

Resiliency and Sustainability Advisory Committee Meeting

May 19, 2022

Welcome and Moment of Silence

By: Mayor John Tecklenburg, Chairman

Electric Lawn Care Expo

April 30

For event pictures, benefits and resources visit:

charleston-sc.gov/Electric-Lawn-Care

Data & Analysis on Compost Program

charleston-sc.gov/compost

By: Katie McKain,
Director of Sustainability

CLIMATE ACTION PLAN

AN EQUITABLE STRATEGY FOR A HEALTHIER FUTURE



Charleston
SOUTH CAROLINA

MAY 2021

The compost program directly implements Climate Action Plan

Organic materials sent to a landfill break down without oxygen resulting in release of methane, a greenhouse gas 25 times more potent than CO₂.

Organics are largest part of waste stream

COMPOST YOUR FOOD SCRAPS! SIGN UP TODAY!

City of Charleston residents can take their food scraps to designated drop sites for composting. This service is **FREE**. Drop-off locations include:

- **Ackerman Park** (West Ashley)
Including West Ashley Farmers Market
- **Corrine Jones Park** (Peninsula)
- **Medway Park** (James Island)

To sign up for the service and to see a list of items accepted, please visit charleston-sc.gov/compost.



Pilot Project (grant)
Testing logistics for 6 months.

Grant period extended to end Dec. 31, 2022.
Funding ends with grant.

Food Scrap Drop Off



Education & Outreach Efforts



Two workshops
reached over
400 ppl

January- 200 ppl
YouTube- 150 ppl

March- 60 ppl

Education & Outreach Efforts



Promotion weekly at the West Ashley Farmers Market reached nearly 300 ppl in 5 weeks so far.

Thanks to all our volunteers! (over 40 hours)

Education & Outreach Efforts



Charleston
proclaimed

May 1-7

International
Compost
Awareness Week

Education & Outreach Efforts



Promotion at
special events, like
Charleston Green
Drinks

Education & Outreach Efforts



Climate Ambassador Program reached over 1,000 people so far

Compost Program is part of the presentation

Education & Outreach Efforts



sustainabilitychs

[Message](#)



...

134 posts

670 followers

124 following



Charleston Sustainability

Government organization

Welcome to the Sustainability Office at the City of Charleston, SC

www.charleston-sc.gov/sustainability



**Sustainable
Charleston**

1.6K followers • 404 following



Social Media posts
and shares from
partners

Education & Outreach Efforts



**CHARLESTON
COMPOSTS**



RESIDENTS CAN HELP complete the compost loop by joining the drop site program (for free) and purchasing Charleston's own Bees Best Compost at local retailers. Visit beesbestcompost.com



A future flower bed at Medway Park Community Garden.

**Complete the
Compost Loop!**

Compost generated from the program was donated to nourish our City Parks and gardens.

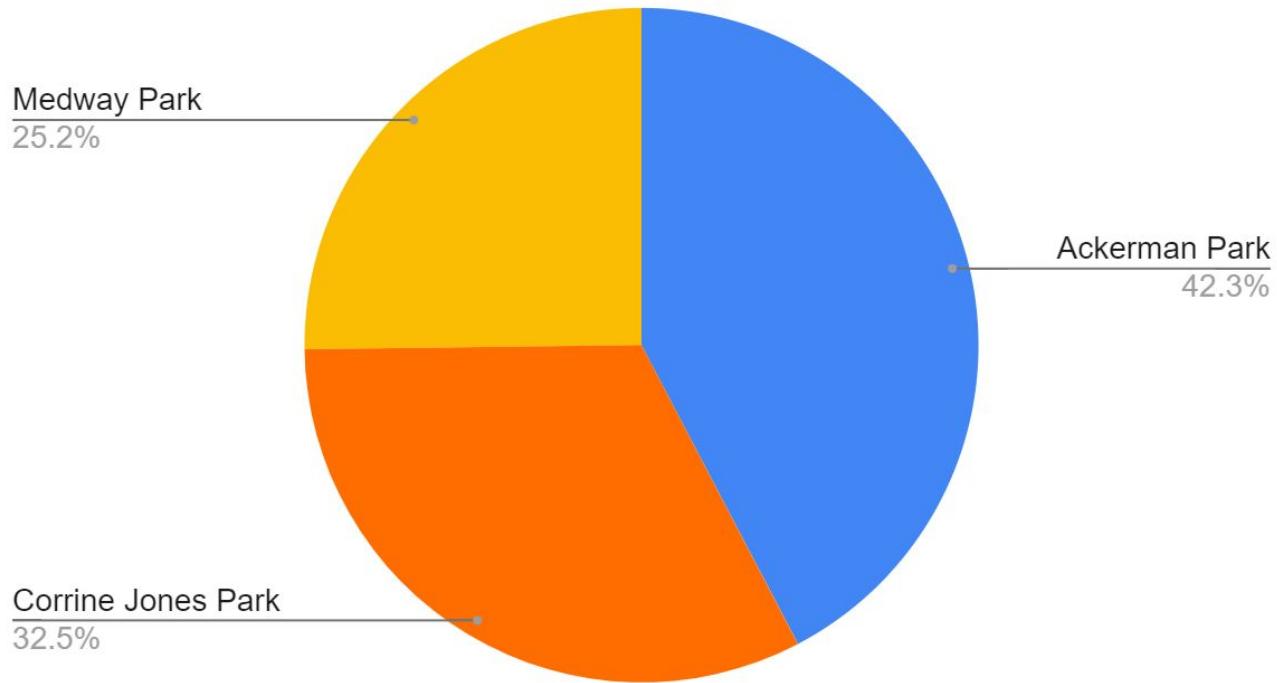


Program Results (May 2022)



**CHARLESTON
COMPOSTS**

Participation Distribution



**835 households
participating**

3 Drop Sites



Participants in
action!

**“I love
composting
because it cuts
down on the
garbage in my
house!”**



Participants in
action!

“I visit the park regularly anyway, so it’s easy to bring along my food scraps.”



Participants in action!

**“My kids love
composting and
opening the lock!”**



Participants in action!

“We live in an apartment so we have no yard to compost at home.

We drop off our food scraps and then head to the dog park. It's so convenient.”



Participants in
action!

Empowering the
next generation!

Program Results (May 2022)



**CHARLESTON
COMPOSTS**

Tons of Food Scraps Diverted from the Landfill



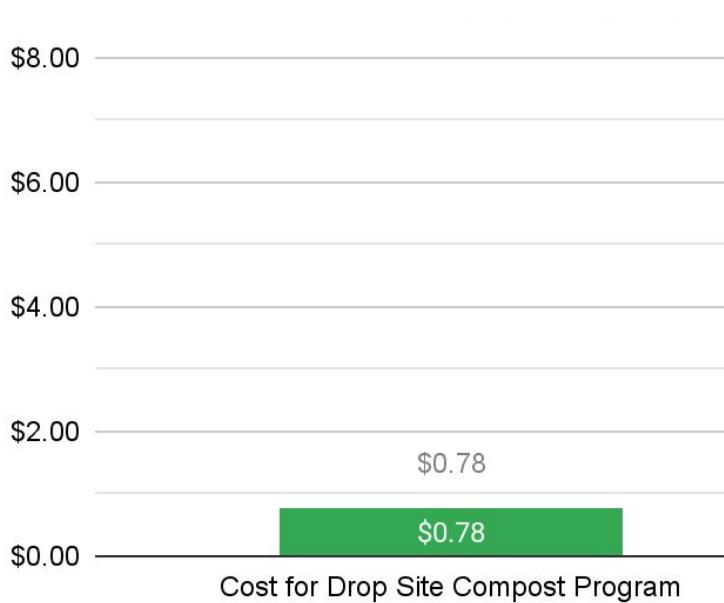
GOAL:

Divert 20 tons of food scraps in 6 months

(Achieving the goal requires an average of 3.5 tons per month)

Program Results (May 2022)

Monthly Cost Per Household to Dispose of Food Scraps

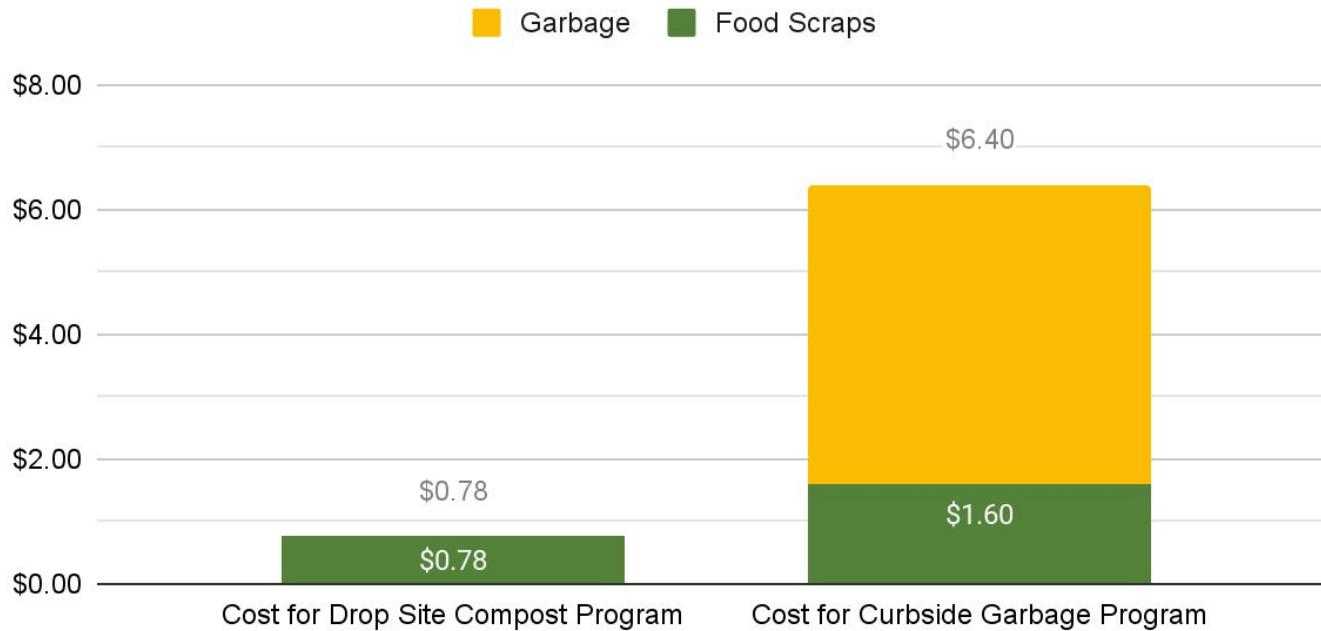


City pays approx.
\$6.40/household/
month for
curbside garbage
service

25% of garbage
collected
curbside is food
scraps

Program Results (May 2022)

Monthly Cost Per Household to Dispose of Food Scraps



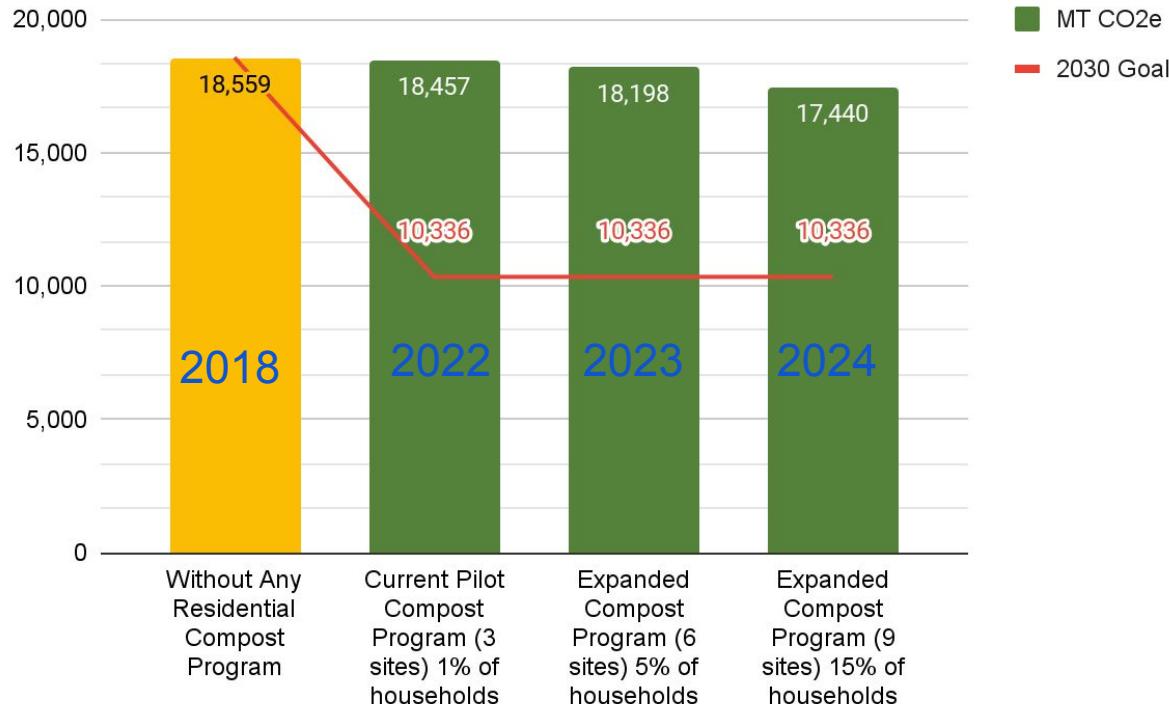
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Program Results (May 2022)



Annual Emissions from Food Scraps Citywide



Pilot program offsets about 102 MT CO₂e annually

2023 Goal:
Extend Program to 6 Drop Sites, Reach 5% of households (with partners)

Investment Request:
\$20,000

Committee Discussion on Compost Program Next Steps

Review Draft Amendment To Address Extra Thick Plastic Bags

By: Katie McKain,
Director of Sustainability



Signs at farmers markets are working!







REUSABLE CARRYOUT BAG shall mean a carryout bag that is specifically designed and manufactured for multiple reuse, and meets the following criteria:

- (1) Displays in a highly visible manner on the bag exterior language describing the bag's ability to be reused and recycled;
- (2) Has a handle **which is stitched and not heat-fused**;
- (3) Is constructed out of any of the following materials:
 - (a) Cloth, other **machine**-washable fabric, or other durable materials whether woven or non-woven capable of being cleaned and disinfected; **or**
 - (b) Plastic film with a minimum thickness of four (4.0) mils and capable of being cleaned and disinfected.
- (4) Has a minimum lifetime of 125 uses, which for purposes of this section means the capability of carrying a minimum of 22 pounds 125 times over a distance of at least 175 feet.

(h) While cutlery is considered exempt pursuant to Sec. 14-55(i), Food Providers in the City of Charleston shall only provide, distribute or deliver disposable to-go cutlery (i.e. forks, spoons, knives) and straws for prepared food and beverages upon the request or affirmative response of a customer or person being provided the prepared food or beverage, or in a self-service area or dispenser.

Electric Vehicles and Infrastructure: An Introductory Presentation

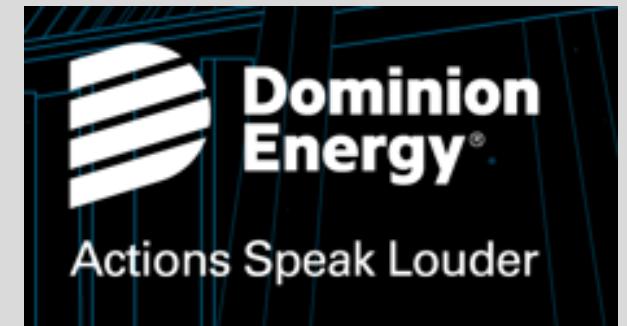
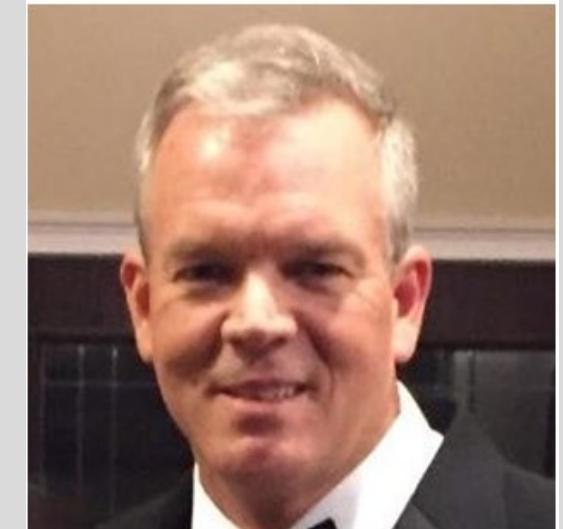
By: Westy Westmoreland,
Dominion Energy

WESTY WESTMORELAND

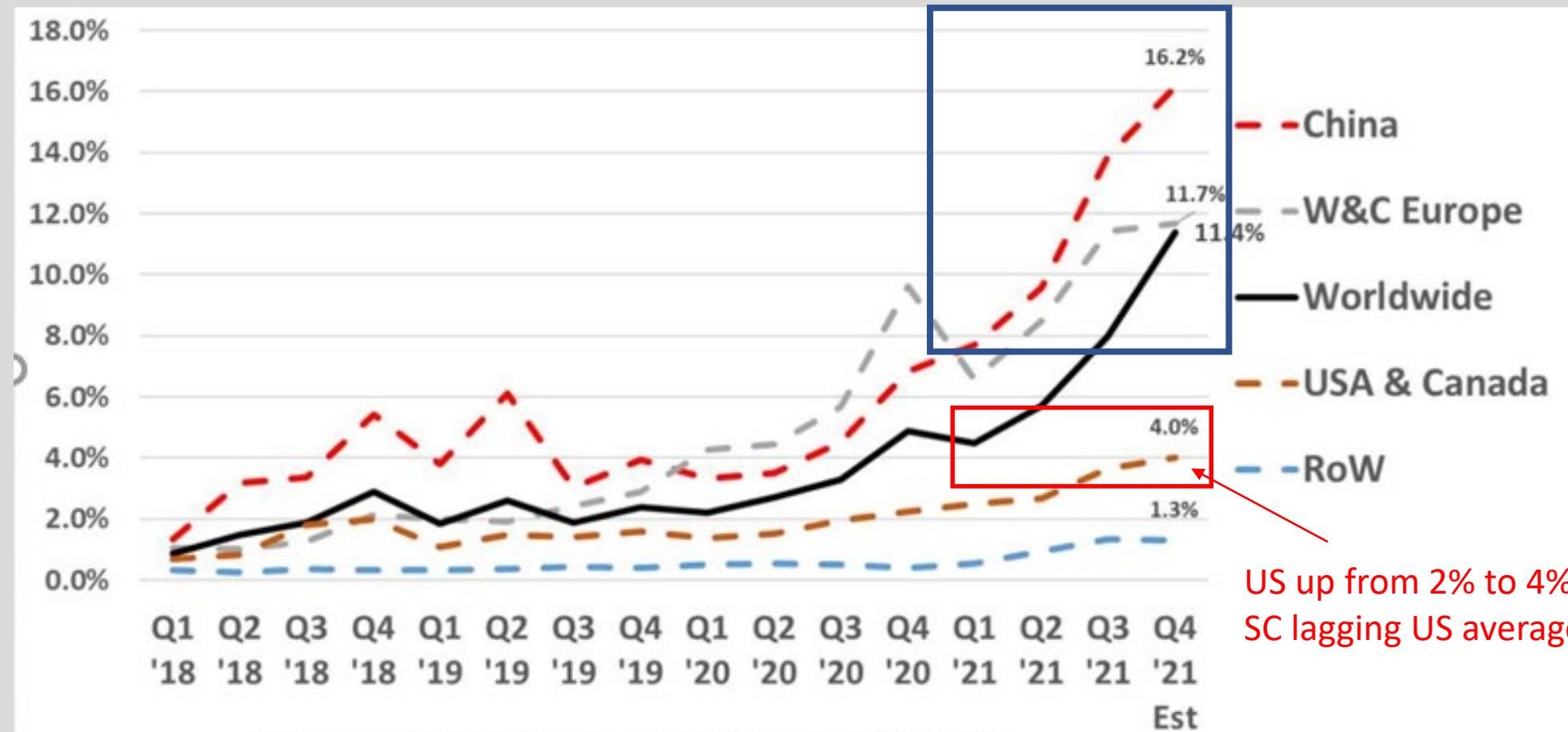
WESTY.WESTMORELAND@DOMINIONENERGY.COM

Director - Electrification
31 Years - Dominion Energy South Carolina and SCE&G

Clemson University
Mechanical Engineering '90

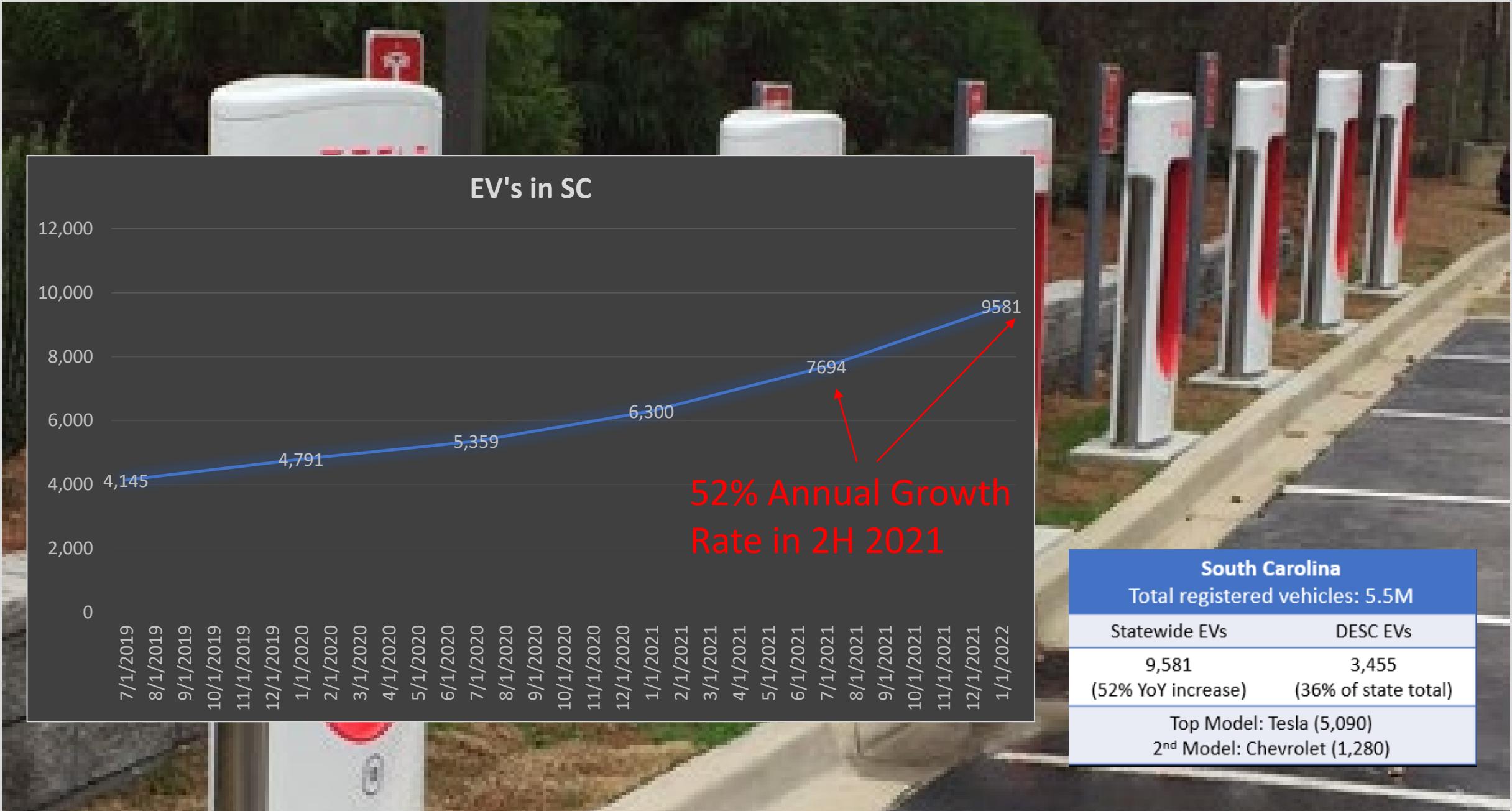


EV Share of Passenger Vehicle Market

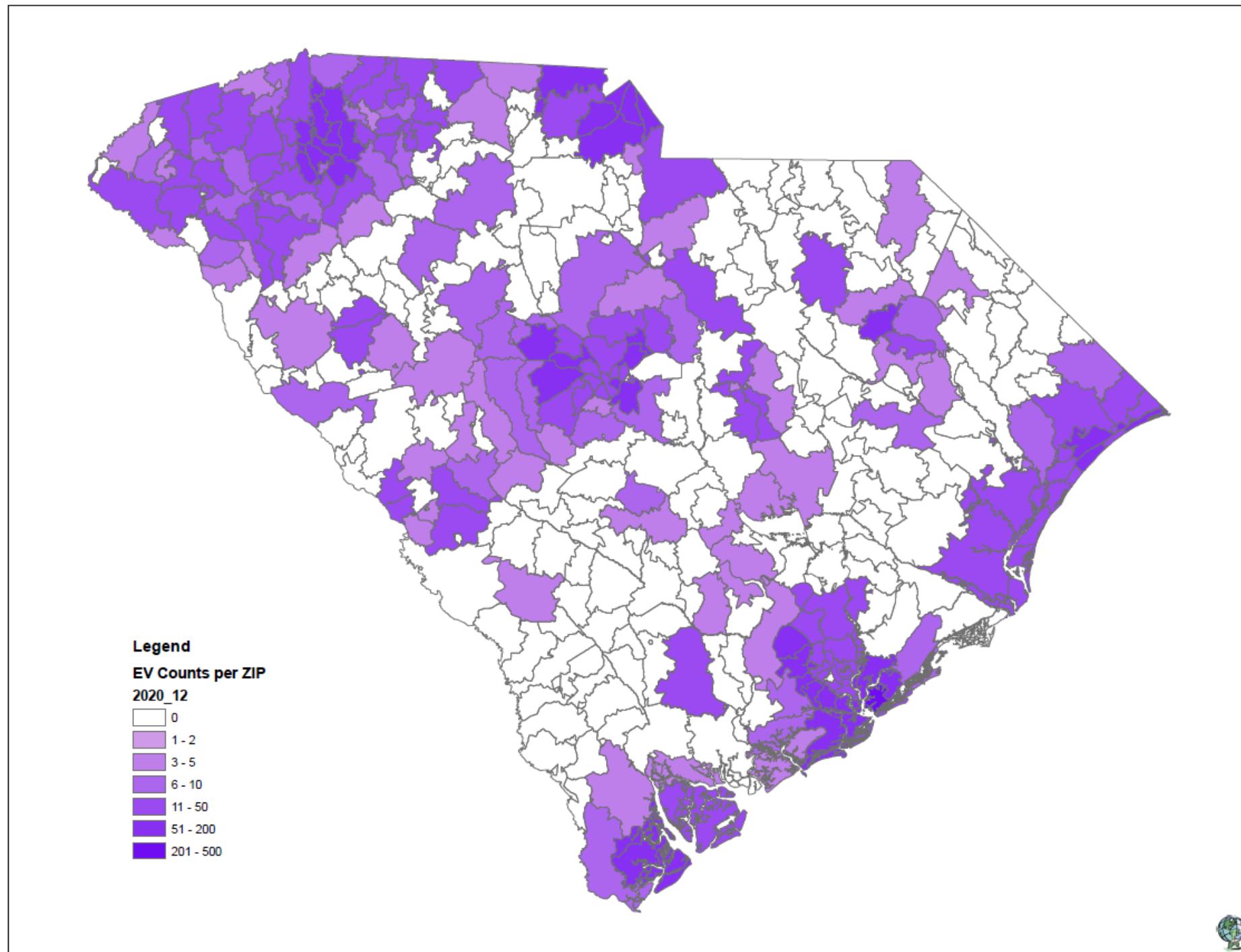


Major worldwide shift to EVs in 2021, especially China and Europe

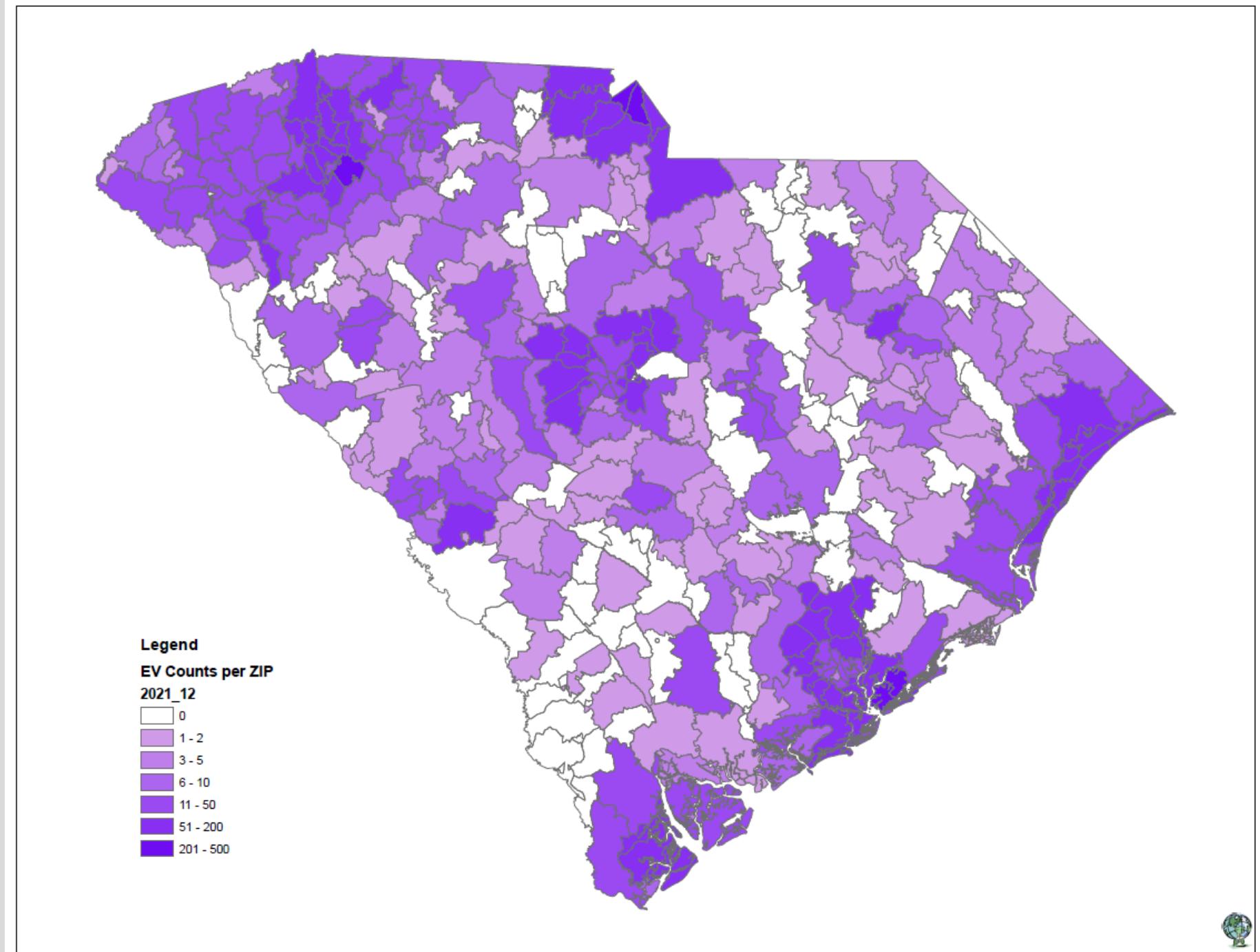
US up from 2% to 4% in 2021
SC lagging US average @ ~2%



EV volumes by area YE 2020



EV volumes by area YE 2021



Fuel Costs

ICE passenger vehicle 30 mpg \$3.50 per gallon = \$0.14 per mile

EV passenger 4 miles per kwh \$0.12/kwh = \$.03 per mile

79% Fuel Savings

Maintenance Costs

EV maintenance 50% savings as compared to ICE vehicles – CATBus Director (Clemson)

Regenerative Brakes so at least 50% savings on Brake Pads

90% less moving parts

No fluids to change except Windshield wiper

Environmental

BEV has no exhaust so Zero tailpipe emissions and greater air quality

Carbon emission crossover point of EV compared to ICE is 6,500 miles

DESC generation mix is Nuclear, Hydro, Natural Gas, Solar, and Coal

Idling not an issue with EV's

EV Charging Options

Level 1



VOLTAGE:
120V 1-Phase AC

AMPS:
12-16 Amps

CHARGING LOAD:
1.4-1.9 kW

CHARGING TIME:
3-5 Miles per Hour

Level 2



VOLTAGE:
208V or 240 V 1-Phase AC

AMPS:
12-80 Amps (Typ. 32 Amps)

CHARGING LOAD:
2.5-19.2 kW (Typ. 6.6 kW)

CHARGING TIME:
12-60 Miles per Hour

DC Fast Charge



VOLTAGE:
208V or 480V 3-Phase AC

AMPS:
>100 Amps

CHARGING LOAD:
50-350 kW

CHARGING TIME:
65-300 miles in 20 minutes

EV Charging

Level 2: 30 miles added/hour
240 V – 1^φ 7.6 KW AC



Level 3: (Fast)
480 V – 3^φ DC



Speed	Range Added in 15 Min Charge
50-75kW	42 Miles
150-175kW	125 Miles
250kW	210 Miles
350kW	290 Miles
500kW	415 Miles

Networked and Non-Networked EV Chargers

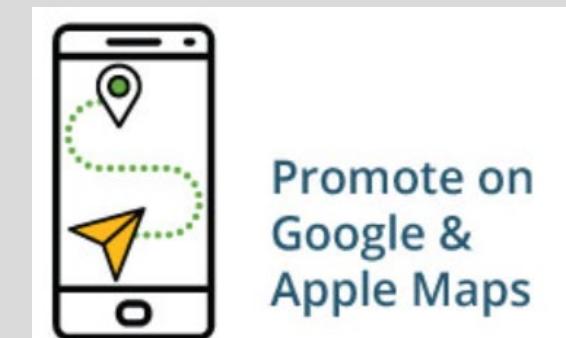
Non-Networked Chargers

Non-networked charging stations are **stand-alone units** that are not part of an EVSE network.

- Lower Cost
- No adjustments/controls
- Cannot set start/stop times



Networked Chargers

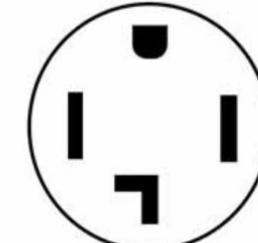


Over the air (OTA) Software updates
Reports (Usage, sessions)

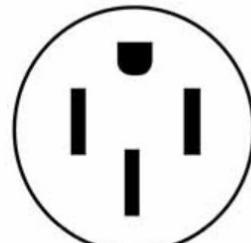
240 Volt AC Plug Types for Level 2 chargers



NEMA 6-50



NEMA 14-30



NEMA 14-50

Dryer

Oven



Level 3 DC Fast Charge Plugs/Connectors

DC Fast Charging Basics

SAE J-1772

Plug/Connector Types

CCS



ChaDeMO



Tesla



CCS-1 or J-1772
Is the Non-Tesla
Standard



EV Readiness Ordinances

- It is 5 times more cost to add a 240 V plug after Construction to a single-family residential home or Multi family complex
- Few Multi family residential complexes offer EV charging as an amenity making EV ownership very challenging for residents

Seattle passes EV readiness requirements

[City of Atlanta Passes “EV Ready” Ordinance into Law](#)

Orlando City Council Passes EV Make-Ready Code

Charging Workplace MUD Retail Public



NYC orders nearly 200 Mustang Mach-Es for police and first responders



NYC Refuse Truck

Ford Mustang Mach-E passes Mich. State Police test — the 1st all-electric vehicle to do so

First electric police car in W.Va. begins patrols



[Cary debuts electric Tesla Model Y patrol cars](#)

Fremont Police Department Expands Electric Fleet by Deploying Tesla Model Y Patrol Vehicle



Westport, Conn

Electric Fire Truck (Los Angeles)



Electric Off-Road Vehicles



Kion (Linde) Summerville, SC



Ferry Boats



Electric Locomotive



Thank You



Resilience Updates

By: Dale Morris,
Chief Resilience Officer

Public Comment Period