EV 101

Driving EVs into your community
WHO WE ARE: SOUTHERN ALLIANCE FOR CLEAN ENERGY

cleanenergy.org

ELECTRIFY THE SOUTH

CLEAN ENERGY REVOLUTION

Driving on Sunshine
WHY ELECTRIC VEHICLES (EVs)?

The transportation sector is now the largest source of carbon dioxide (CO₂) pollution in the United States. We can do something about that!
AGENDA

What is an EV?

Why Go Electric?

Models available

School buses, transit buses, medium-duty

How to charge an EV
What Is an EV?

INTERNAL COMBUSTION ENGINE

HYBRID

PLUG-IN HYBRID ELECTRIC VEHICLE

ELECTRIC VEHICLE

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Why Drive Electric? Lower Lifetime Ownership Costs

Typical driver saves $6,000 to $10,000 over the life of the vehicle,

vs.

owning a comparable gas-powered vehicle.

Source: Consumer Reports
**WHY DRIVE ELECTRIC? LOWER FUEL COSTS**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>COST PER MILE (CENTS)</th>
<th>1,000 MILES COST (DOLLARS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gasoline</td>
<td>14.5</td>
<td>$145</td>
</tr>
<tr>
<td>Electric</td>
<td>3.5</td>
<td>$35</td>
</tr>
<tr>
<td>Electric from Solar</td>
<td>1</td>
<td>$10</td>
</tr>
</tbody>
</table>

Assuming $3.35 cost per gallon of gasoline and 23 mpg
Assuming 33.7kWh/gallon and $.12/kWh and 115 mpg

Driving electric may add about $35-40 per month to your utility/power bill.
Driving electric will cut your fuel costs by more than half.

UC Davis Electric Vehicle Explorer tool for calculating annual vehicle energy costs: gis.its.ucdavis.edu/evexplorer/#/locations/start

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WHY DRIVE ELECTRIC: CONVENIENCE AND TIME SAVINGS

Save time and money

No oil changes

Very low maintenance

Powering them is convenient

Drop the pump
The average fuel efficiency in the US is 25.1 miles per gallon

The fuel efficiency for most electric cars is over 100 MPGe

Source: EPA, DOE
**WHY DRIVE ELECTRIC?**

**REDUCED EMISSIONS**

EVs emit over 60% less life cycle GHG emissions compared to gasoline vehicles.

In FL, the average EV produces only 4,261-4,132 lbs. of CO$_2$e per year, compared to 11,435 lbs. by gasoline powered vehicles.

An average EV on the road in the U.S. has the same greenhouse-gas emissions as a car getting 88 miles per gallon (MPG).

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Source: Department of Energy: AFDC, Union of Concerned Scientists
WHY DRIVE ELECTRIC: SUPERIOR TECHNOLOGY

EVs are a smoother ride

They are quiet

Electric vehicles are fun to drive

EVs have instant torque. The quickest car in the world is a Tesla Model S

Computer on wheels
MODELS AND TRENDS

59 models sold today
91 new models on the way
234 average mile range
$574B in global investment

Source: Atlas Public Policy

Source: FDOT EVMP
AVAILABLE MODELS

https://plugstar.com/
School Buses, Transit Buses and Medium-Duty
**Tax Credits and Rebates**

- Federal EV Tax Credit up to $7,500 for vehicles [https://afdc.energy.gov/laws/409](https://afdc.energy.gov/laws/409)

- Federal Tax Credit for EV charging station [https://afdc.energy.gov/laws/10513](https://afdc.energy.gov/laws/10513)

- Utilities have rebates [https://afdc.energy.gov/laws/state_summary?state=fl](https://afdc.energy.gov/laws/state_summary?state=fl)
**CHARGING YOUR EV**

### 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

![J1772 charge port](image)

### Level 2
- **Voltage:** 208V or 240V 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:** 60-80 Miles in 20 Minutes

![J1772 combo](image)  
![CHAdeMO](image)
CHARGING YOUR EV

- Level 1 Charging 110V (~1.4kW)
- 3-5 miles per hour
CHARGING YOUR EV

• Level 2 Charging 220V (7-19 kW)
• 25-60 miles per hour

J1772 charge port
CHARGING YOUR EV

• DC Fast Charging (50- 350kW)
• Up to 80% battery capacity per half hour

J1772 combo

CHAdeMO
CHARGING YOUR EV

Tesla Charging
• Level 1
• Level 2
• Supercharging
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QUESTIONS + STAY CONNECTED

ElectrifyTheSouth.org
Monthly newsletters, electric vehicle actions, EV blogs for new and established drivers, and more!

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