



Electric Vehicles: Here Today!

March 2003

Electric Auto Association (EAA)

"Promoting the use of electric vehicles since 1967"

Solectria Force



GM EV1



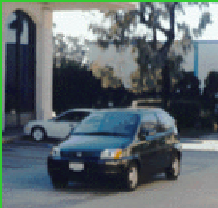
Toyota RAV4-EV



Chrysler Epic



Honda EV Plus



Nissan Altra



Corbin Sparrow



Why Electric Vehicles?

EVs (electric vehicles) produce zero tailpipe emissions and up to 99% lower emissions than gasoline and diesel vehicles. EVs help America reduce its dependence on oil.



There are thousands of EVs registered across the country. New battery technology gives full-function EVs a range of 80-120 miles per charge and allows them to travel at highway speeds. For most multi-car households, an EV is the perfect second car. Studies in California have shown that 80% of commuters travel less than 40 miles per day. Why wait? Demand EVs now!

We know that there is a market for EVs. Every EV produced is immediately sold or leased! While the initial purchase price for EVs tends to be higher than gasoline-powered vehicles, this is due to low production volume. Prices always go down when volume goes up – Henry Ford knew that long ago! However, the higher cost of EVs is recouped through significantly lower fuel and maintenance expenses.

The fact is that EVs are a clean, efficient alternative to conventional vehicles – using technology readily available today!

EVs, Hybrids, and Fuel Cell Vehicles

There are primarily three electric vehicle technologies in America today: electric vehicles (EV), hybrid gasoline/electric vehicles (Hybrid), and Fuel Cell vehicles.

EVs draw electricity from batteries to power an electric motor to propel the vehicle, generating zero emissions. Hybrid gas/electric vehicles use both a battery-powered electric motor and a conventional gasoline-powered engine for propulsion. Hybrids generate tailpipe emissions, but less than its gasoline counterpart. Fuel cell vehicles use an onboard fuel cell to generate electricity to power an electric motor to propel the vehicle. Fuel Cell vehicles are emissions free, but decades away from a commercial market.

EV technology is at the core of all three. But a big difference between EVs, Hybrids, and Fuel Cell vehicles is the method used to generate the electricity that powers them. The batteries in an EV are charged using standard household electricity and electricity captured by regenerative braking. An EV can be 'filled-up' at home. The battery in a Hybrid is charged internally by electricity generated by the gasoline engine and electricity captured by regenerative braking. A Hybrid can be 'filled-up' at the neighborhood gas station. The electricity that propels a Fuel Cell Vehicle is generated from the combustion of hydrogen in its onboard fuel cell. There is no infrastructure for dispensing hydrogen into vehicles; therefore, while this vehicle technology is promising, it is not yet practical.

About the EAA

The EAA is a non-profit educational organization that promotes the advancement and widespread adoption of electric vehicles. EVs are a clean, quiet alternative to conventional gasoline-powered vehicles, which emit noxious gases.

"EAA EV drivers
have logged over
3 million clean
miles"

Ford Ranger



AC Propulsion tZero



Th!nk City



FeelGoodCars ZENN



GEM



Mike's E-Bike



Segway Scooter



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Earth's Finite Resources

US oil production has been declining since 1970 (since 1998 in Alaska) and US imports have risen by 67% since 1970¹. The Union of Concerned Scientists states the US (4% of the earth's population) consumes 25% of the world's total oil production². Our demand grows daily. We *must* have alternatives!



Electric Vehicle Information

Why EVs?

EVs offer the best and cheapest alternative to petroleum-based transportation. Driving an EV helps improve the quality of life for all Americans. They are fun to drive. It is patriotic!

Are EVs safe?

Yes. EVs must pass all state and federal safety standards.

Can EVs go fast?

Yes! For real speed, check out the National Electric Drag Racing Association (nedra.com).

EVs just move the pollution, don't they?

No. Even including the effects of electricity generation, the California Air Resources Board reports that **EVs are 98% cleaner than the average 2002 new car and 95% cleaner than a SULEV**³ – and that's not including the environmental impact of oil refining! EVs are a proven "clean and green" choice.

Are EVs practical?

Yes. Studies show that 80% of daily commuting is less than 40 miles. Internal combustion vehicles generate the greatest amount of pollution during the first 20 minutes of operation. EVs require no warm-up period and are the perfect transportation option.

Where do you "fill up" an EV?

EVs are primarily charged at home overnight, using surplus (low-cost) electricity. There are also many public charging locations (evchargernews.com).

Are EVs expensive to purchase?

Not when you consider the total lifetime costs⁴. As production volumes increase, EVs will cost no more than conventional cars and trucks in every price range. Many states and the federal government recognize this low-volume pricing issue and offer incentives to reduce the initial cost of buying or leasing an EV.

Are EVs expensive to operate?

No. A Toyota RAV4-EV costs less than 3 cents/mile to operate. EVs are nearly maintenance free (no smog checks, oil changes, or tune-ups). At \$2.00 per gallon, a gasoline-powered car must average 67 mpg to match this!

Do batteries pollute landfills?

The Battery Council International reports that 93% of *all* battery lead is recycled. A higher recycling rate than newspapers (55%) or aluminum cans (42%). Typical new lead-acid batteries contain 60-80% recycled lead and plastic⁵. A true recycling success!



Electric Auto Association

¹ <http://www.wri.org/wri/climate/anwr.html>

² <http://www.ucsusa.org/publication.cfm?publicationID=492>

³ <http://www.arb.ca.gov/msprog/zevprog/factsheets/evfacts.pdf>

⁴ http://www.epri.com/corporate/discover_epri/news/downloads/EPRI_AdvBatEV.pdf

⁵ <http://www.batterycouncil.org/recycling.html>