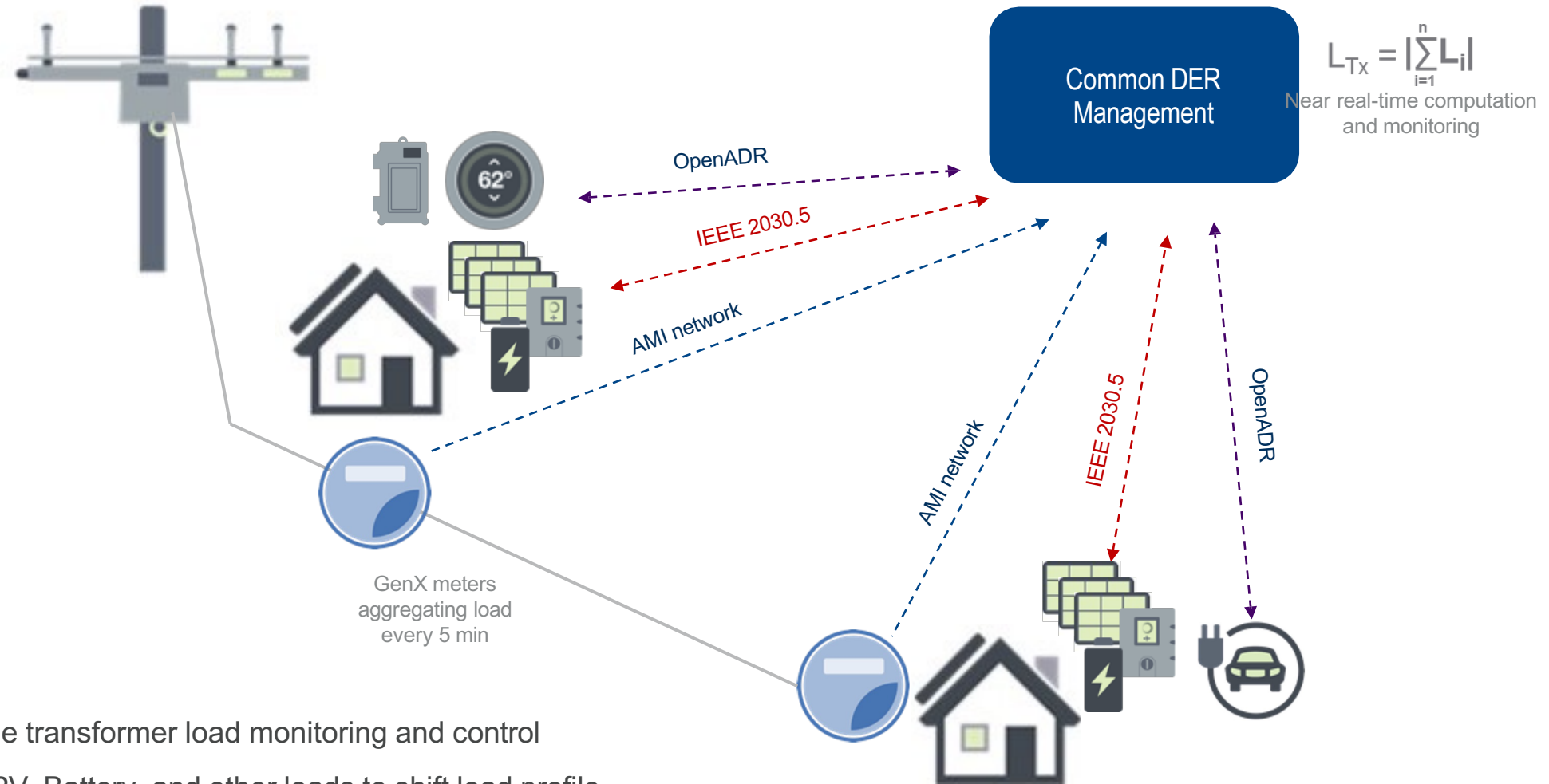
- EV Telematics
- Behavior EV Management Programs
- Grid Planning



Manage

- Active EV Charging Management
- DER Firming
- Transformer Protection
- Grid Balancing

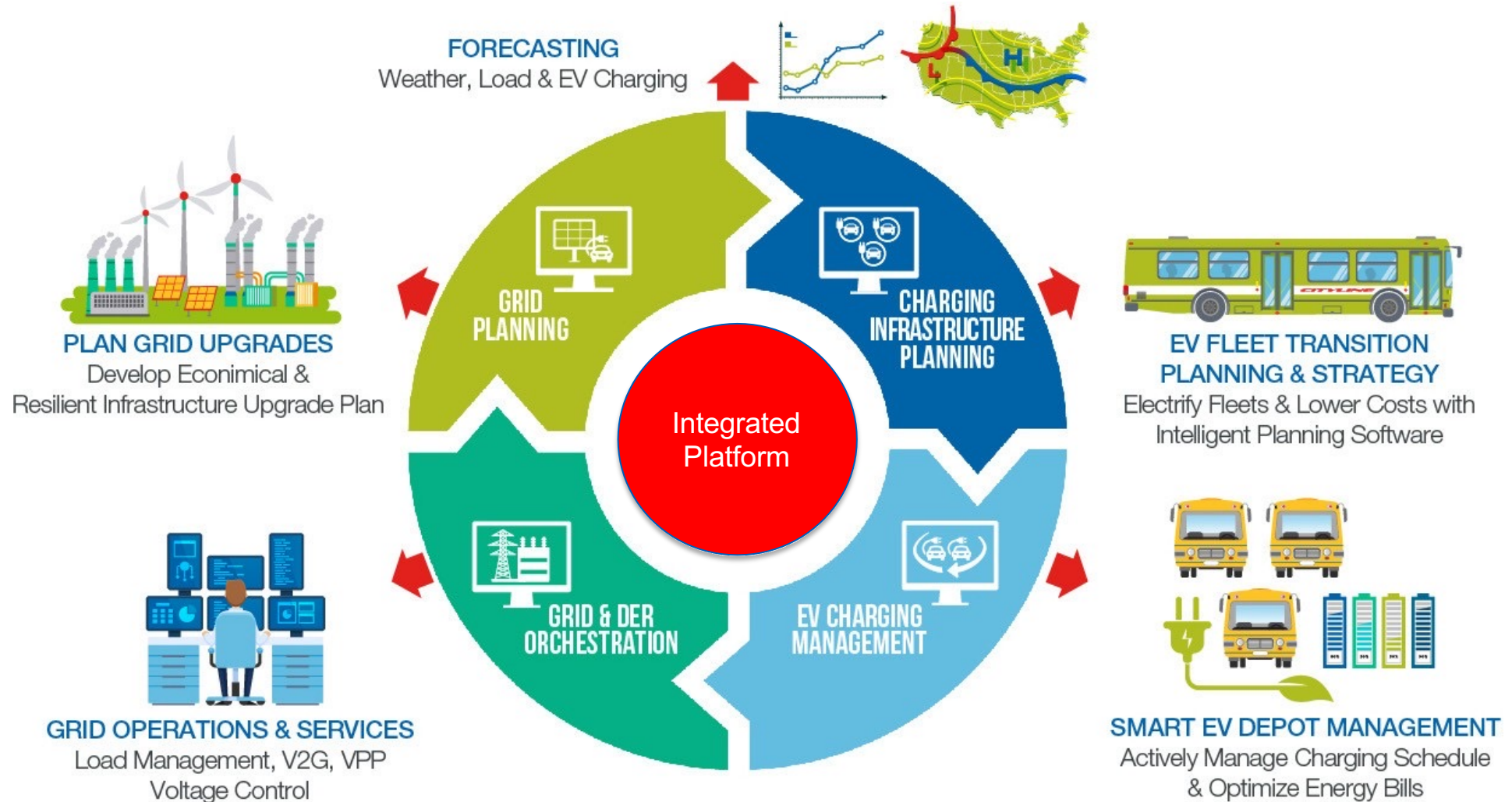
Residential EV, DERs and Transformer Protection



Requirements:

- Near real-time transformer load monitoring and control
- Control EV, PV, Battery, and other loads to shift load profile

An Integrated Platform for the Energy & Transportation Ecosystem



Thank You



Electric Transportation Update

October 2022

Electric Transportation Hot Topics

- Charging Infrastructure
 - NEVI Funding
 - Utility Programs
- Electricity Rates
- Vehicle Incentives re: Inflation Reduction Act
- Workforce Development
- Convenience Stores/Truck Stops Advocacy
- Battery Electric, CNG, and Hydrogen: Southern Company Clean Transportation Summit Jan 30 & 31, 2023

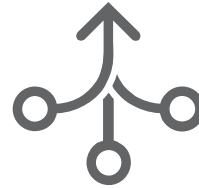
Southern Company ET At-A-Glance



Infrastructure

- Regulated ET infrastructure programs
- Community Charging
 - Make-Ready
 - Rebates

Infrastructure Investment and Jobs Act



Advisory Services

System ET Effort

- Fleet Electrification Plan

Southern Company/Volta Partnership



Advocacy

Alliance for Automotive Innovation

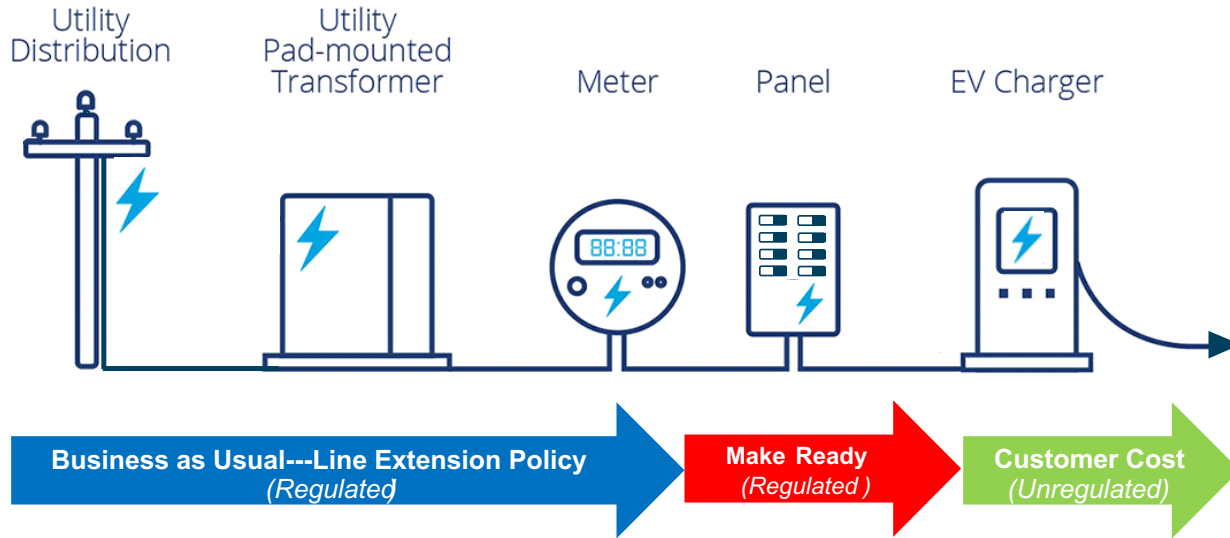
Alliance for Transportation Electrification

Zero Emission Transportation Association

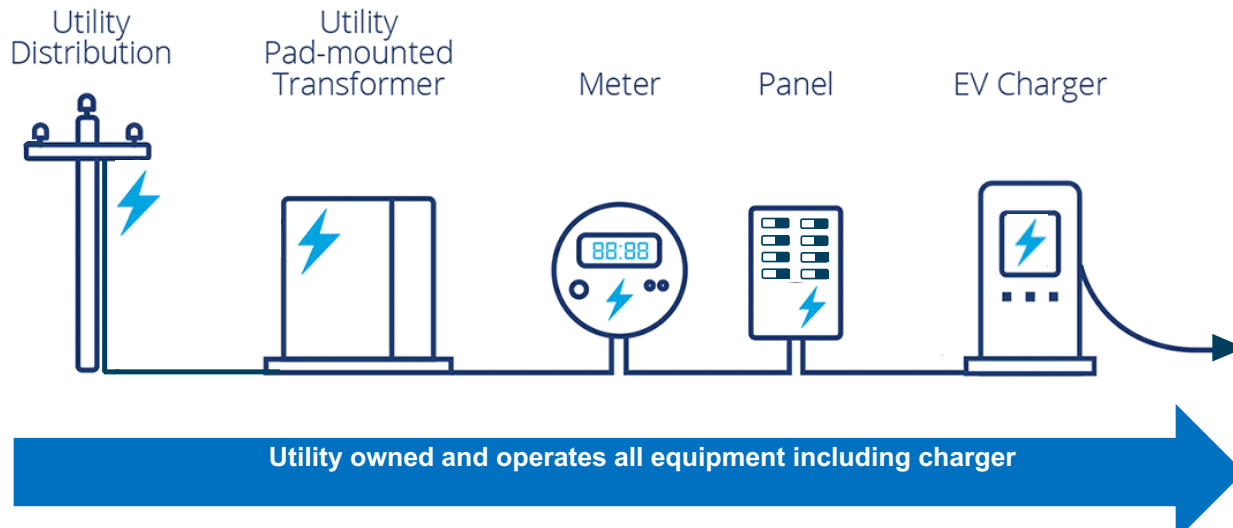
Electric Drive Transportation Association

ET Infrastructure Ownership Models

Make Ready Offering



Utility Owned and Operated



System Make Ready Programs:

Alabama Power---ADECA supplement, business as usual

Georgia Power---2020 Make Ready program

System Own/Operate Programs:

Georgia Power Community Charger Program

Members Meeting & FALL WORKSHOP 2022

Oct. 25-26 | St. Louis

Hosted by Ameren Missouri
and Ameren Illinois



SMART ENERGY
CONSUMER COLLABORATIVE