



Harnessing the Power of Hybrid Electric Fleet Vehicles



Naomi Friedman
Center for a New American Dream
www.newdream.org
U.S. DOE Clean Cities



Center for a New American Dream

- **Nonprofit Organization whose mission is:** To help people consume responsibly to protect the environment, enhance quality of life and promote social justice.
- **Not about: guilt, or gloom and doom.** Are about: positively educating the public, wise consumer choices based on sound science. Buy wisely, join with others to make a difference.

Center for a New American Dream

- **Active membership.** On-line network of nearly 30,000 individuals (expanding to 100,000) engaged in specific actions in their own lives, the community, and on the national level to change the way goods are produced and consumed.
- **Conducted 10 successful media campaigns that generated 6,000 news stories** including *Time*, CBS News, *The Wall Street Journal*, CNN, *Family Circle*, *People Magazine*, *Woman's Day*, and the *Washington Post*.
- **Helped thousands of purchasers move purchasing to environmentally friendly goods and services**
- **1.35 million visitors to our website in 2003**

Institutional Procurement Program

Helping state and local governments and other large purchasers incorporate environmental considerations into their purchasing decisions.

Achievements:

- Helped thousands of purchasers in government and institutions, such as the World Bank, move purchasing power to environmental preferable goods and services
- Assisted jurisdictions (MA, MN, Santa Monica, Ind., Portland) in developing contracts for environmentally preferable products (e.g. computers, cleaners, paper)
- Network of over 1,200 procurement officials
- Website/on-line assistance/listserve/best practices/fact sheets/training
- Landmark conference calls (e.g., HEV call 280 participants)

Harnessing the Power of Advanced Fleet Vehicles

Why Hybrids?

One-third of anthropogenic CO₂ emissions come from transportation. Passenger vehicles account for 40% of the oil we consume. About 474 counties – covering ½ of the US population – do not meet new federal ozone air standards.

- **Hybrids offer convenience, fuel efficiency, greenhouse gas reduction, reduce other air emissions, are enjoyable to drive!**
 - Dramatic reduction in global warming CO₂ emissions (about 30-50% reduction).
 - Improves urban air quality as the electric motor allows for no emissions when operating at stop and start and at low speeds.
 - Higher fuel economy reducing our nation's dependence on imported oil.
 - High operational, maintenance, and fuel efficiency.
 - No new infrastructure needed.
 - Market availability and market demand (Prius named "Car of the Year" by Motor Trend magazine).

Emissions Comparison

Comparison of Annual Emissions and Fuel Consumption of Mid-size Sedans¹

	2004 Chevrolet Malibu	2004 Toyota Prius	Savings	Percent Reduction
EPA Emission Standard	Tier 2 Bin 8	SULEV II		
Non-Methane Organic Gases (grams)²	1,527	122	1,405	92%
Carbon Monoxide (grams)²	51,303	12,215	39,088	76%
Nitrogen Oxides (grams)²	2,443	244	2,199	90%
Particulate Matter (grams)²	244	122	122	50%
Carbon Dioxide (lbs)³	10,470	5,330	5,140	49%
EPA Fuel Economy (city/hwy)⁴	24/34	60/51		
EPA Fuel Economy (combined)⁵	28	55	27	
Fuel Consumed Annually (gallons)	436	222	214	49%

“If every new car and truck in America used Prius-like technology, we could more than double the fuel economy of our vehicles and save nearly three times more oil than we currently import from the Persian Gulf By 2020.”

-David Friedman,
Union of Concerned Scientists

Costs

- Capital costs: Can be \$2,000 to \$6,000 more (UCS says about \$4,000)
- Fuel Savings can be up to \$5,500 over lifetime (according to UCS)
- Maintenance savings
- Higher resale
- Leading to lower or comparable lifecycle costs (not including emissions reductions)
- Factors affecting cost: cost of gasoline, city vs. highway driving, terrain

Costs: 2003 Economic Life Cycle Cost Comparison: King County

King County, Washington

	2003 Chevy Malibu	Adj. For Life Cycle ¹	2003 Toyota Prius	Difference
Initial Purchase Price	\$14,901	\$17,434	\$21,280	(\$3,846)
Projected Residual Value²	(\$2,117)	(\$2,477)	(\$4,111)	\$1,634
Net Purchase Price	\$12,784	\$14,957	\$17,169	(\$2,212)
Fuel Miles Per Gallon	24	24	44	20
Est. Fuel Cost^{2,3}	\$5,003	\$5,854	\$3,211	\$2,643
Est. Maintenance & Repair Cost²	\$4,013	\$4,695	\$2,466	\$2,229
Total Cost of Ownership	\$21,800	\$25,506	\$22,846	\$2,660

Building Hybrid Market

- Accelerate and sustain demand. Extend beyond ‘early adopters.’
- Target institutional fleets, which offer: steady demand, bulk purchase, visible vehicles, multiple drivers, opportunity to collect good field data. Fleets are one in five car purchases.
- Deliver outreach, education, information on lifecycle costs and benefits (fact sheet, web-based cost tool, regional sessions)
- Pool purchasing power.
- Communication with industry

Communities Purchasing Hybrids

States

- New York
- New Jersey
- Washington
- California
- Oregon
- Florida
- Nevada
- Colorado
- Missouri
- Maine

Cities

- Coral Springs, FL
- Boulder, CO
- Fort Collins, CO
- Denver, CO
- Houston, TX
- Mesquite, TX
- Coppell, TX
- New York, NY
- Los Angeles, CA
- San Francisco, CA
- Austin, TX
- San Antonio, TX
- Lake Oswego, OR
- New Britain, CT
- Seattle, WA
- Boise, ID
- Dallas, TX

Counties

- King Co, WA
- Alachua Co, FL
- Marion County, FL
- Windham County, CT
- Martin County, FL
Police Dept
- Johnson Co, KS
- Jefferson Co., KY
- Lexington/Fayette
Urban Co., KY
- Palm Beach Co, FL
- Arlington Co, CA

Government Hybrid Uses

- Sheriff's Offices
 - Parking enforcement
 - Detective work
 - Light patrol/non-emergency uses
- Social services
- District attorneys offices
 - Process servers
- Parks and Recreation
- Depts. of Environmental Protection
- Depts. of Health
- ETC.....

“We work to conserve as much energy as we can—that’s our obligation to the American people. We spend taxpayers’ money wisely, and that means we don’t run experiments. We’ve got a good car here. Hopefully American car companies will offer something similar, soon.” – Wyatt Earp, Marion County, Florida



Government Protecting the Public

Survey Demonstrates High Interest in Hybrids

- Nation's 500 large agencies, 25% response rate
- Over the next 3 years, such agencies intend to buy a total of:
 - 29,500 sedans
 - 15,000 pick-ups
 - 4,400 SUV's
 - 5,600 Vans
 - = 54,700
- They intend to buy a total of vehicles in hybrid format, if available:
 - 11,000 sedans
 - 6,800 pick ups
 - 2,100 SUV's
 - 3,150 vans
 - =23,200 total HEV vehicles
- More likely to buy HEV's if get credit for meeting air pollution standards or CO2 reduction goals
- 70% have no "Buy American" policy
- 90% said they would purchase vehicles off of a national contract

Questions to Explore Together...

- How can the private and nonprofit sectors mobilize to develop the HEV market for the benefit of both consumers, industry and the environment?
- What levers can we push to remove barriers and ensure a robust and *steady* transition to cleaner technologies (beyond 'early adopters')?
- How can we help governments lead by example and encourage the use of hybrid technology in multiple vehicle types?
- How can we increase demand and encourage industry to increase production to meet that demand?
(U.S. registration rose to 43,435 last year, a 25% increase from 2002. Toyota announces increase in production by 31% to 47,000 vehicles in 2004 (2005?). Three to four month wait list; new fleet customers not able to order hybrids in 2004/2005...)

Regional HEV Buy

- Pool purchasing power of state and local government entities, under one contract, to obtain favorable arrangements and prices for government fleet vehicles.
- King County to issue new contract for hybrid fleet vehicles (sedans and SUV's) summer 2004
- Contain provision to allow other jurisdictions to piggy back on the contract under similar terms and conditions
- Actively solicit participation by leading jurisdictions in Pacific Northwest and Utah
- Actively solicit participation by manufacturers and regional dealers

King County, WA

- Population: 1.8 million
- Fleet Size: 3,400 vehicles/equipment
- 10-year history of providing fleet and related services to more than 100 cities and public agencies
- Recipient of Blue Seal of Excellence award from the National Institute for Automotive Service Excellence
- Certified to perform warranty repair
- Longstanding commitment to AFV
- Well-respected by the industry
- Between 2001 and 2003 King County Purchased 60 Toyota Prius Hybrid Electric Vehicles
- King County drivers gave hybrids high rating (4.5 out of 5 point scale)

King Co.'s Proposed HEV Standards

Vehicle Type	Emissions Rating	Combined MPG Rating	Idle Off	Regenerative Breaking
Compact Sedan	Bin 5	45	Yes	Yes
Mid-sized sedan	Bin 5	45	Yes	Yes
Compact SUV	Bin 5	35	Yes	Yes



The Center for a New American Dream

www.newdream.org/procure

301-891-3683

Naomi@newdream.org