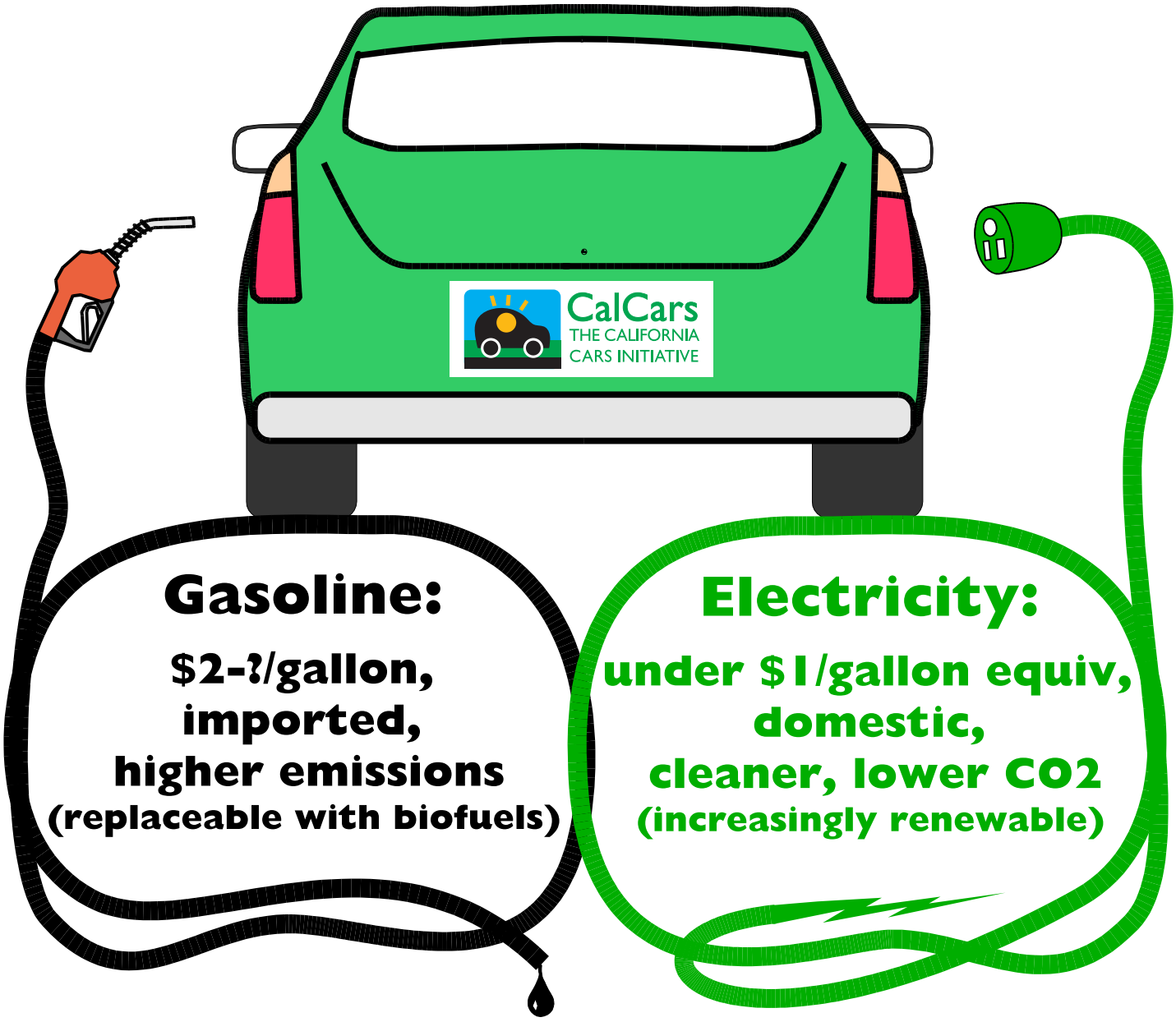
100+MPG plug-in hybrids: all-electric daily driving! gas for unlimited range



One way or another, you're plugging it in.

The California Cars Initiative www.calcars.org

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CalCars
THE CALIFORNIA CARS INITIATIVE

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10 TALKING POINTS FOR PLUG-IN HYBRIDS

1. Why plug-in hybrids? Today's hybrids are efficient because they don't idle, they recapture braking energy into a battery, and they use smaller engines. They're a great step forward—but they're still 100% gas-fueled. **Use a larger, rechargeable battery and you add a second cleaner, cheaper, domestic energy source: electricity.**

2. Spend less time—and money—at the pump. A plug-in hybrid (PHEV) is like having a second fuel tank you always use first. Fill up at home from an ordinary socket, at a cost equivalent to less than $1/gallon. *[See box]*

3. Use no gas for short trips, still have unlimited range. If your batteries have a longer range than your commute, you'll almost never need gas. But if you forget to plug in, or take a longer trip, you have the same range as always from a gas engine—but in a clean, efficient hybrid.

4. Neo-cons and greens agree. PHEVs have been endorsed by an alliance of environmentalists and conservatives who see it as **the best way to cut our foreign "oil addiction."** Republicans and Democrats, Senators Hatch, Lieberman and Obama, former cabinet members Shultz and Woolsey, and recently President Bush have endorsed PHEVs. Use E85 and 100+MPG PHEVs become "flex-fuel" PHEVs getting **500 MPG** of gasoline (+ electricity + ethanol).

5. Keep the earth cool. Even though coal powers half the nation's electricity, driving electrically produces **45% lower greenhouse gases** than a gas-only car. This will only improve as utilities use cleaner, renewable energy.

6. Lead car-makers out of the wilderness. US car-makers missed the boat on hybrids; now they're playing catch-up. **PHEVs offer one company the chance to leapfrog its competitors.** Today's batteries are good enough; they will improve and get cheaper as production increases.

7. Save money in the long run. In high volumes, car-makers could sell PHEVs for under $2,000-$5,000 more than current hybrids. Just as car buyers pay for large engines or leather seats without expecting a return on investment, early adopters will pay extra for the PHEV "green feature." The bonus? Projections based on experience from electric car fleets show **PHEVs have a lower lifetime cost of ownership than any other vehicle.**

8. Power your house with your car. Hybrids and PHEVs can be used as mobile generators after disasters and outages, **providing low-emission 120-volt back-up power for days** to emergency centers and individual homes.

9. PHEVs are already here. For 10 years, Dr. Andy Frank at **UC Davis** has converted **Ford/GM** cars and SUVs. **DaimlerChrysler** is now testing PHEV versions of the **Mercedes Sprinter** 15-passenger commercial van. Last year, non-profit **CalCars.org** built the first **Prius** PHEV. This year **EDrive Systems**, LLC will sell **Prius** conversions.

10. Deploy the fleet. Fleet buyers are leading the way on many fronts. **Plug-In Partners** is a national campaign for a large fleet buy. To slash battlefield costs and get the no-heat "footprint" of electric vehicles, the military may be a big buyer. New tax credits and company benefits can help buy down extra costs. Other incentives are on their way from all levels of government. And **CalCars hopes to partner with a car company**, converting an existing hybrid to meet a fleet market demand we estimate at 10,000-100,000 vehicles.

Assumptions for Point #2:

Here's another way to think about it: At $3/gallon of gas, driving a non-hybrid car costs 8-20 cents/mile (depending on your miles/gallon). With a PHEV, local travel and commuting can drop to 2-4 cents/mile.

Toyota Prius: 260 Watt-hours/electric mile at "off-peak" (overnight) electricity rate (8.8 cents/kilowatt hour) equals a cost of 2.3 cents/mile. Multiply this by the 45 MPG of a typical Prius to get the equivalent of $1.03/gallon.

Typical Non-Hybrid SUV: 400 Watt-hours/electric-mile at the off-peak rate equals a cost of 3.5 cents/mile. Multiply this by the less efficient SUV's average of 18 miles/gallon to get an even better $0.63/gallon. (SUVs get low mileage, so they improve even more!)

The California Cars Initiative is a non-profit startup of entrepreneurs, engineers, environmentalists and consumers that combines technology development and advocacy. Our goal? To get car companies to build PHEVs. More at www.calcars.org.