Challenging EV Myths

Separating fact from fiction about electric vehicles

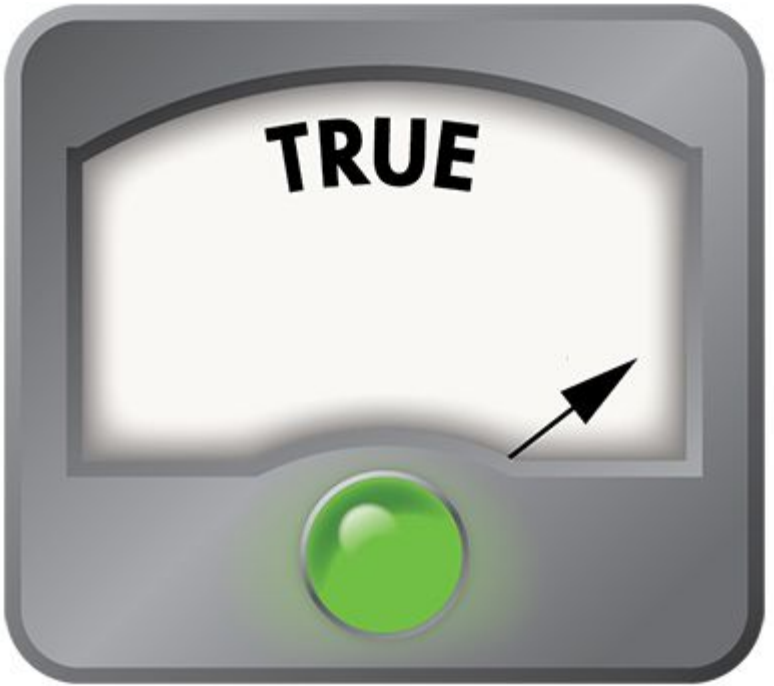
Presented by
Sustainable Moorestown

Some myths (or truths) we'll cover

1. EV fires are harder to put out
2. EVs catch fire more often
3. EV batteries cost more than the vehicle to replace
4. EV batteries wear out quickly
5. The grid can't handle EV charging
6. EVs are more expensive to own
7. EV tires wear out more quickly
8. EV ranges are too short
9. EVs lose most of their range in winter
10. There's nowhere to charge EVs
11. EVs can't charge in the rain
12. EVs can't road trip
13. EV charging is just as/more expensive than gasoline
14. EVs can't tow
15. Apartment dwellers shouldn't get an EV
16. EVs are worse for the environment
17. The government is giving money to buy EVs
18. You should consider an EV for you next vehicle purchase

EV fires are harder to put out

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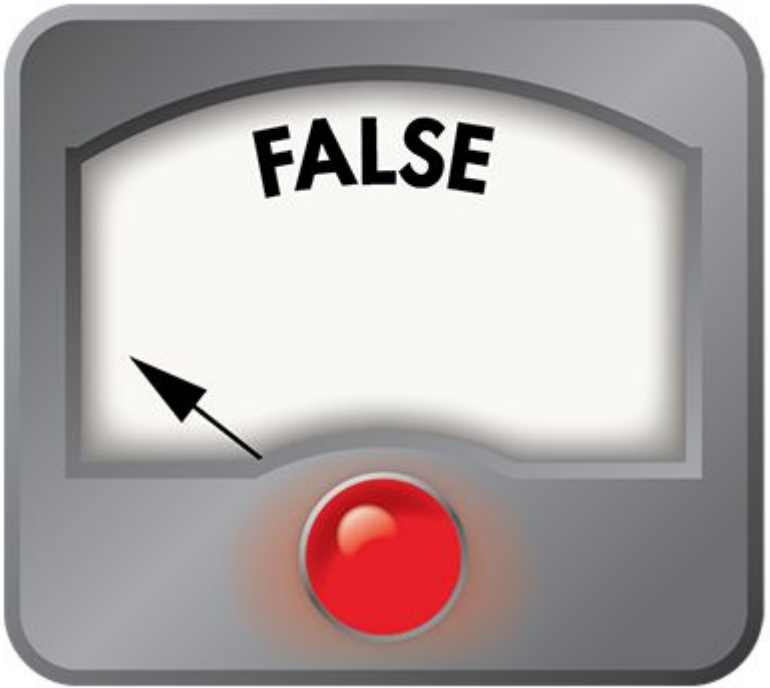


EV fires are harder to put out

- EV batteries can suffer from thermal runaway
- EV battery fires can burn hotter than fires in gasoline vehicles
- EV batteries can reignite after the fire has been put out
- EV fires require A LOT of water
- Fires in EVs not involving the battery can be handled like a fire in any other type of vehicle

EVs catch fire more often

EVs catch fire more often



EVs catch fire more often

- EVs catch fire far less often than traditional gas-powered vehicles
- Studies in the US show gas-powered vehicles are **60x** more likely to catch fire
- Studies from elsewhere in the world showed similar results, such as in Sweden, where gas-powered vehicles caught fire **20x** more often than EVs
- Hybrid vehicles are the highest risk of vehicle fires

EV batteries cost more than the vehicle to replace

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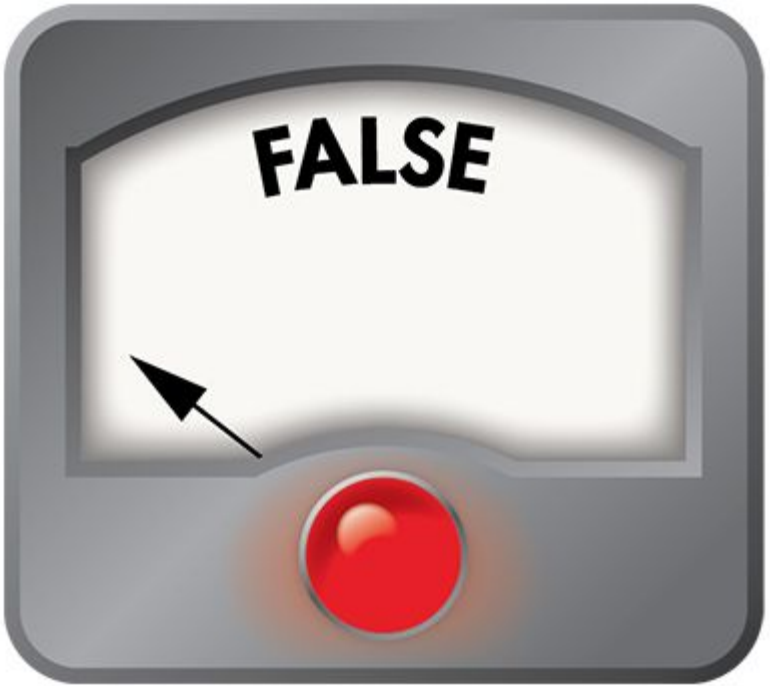


EV batteries cost more than the vehicle to replace

- EV batteries can cost from $4,000 to $30,000 to replace, depending on model and parts availability
- Most consumers will never see this, as EVs brands are required to provide an 8-year, 100,000 mile warranty on the battery, and some brands offer longer
- The costs of batteries has steadily fallen as the technology advances

EV batteries wear out quickly

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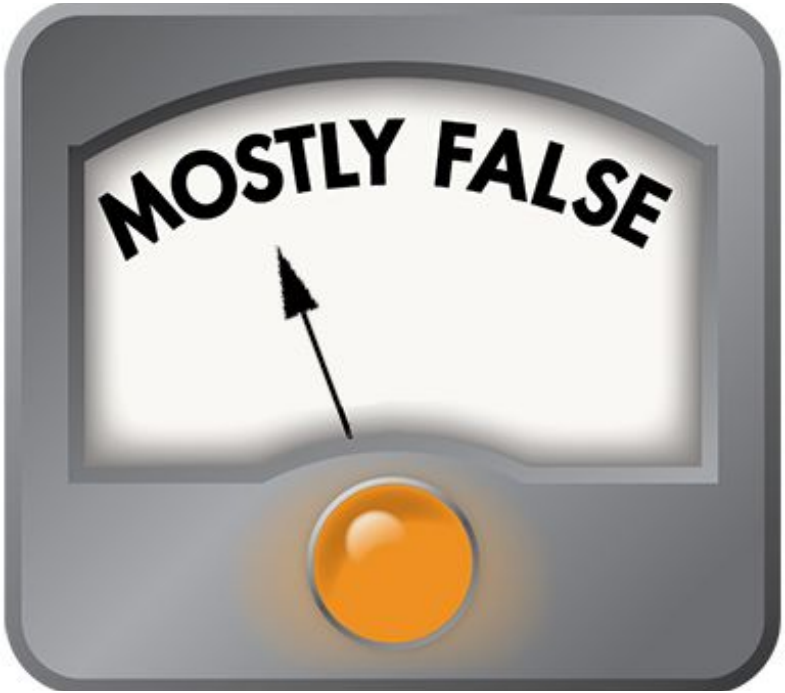


EV batteries wear out quickly

- EV batteries last 10 years or more
- Many real-world studies have shown EV batteries exceeded original engineering expectations in many cases
- Even degraded batteries can provide sufficient range for reasonable daily driving

The grid can't handle EV charging

The grid can't handle EV charging



The grid can't handle EV charging

- Demand from electric vehicles does not put much strain on the grid. A car can even be charged from a three-prong outlet.
- The EV transition will take many years, allowing power companies to keep up with changes in demand.
- EV charging can be shifted to happen at low-demand times.
- The grid must be built out thoughtfully and intentionally to handle widespread EV adoption.

EVs are more expensive to own

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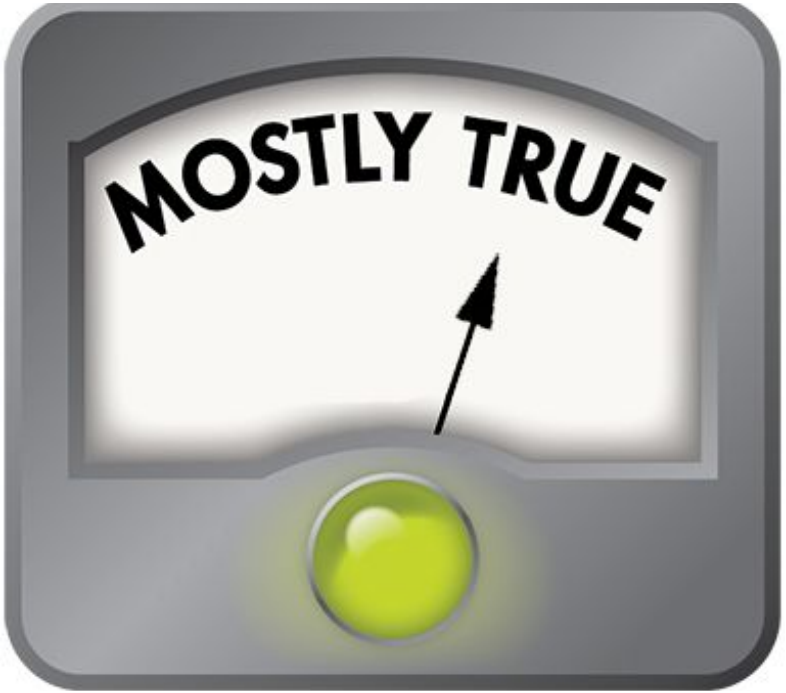


EVs are more expensive to own

- New EVs tend to cost more upfront, have higher registration and insurance costs, and depreciate more
- Used EVs are comparable in price, but still carry the higher registration and insurance costs
- Electric can be cheaper per mile than gasoline, and the lack of an engine means lower maintenance costs, like no oil changes
- It really depends on a lot of factors

EV tires wear out more quickly

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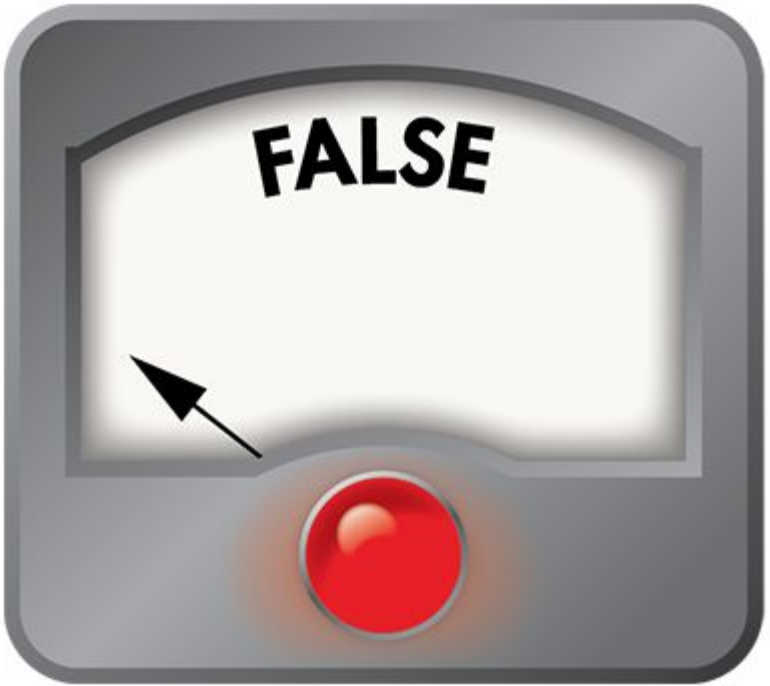


EV tires wear out more quickly

- EV tires have 20%-30% less lifespan than traditional tires (50K miles vs 30K-40K)
- Some of this is weight, but it is also instant torque and regenerative braking
- Proper inflation, correct alignment, regular rotation, and other regular maintenance can keep tires from premature wear
- Driving more gently can reduce tire wear and extend tire life

EV ranges are too short

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EV ranges are too short

- Most EVs available today have ranges of 200+ miles on a charge, and many have 300+ mile ranges.
- The average American drives 30-40 miles per day
- Round trips of less than 200 miles from here:
  - Philadelphia, PA: 27.4 miles
  - New York City, NY: 170.4 miles
  - Cape May, NJ: 176.8 miles

EVs lose most of their range in winter

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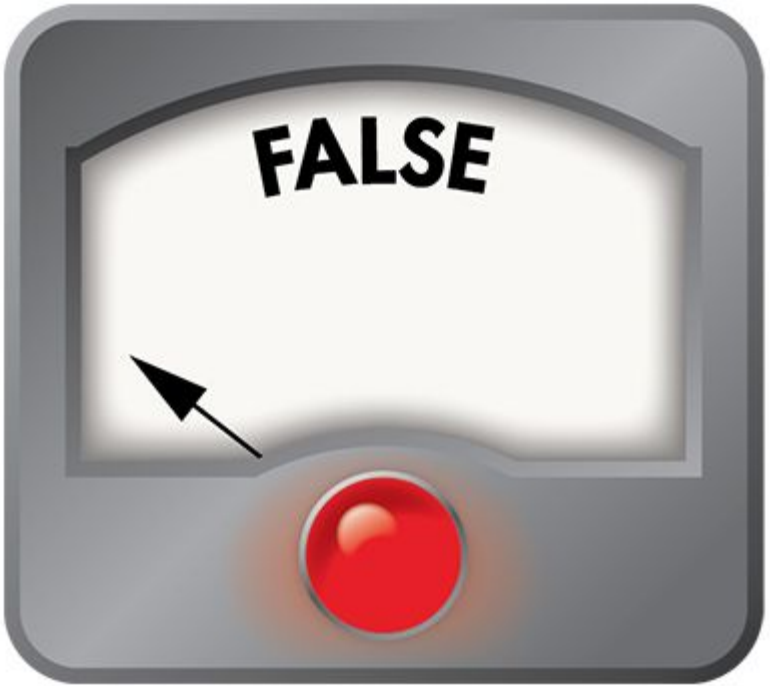


EVs lose most of their range in winter

- EVs lose 20%-30% of their range in the winter
- This still leaves enough range for average daily trips
- Many owners plug in daily, filling the battery even with the extra lost range
- Some of the lost range goes to heating the battery and cabin. Preconditioning the vehicle while plugged in can reduce the range loss in cold weather

There's nowhere to charge EVs

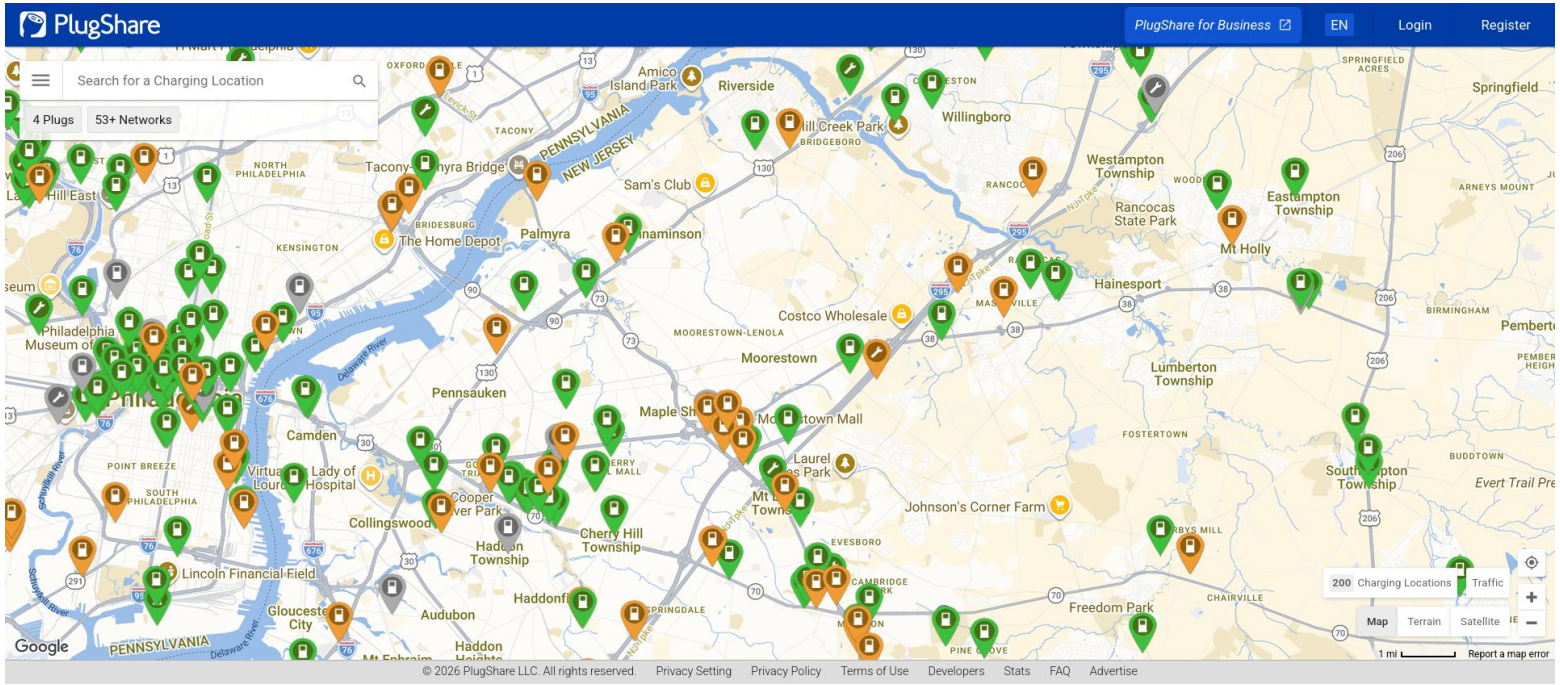
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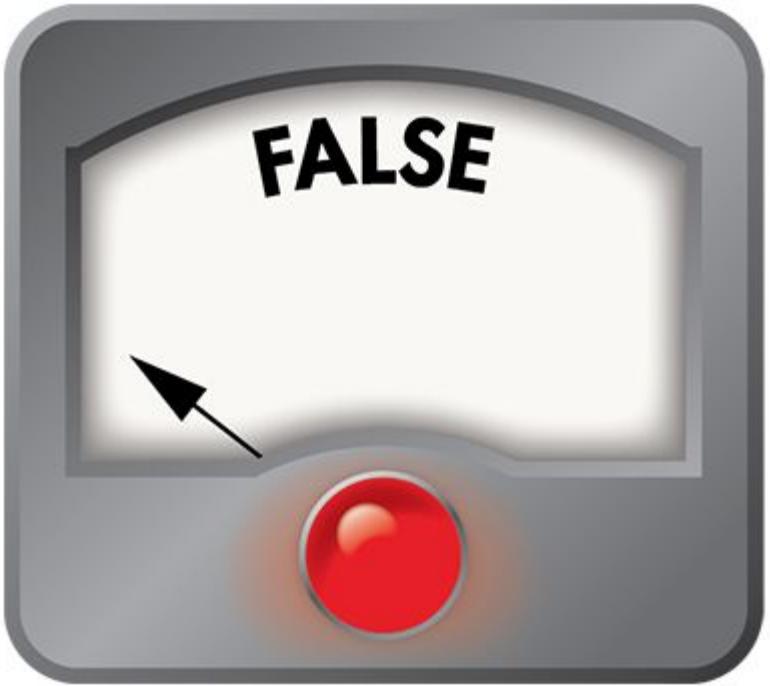
- There are over 80,000 public charging stations in the US
- 1,000 new public chargers are coming online every week
- Many EV drivers have charging units installed at home that can refill an EV overnight
- Some workplaces offer charging as a perk
- For basic charging, any 120V three-prong outlet can charge a car in a pinch (though it will be slow)

There's nowhere to charge EVs



EVs can't charge in the rain

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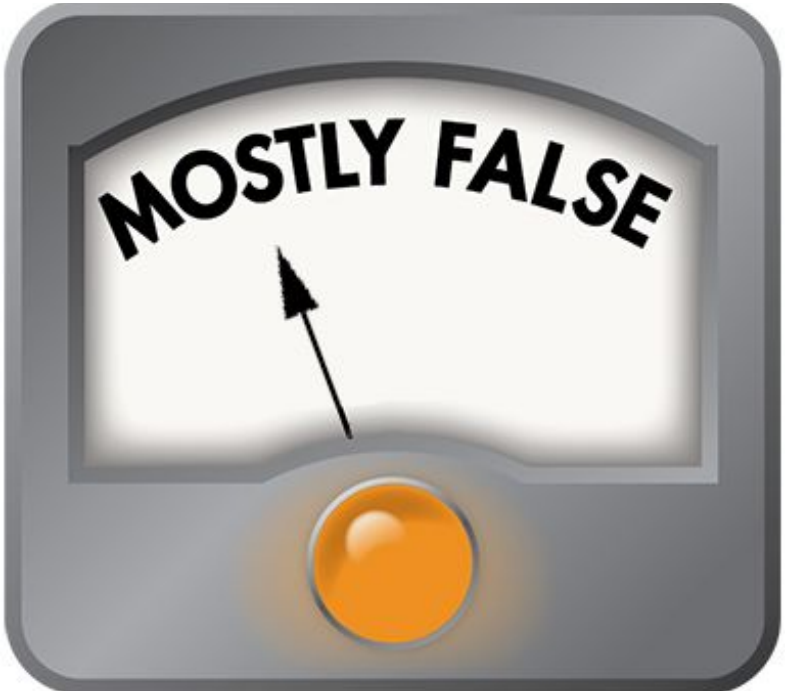


EVs can't charge in the rain

- EVs can charge in the rain, snow, heat, or any other typical weather condition
- EV chargers have been designed with safety in mind, including various ambient conditions as well as preventing shocks when damaged

EVs can't road trip

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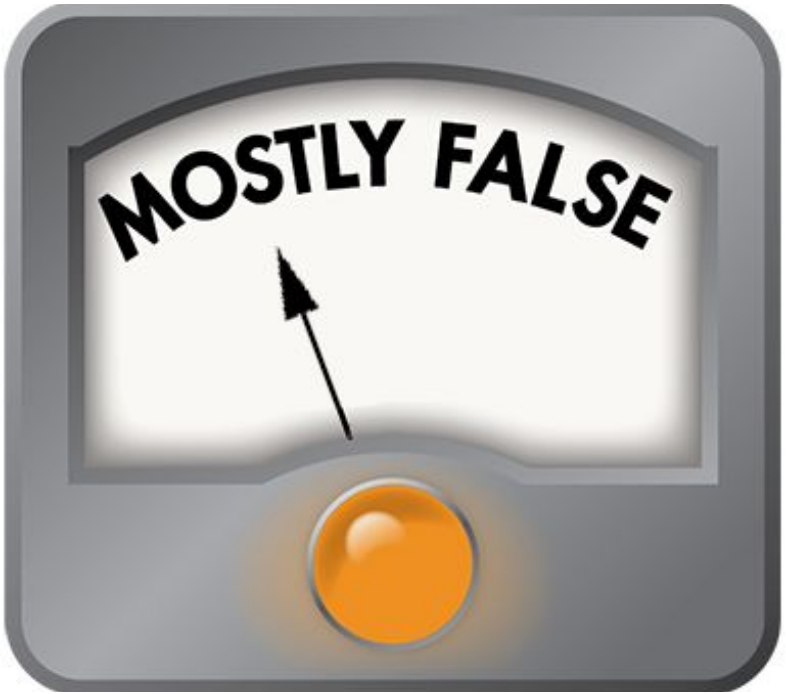


EVs can't road trip

- With 200+ miles of range, many destinations are in reach
- Charging stops usually take 20-30 minutes to refill the battery, enough time to use the restroom, or grab a bite to eat
- Best to plan charging stops ahead of time
- Some parts of the country still lack sufficient charging to really road trip across
- Destination chargers can make road tripping easier, but aren't always available

EV charging is just as/more expensive than gasoline

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EV charging is just as/more expensive than gasoline

- Public charging can be expensive, often $0.50/kWh or more
- Charging at home, at work, or at less expensive chargers can save a lot of money
- Time of use rates and other programs can reduce the cost to charge at home even more
- *Shh, don't tell anyone, but sometimes you can find free charging in certain locations*

EVs can't tow

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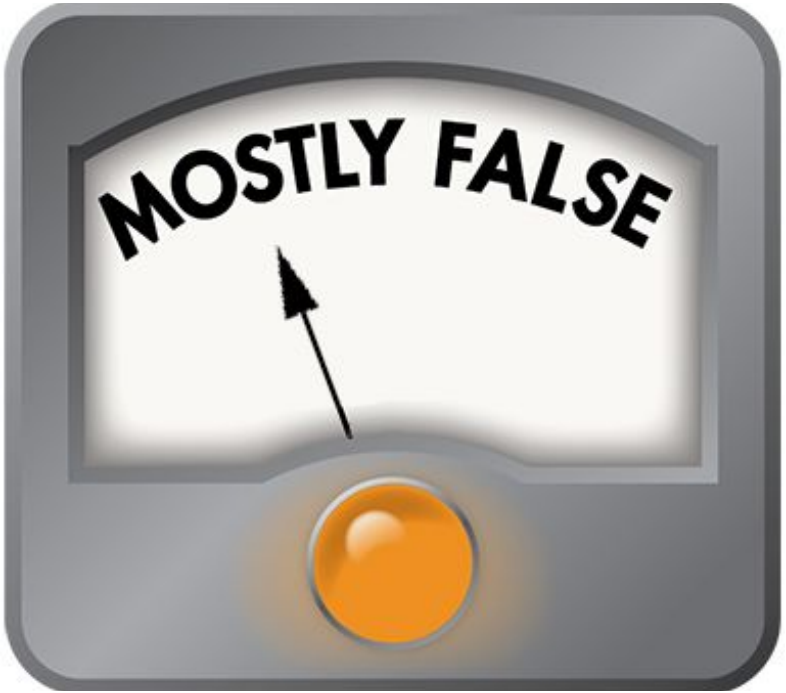


EVs can't tow

- Many EVs, such as electric SUVs and pick-ups, are rated for towing 10,000lbs+ of weight
- The real challenge is the range loss, around 50%. Towing reduces the aerodynamics and efficiency of the vehicle
- Shorter trips are realistic, even with a charging stop, but longer trips mean a lot more stops, and trips to places without charging could mean getting stranded

Apartment dwellers shouldn't get an EV

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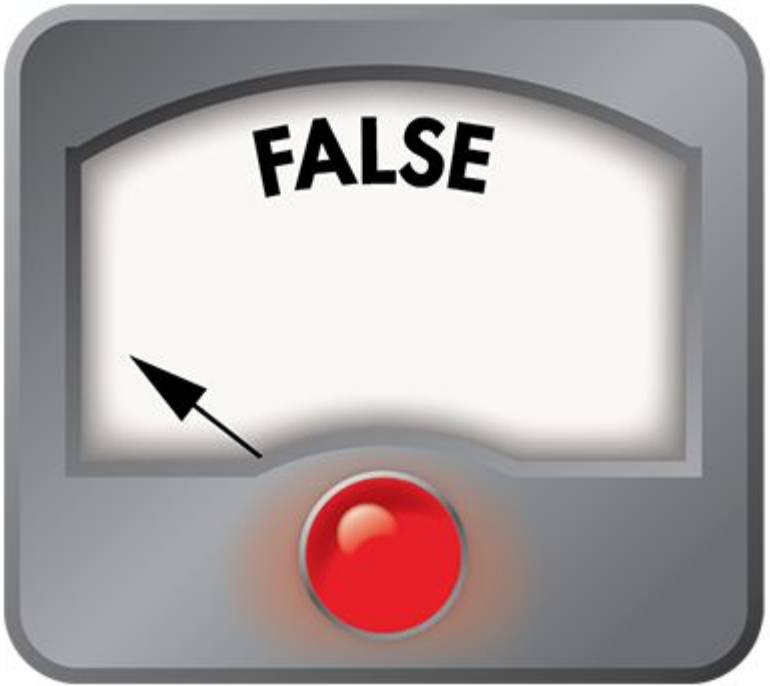


Apartment dwellers shouldn't get an EV

- Apartment complexes new and old are putting in EV chargers
- Workplace charging can be sufficient even if it isn't available at home
- Relying on public charging for everything can be expensive and time-consuming
- If that doesn't bother you, go for it! But you won't get all the benefits of owning an EV

EVs are worse for the environment

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EVs are worse for the environment

- EVs do not burn fossil fuels, and so have no tailpipe emissions and put out no greenhouse gasses
- Even if powered from a coal plant, EVs are still cleaner than burning gasoline
- Mining for EV battery components in environmentally intensive, but through the overall lifespan of the vehicle, comes out cleaner than a gas-powered vehicle

The government is giving money to buy EVs

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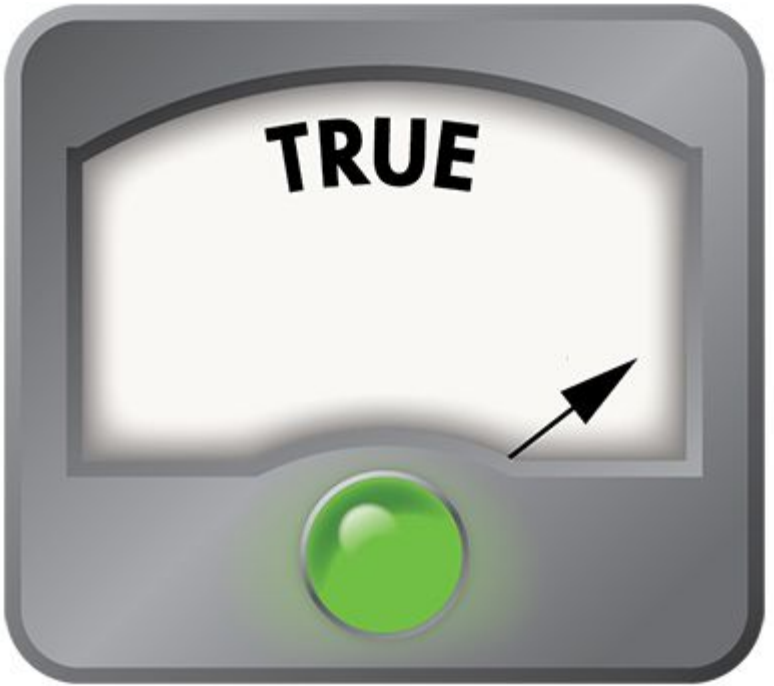


The government is giving money to buy EVs

- Federal tax credits ended on September 30, 2025
- Some NJ credits were phased out, but the Charge Up New Jersey program does offer some incentives
- PSE&G offers incentives toward installing an at-home charger

You should consider an EV for you next vehicle purchase

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