



Electric Vehicles Today!

May 2005

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.



Thousands of EVs are registered across the country. New battery technology gives full-function EVs ranges of 80-120 miles per charge traveling at highway speeds. An EV fits perfectly into multi-car households; the EV for everyday travel, and a hybrid or conventional car for extended trips. Studies have shown that 80% of commuters travel less than 40 miles per day. How about *you*? Could 100 mile range *and* convenient refueling at home meet *your* daily driving needs?

We know there is a market for EVs. Every EV produced is immediately sold or leased! EVs are high performance vehicles and priced competitively when measured against comparable gasoline-powered vehicles. In addition, fuel and maintenance expenses are significantly lower for EVs. And talk about lasting value, an electric drive motor provides as many as 1,000,000 miles of service. The initial purchase price for EVs will drop as production volume increases. Prices always go down as volume goes up - Henry Ford knew that long ago! In the meantime, EV owners enjoy the financial benefits of significantly lower fuel and maintenance expenses.

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; organizes public exhibits and events of electric vehicles to educate the public on the progress and benefits of electric vehicle technology.

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

Ford Ranger



AC Propulsion tZero



Th!nk City



Commuter Cars
Tango



GEM



Mike's E-Bike



Segway Scooter



E-mail: info@eaaev.org

Web: www.eaaev.org

Rev. 20050516

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!

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 90% cleaner than the newest (model year 2005) and cleanest conventional gasoline-powered car vehicles**³ – 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. Currently there are no EVs available from the major auto makers. Toyota's RAV4-EV stopped production in Nov 2002 when they sold their last one. Used EVs are sometimes available. Keep an eye on companies like Commuter Cars – they're taking orders today for a Tango.

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! And today's gas prices are higher than \$2.00/gal!

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://pubs.wri.org/pubs_content_text.cfm?ContentID=1219

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

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

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

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