

The Sustainable Transportation Initiative

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What Do We Need to Do?

Transition to a sustainable form of transportation by:

1. Increasing the use of Electric Vehicles (EVs)
2. Increasing the use of renewable energy

Why Do We Need to Do This?

1. Climate Stabilization

- Over 40% of our greenhouse gas emissions come from transportation¹

2. Energy Independence

- 60% of our transportation energy is imported²

3. Asthma Reduction

- Transportation emissions can trigger asthma, which is a leading cause of chronic work and school absence³

4. Job Creation

- We are losing jobs to countries who are creating more efficient vehicles⁴, but we can leapfrog them

Our current mode of transportation is not sustainable.

How Should We Do This?

- 1) Provide incentives for people who consume the least non-renewable fuels, and to those who provide the products that enable them to do so.
 - Provide incentives for electric vehicles; California Assembly Bill 493 is an example of a greenhouse gas based vehicle tax incentive
 - Provide incentives for renewable energy generators -- such as solar and wind -- and compensate end users when they produce more than they use
 - Provide incentives for renewable energy utility bills

Examples of Current Production EVs



AC Propulsion eBox (Toyota Scion xB EV):
120 mile range, 2 hour charge time with
Lithium Ion batteries; \$55K plus Scion xB



Tesla Motors Roadster: 220 mile range, 3.5
hour charge time with Lithium Ion batteries;
\$98K

Examples of past production EVs that were sold and can still be found for sale used



Chevrolet S10 EV: 95 mile range, 9 hour charge time with NiMH batteries



Ford Ranger EV: 82 mile range, 9 hour charge time with NiMH batteries



Solectria Force (Chevrolet Metro EV): 84 mile range, 9 hour charge time with NiMH batteries



Toyota RAV4 EV: 94 mile range, 5 hour charge time (2002 model) with NiMH batteries

Examples of past production EVs that were leased only and can not be found used



Chrysler EPIC (Caravan EV): 79 mile range, 9 hour charge time with NiMH batteries



General Motors EV1: 140 mile range, 7 hour charge time with NiMH batteries



Honda EV Plus: 80 mile range, 8 hour charge time with NiMH batteries

Examples of Prototype EVs



AC Propulsion tZero: 302+ mile range, 3.5 hour charge time with Lithium Ion batteries



Phoenix Motorcars SUT: 130 mile range, 10 minute charge time with Lithium Ion batteries

Examples of EV Conversions



Hundreds more with specifications can be seen on the EV Discussion List Photo Album.

How Should We Do This?

- 2) Install public EV charging stations that are powered by renewable energy.
 - Install slow charge stations in locations that attract people from other towns who stay for a while
 - Install fast charge stations along freeways for people who are trying to get somewhere
 - Cover charging stations with photovoltaic panels

Example of PV Covered EV Public Charging



Vacaville, CA

How Should We Do This?

- 3) Require all government vehicles to maximize their renewable energy use.
 - Applicable laws may already be in effect, but implementation could be increased by utilizing new and emerging battery technologies
 - Applies to Battery Electric Vehicles (BEVs) as well as Plug-in Hybrid Electric Vehicles (PHEVs)
 - Applies to mass-produced EVs as well as EV conversions

Next Steps

1. Lobby for the following:
 - a. Renewable energy vehicle purchase incentives
 - b. Renewable energy generator purchase incentives
 - c. Renewable energy utility bill incentives
2. Work with government fleets to purchase EVs and convert their vehicles to EVs using new and emerging battery technologies.
3. Work with governments and businesses to install public EV charging stations.
4. Work with schools and businesses to train people how to convert and maintain EVs.

Appendix

References

1. Transportation accounted for 42% of greenhouse gas in Sonoma County in 2000, according to page 12 of the Climate Protection Campaign's January 2005 report "Greenhouse Gas Emission Inventory for all sectors of Sonoma County, California", posted at http://www.climateprotectioncampaign.org/news/documents/AP_INVEN.PDF.
2. 60% of US oil consumption in 2006 came from imports, according to the US Government Energy Information Administration Basic Petroleum Statistics, posted at <http://www.eia.doe.gov/neic/quickfacts/quickoil.html>.
3. Asthma cost \$12.7B in 1998 and can be caused by vehicle exhaust, according to the Center for Disease Control "Asthma Speaker's Kit", posted at <http://www.cdc.gov/asthma/speakit/default.htm>.
4. Domestic auto jobs dropped 16% between 2000 and 2005, according to the US Department of Commerce Office of Aerospace and Automotive Industries March 2005 report "US Automotive Industry Employment Trends", posted at <http://www.ita.doc.gov/td/auto/domestic/staffreports/Jobloss.pdf>.

All of the most fuel efficient cars are made by Asian and European manufacturers, according to the US Department of Energy 2008 report, "2008 Fuel Economy Guide", posted at <http://www.fueleconomy.gov/feg/FEG2008.pdf>