



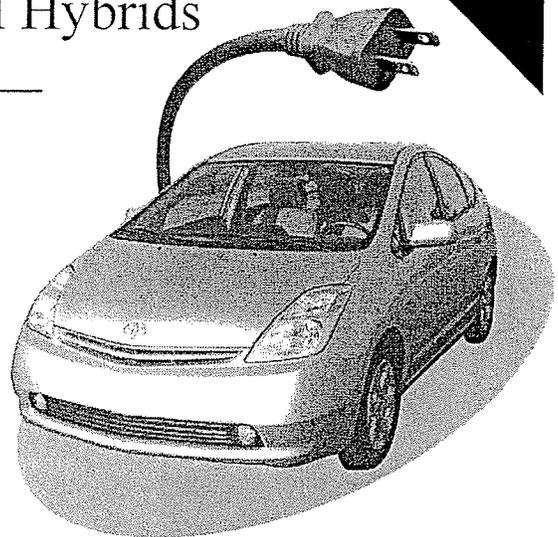
**Plug-In Hybrid
Electric Vehicles
(PHEVs)**

Plug-In Hybrid Municipal Plan

Building a Market for Gas Optional Hybrids

Plug-In Hybrids: The near term solution

- PHEVs use the same technology as the popular hybrids on the road today, but have a larger battery that can be recharged by plugging into a standard 120-volt outlet.
- A hybrid gets about twice the fuel economy of a conventional car. A plug-in hybrid gets about twice the fuel economy of a hybrid.
- An “electric” gallon of gas will cost 70-80 cents at prevailing electric rates versus the \$2.55 national average gasoline price.
- PHEVs outfitted with a battery pack providing a 40-mile electric range could accommodate more than 60% of the total annual miles traveled by the average U.S. driver — using the all-electric mode.
- The electric infrastructure is in place and available. Over 40% of the generating capacity in the U.S. sits idle or operates at reduced load overnight, when most PHEVs would be recharged. Our power system could charge tens of millions of PHEVs without requiring new plants.
- Wind generated electricity is produced most readily overnight, providing a perfect fit between PHEVs and pollution-free generation.
- Prototype PHEV sedans and SUVs exist today. Among others, DaimlerChrysler has developed a prototype PHEV commercial van, with testing planned by the end of 2006.

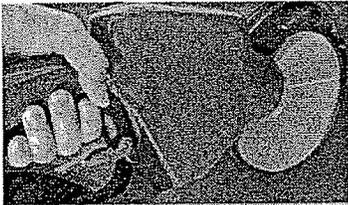


Municipal Plan

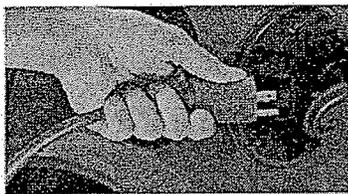
- **Establish community educational campaign: PHEVs will reduce oil imports, smog in cities, and boost economic development**
- **Raise \$50-\$100 million in incentive funding for PHEVs for government, business and citizens**
- **Establish national “Plan to Purchase” PHEV Web site.**

Plug-In Hybrid Electric Cars Enjoy **Broad Support**

Pour in



or Plug in



You choose.

You can pour-in for \$2.55 a gallon, or plug-in for as little as 75 cents* a gallon, and drive knowing your car is not part of the problem, but part of the solution!

*Based on Austin Energy electric rates

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“If by 2025, all cars on the road are hybrids and half are plug-in hybrids, U.S. oil imports would drop by 8 million barrels per day (mbd). Today, the United States imports 10 mbd and is projected to import almost 20 mbd by 2025.”

— *Set America Free initiative by coalition of prominent individuals and non-profit organizations concerned about the security and economic implications of America's growing dependence on foreign oil*

“The attractiveness to the consumer of being able to use electricity from overnight charging for a substantial share of the day's driving is stunning. The average residential price of electricity in the U.S. is about 8.5 cents/kWh, one-quarter of the cost of \$2/gallon gasoline. So, powering one's vehicle with electricity purchased at such rates is roughly the equivalent of being able to buy gasoline at 50 cents/gallon.”

— *Former CIA Director James Woolsey and former Secretary of State George Schultz*

“When you consider that 78 percent of Americans live within 20 miles of their jobs, and that most car trips — commuting, shopping and dropping off the kids at soccer games — are less than 20 miles, plug-in hybrids could run solely on electricity for these types of short trips and commutes.”

— *Consumer Reports*

“Our studies show a strong market preference for plug-in hybrid vehicles when performance is equal and the cost difference is reasonable.”

— *Bob Graham, Area Manager, Transportation, EPRI*

“We think the transportation fuel sector should be diversified by utilizing more electricity as a fuel (for) plug-in hybrids that can get 100 miles per gallon and allow you to run on electricity alone for 20 to 30 miles, then shift to the combustion engine.”

— *Gal Luft, Director of the Institute for the Analysis of Global Security, an energy-security think tank in Washington*

“We believe that the 50 largest cities in this country, united in purpose, can build a groundswell of demand sufficient to entice carmakers to mass produce what is the logical near term response towards the critical goal of energy independence. We intend to set the example in Austin, Texas.”

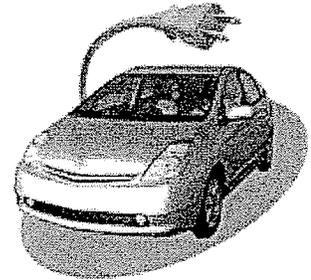
— *Will Wynn, Mayor of Austin, Texas*



Plug-In Hybrids

Gas: Optional

Plug-In Hybrid Electric Vehicles (PHEVs) are outfitted with a battery pack sufficient to power the vehicle from 20 to 60 miles on battery charge alone. Considering that half the cars on America's roads are driven 25 miles a day or less, a plug-in with a 25-mile range battery could eliminate gasoline use in the daily commute of millions of Americans. The cost of an equivalent electric gallon of gas is estimated to be less than \$1.00.



PHEV technology is already available and functioning. DaimlerChrysler is producing a Sprinter Van prototype with an all-electric range of 20 miles. Also on the road are existing standard hybrids that have been converted to plug-ins.

The Difference Between Standard Hybrids and Plug-in Hybrids

Basically, PHEVs use the same technology as the popular hybrids on the road today, but have a larger battery that can be recharged by plugging into a standard home outlet.

Key PHEV Attributes:

- Gets about twice the fuel economy of a conventional vehicle and 30-50% better fuel economy than a standard hybrid
- Plugs into a standard (120-volt) home electrical outlet to receive charge
- Depending on design and battery size can be driven 20 to 60 miles without the use of gasoline

Flexible Fuel PHEVs

PHEV technology can also be combined with existing flexible fuel technology to increase fuel efficiency even further as well as further reduce greenhouse gases and imported oil.

Technical Details

Both standard hybrids and PHEVs are powered by a combination of electricity and liquid fuels; however, PHEVs draw their charge not only from the engine and captured braking energy but from the electrical grid as well when they are plugged into a standard electrical socket. PHEVs have liquid fuel tanks and internal combustion engines, so they do not face the range limitation posed by electric-only cars.

Want to know more about PHEVs? Visit our Resources section. Or, see "All About Plug-in Hybrids" at CalCars.org, a California-based initiative working to promote the adoption of these efficient, non-polluting autos.

Partner Cities in the Plug-In Partners National Campaign

Alameda, CA

Berkeley, CA

Burbank, CA

City of Sunnyvale, CA

Irvine, CA

Los Angeles, CA

Oakland, CA

Sacramento, CA

San Francisco, CA

Santa Barbara, CA

Shasta Lake, CA

Town of Los Altos Hills, CA

Tulare, CA

+ 13 other cities nationwide, and growing.