

U.S. DEPARTMENT of ENERGY

ALTERNATIVE FUEL NEWS

An Official Publication of the Clean Cities Network and the Alternative Fuels Data Center

From the Office of Energy Efficiency and Renewable Energy

NATIONAL ENERGY POLICY

Brings Alternative Fuels,
AFVs, and Clean Cities
into Focus in Washington



PLUS:
Clean Cities Conference Coverage

INSIDE:

**One For All:
Station Cars**



Dear Readers,

The landscape for alternative fuels continues to be lush and vibrant. This was most evident as we celebrated the 7th National Clean Cities Conference and Expo in Philadelphia. Alternative fuel stakeholders from across the country—from all over the world, for that matter—spent three robust days in Philadelphia, experiencing “The Alternative Fuels Revolution.” The conference was an overwhelming success, and many heartfelt thanks go out to our host coalition, the Greater Philadelphia Clean Cities Program, and its stakeholders. You can read all about this year’s conference in our feature story.

We also recently welcomed two new coalitions to the Clean Cities Program—the Twin Cities Clean Cities Coalition and the Vermont Clean Vehicles Coalition. (An interesting note: both designations were “round two” for their respective coordinators. Twin Cities’ Tim Gerlach helped shepherd the Red River Valley Clean Cities Coalition to designation in 1998, and Vermont’s Erin Russell helped guide the Northeast Ohio Clean Coalition to its designation in 1999). These newest coalitions, quite different from one another, bring unique experience and expertise to the Clean Cities network. Twin Cities stakeholders have developed the nation’s largest network of E85 refueling stations and have focused much of their efforts on bringing the public (the thousands of

flexible-fuel vehicle drivers in and around the Twin Cities) to its clean fuel options. The Vermont coalition, on the other hand, serves a much smaller, less populated region of the country. And although the coalition cannot claim 60 public fueling stations like the Twin Cities, it has been extremely successful in communicating the Clean Cities message and in generating support from the local community. In fact, in a surprise announcement at the designation, Vermont Governor Howard Dean offered to pay a third of the total cost of an AFV for any municipal fleet that commits to alternative fuels. Congratulations on another job well done, Tim and Erin!

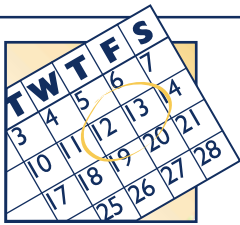
And in addition to what’s been going on in other parts of the country, this summer has been very exciting here in Washington, DC. The President’s Energy Task Force unveiled its National Energy Policy and sparked much discussion over the need for alternative fuels and energy efficient transportation. Our cover story for this issue discusses many of the policy recommendations, as well as proposed legislation on Capitol Hill that could provide economic incentives, such as tax credits, for AFV and hybrid-electric vehicle purchases. DOE also initiated a review of its Energy Efficiency and Renewable Energy Programs this summer. The feedback has been very positive and encouraging.

All of this promises an exciting future for Clean Cities and alternative fuels.

Best wishes, and as usual, enjoy the issue.

Shelley Launey, Director

Clean Cities Program
U.S. Department of Energy



Upcoming Conferences and Events

10th International Symposium on Transport and Air Pollution

National Center for Atmospheric Research
Sept. 17–19
Boulder, Colo.
Contact: NCAR; 303-497-1117

19th Annual NGV Conference and Expo

Sept. 30–Oct. 2
San Francisco, Calif.
Contact: NGVC; 202-824-7360

Michelin Challenge Bibendum

Oct. 26–29
Los Angeles to Las Vegas
Contact: John Love; 313-886-6750

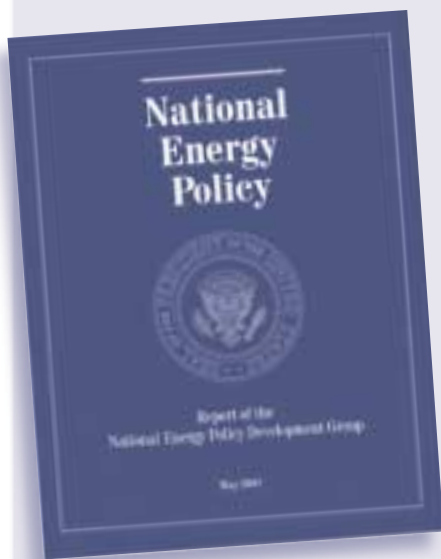
Clean Air Technologies 2001

Nov. 5–6
Anaheim, Calif.
Contact: A. Saunders; 323-466-3445

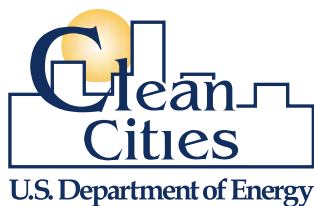
Electric Transportation Industry Conference 2001

Dec. 11–14
Sacramento, Calif.
Contact: EVAA/Pam Turner; 650-365-2667

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NATIONAL ENERGY POLICY

Brings Alternative Fuels, AFVs, and Clean Cities into Focus in Washington

As the 2001 calendar reaches mid-year, energy issues have taken center stage throughout the U.S. and in Washington. By any measure, the debate over how America will fuel its future has commanded acute attention. Sparked partly by rising electricity and petroleum prices, and lack of generating and refining capacity to satisfy our growing demand, the national discussion on energy has brought a renewed public focus to a host of issues including fuel efficiency, alternative transportation fuels, and alternative fuel vehicles (AFVs).

In mid-May, the National Energy Policy Development Group, led by Vice President Dick Cheney, completed three months of policy-making effort. The resulting 163-page document includes 105 specific energy-related recommendations, addressing everything from power line construction to clean coal. (The document is available in its entirety at www.whitehouse.gov/energy.)

As intended, the National Energy Policy has generated much discussion since its release. Like any policy statement of its kind, the Bush-Cheney energy plan does not carry the force of law. Rather, it aims to influence members of Congress to write new legislation, incorporating the wishes of the administration as well as the American people, after a reasonable period for public feedback. The policy may also support future executive orders from the White House.

Several congressional bills propose new incentives for infrastructure development and vehicle purchases. Others will represent the return of older ideas, unveiled in previous congressional sessions but never passed.

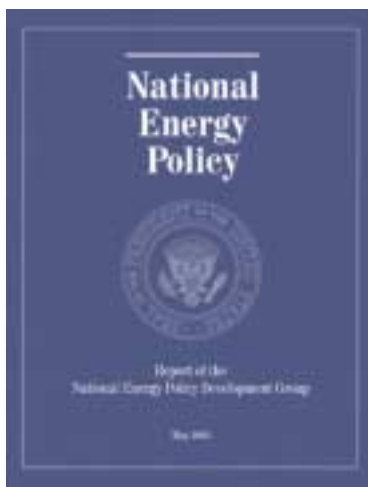
For example, Senate Bill 388, introduced by Senator Frank Murkowski (R-Alaska), would expand the ways in which fleets can earn AFV credits to meet requirements established in the Energy Policy Act of 1992. (See "AFV and Alternative Fuel Legislative Proposals," page 5.) Another bill known as the CLEAR Act, sponsored by Senator Orrin Hatch (R-Utah) and Representative David Camp (R-Mich.), would create a "tiered" system of tax credits to reward AFV buyers according to the amount of environmental benefit expected of their vehicles.

The National Energy Policy includes several recommendations pertaining specifically to alternative fuels and energy efficiency. One suggests tax credits for the purchase of hybrid and fuel cell-powered vehicles between 2002 and 2007. It also recommends continuing the current federal

excise tax exemption for ethanol production, which ultimately makes ethanol fuels such as E85 more affordable for consumers.

The policy acknowledges the familiar problem of "flexible-fuel" vehicles, which have the capability to cut petroleum consumption, but in reality often run on gasoline: "Reforms to the federal alternative fuels program could promote alternative fuels use instead of mandating purchase of vehicles that ultimately run on petroleum." Specific program changes are to be developed by appropriate agencies.

Also recommended is a review of Corporate Average Fuel Economy (CAFE) standards, with due consideration of a report by the National Academy of Sciences, expected in July. The policy supports "market-based approaches" to increasing fuel economy, which might include joint government-industry efforts such as the Clean Cities Program and other budding partnerships to promote green vehicles. Industry-funded educational programs are recommended, with emphasis on "energy's compatibility with a clean environment."



The National Energy Policy recommends continuation of a federal tax exemption for the production of ethanol, often made from corn.

The policy supports “congestion mitigation technologies and strategies” affecting the nation’s highways; and TEA-21, which includes a clean fuel grant program, to bring advanced bus propulsion technologies to public transit fleets. For long-haul trucks, it recommends measures to reduce emissions and fuel consumption, partly through alternatives to idling (see *AFN Vol. 5, No. 1*).

Many legislative initiatives, both proposed and pending, are affected by funding for programs under DOE’s Office of Energy Efficiency and Renewable Energy. A review of those programs was recommended in the National Energy Policy, and related public comment was given in June, in public hearings held in seven major cities. With input from those hearings, legislators and the administration will continue shaping our nation’s energy policy.



Ballard Power Systems, NREL/PIX 03948

Advanced bus propulsion technologies would benefit under TEA-21, an ongoing clean fuel grant program supported in the National Energy Policy.

AFV and Alternative Fuel Legislative Proposals

The Clear Act: Clean Efficient Automobiles from Advanced Car Technologies Act of 2001

S.760. Sponsor: Senator Orrin Hatch (R-Utah)

H.R. 1864. Sponsor: Representative Dave Camp (R-Mich.)

Nearly identical bills to amend the Internal Revenue Code of 1986 to encourage and accelerate the nationwide production, retail sale, and consumer use of new motor vehicles that are powered by fuel cell technology, hybrid technology, battery electric technology, alternative fuels, or other advanced motor vehicle technologies, and for other purposes.

The National Energy Security Act of 2001

S.388. Sponsor: Senator Frank Murkowski (R-Alaska)

A bill to protect the energy and security of the United States and decrease America’s dependency on foreign oil sources to 50% by the year 2011 by enhancing the use of renewable energy resources, conserving energy resources, improving energy efficiencies, and increasing domestic energy supplies; improving environmental quality by reducing emissions of air pollutants and greenhouse gases; mitigating the effect of increases in energy prices on the American consumer, including the poor and the elderly; and for other purposes.

Comprehensive and Balanced Energy Policy Act of 2001

S.597. Sponsor: Senator Jeff Bingaman (D-N.M.)

A bill to provide for a balanced national energy policy; addressing many of the same issues covered in the Murkowski energy bill.

Clean and Renewable Fuels Act of 2001

S.892. Sponsor: Senator Tom Harkin (D-Iowa)

A bill to amend the Clean Air Act to phase out the use of methyl tertiary butyl ether in fuels or fuel additives, to promote the use of renewable fuels, and for other purposes.

Renewable Fuels Act of 2001

S.670. Sponsor: Senator Thomas Daschle (D-S.D.)

A bill to amend the Clean Air Act to eliminate methyl tertiary butyl ether from the United States fuel supply and to increase production and use of ethanol, and for other purposes.

Clean Fuel Vehicle Incentives

H.R.377. Sponsor: Representative Joe Serrano (D-N.Y.)

A bill to amend the Internal Revenue Code of 1986 to provide additional incentives for the use of clean-fuel vehicles by businesses within empowerment zones, enterprise communities, and renewal communities.

Alternative Fuel Vehicles Acceleration Act of 2001

H.R.2326. Sponsor: Representative Sherwood Boehlert (R-N.Y.)

Establishes an AFV demonstration and commercial application grant pilot program for state and local governments, as well as metropolitan transportation authorities. The bill provides \$200,000,000 for grants of up to \$20,000,000 to support AFV deployment at up to 15 sites nationwide.

Comprehensive Energy Research and Technology Act of 2001

H.R.2460. Sponsor: Representative Sherwood Boehlert (R-N.Y.)

A bill to authorize appropriations for environmental research and development; scientific and energy research; development, demonstration, and commercial application of energy technology programs, projects, and activities of the U.S. Department of Energy and Environmental Protection Agency; and for other purposes.

For detailed information on any bill, please visit <http://thomas.loc.gov>.



Philadelphia Hosts Clean Cities Alternative Fuels Revolution

The Seventh National Clean Cities Conference and Expo assembled a unique cast of characters, as alternative fuel vehicle (AFV) advocates joined Ben Franklin and several of his 18th century Philadelphia friends eager to partake in "The Alternative Fuels Revolution."

This year's conference, hosted by the Greater Philadelphia Clean Cities Program, proved to be an exciting and productive gathering of the nation's Clean Cities stakeholders. More than 1,400 attendees of all ages experienced a trip back in time to colonial Philadelphia, where Ben Franklin and company visited with attendees in the Pennsylvania Convention Center and helped guide them to conference events and receptions throughout the city.

Following a welcome from Clean Cities' Philadelphia hosts, Program Director Shelley Launey kicked off the conference by presenting the "State of Clean Cities." Fluctuating energy prices illustrate the need for transportation fuel diversity, she said. A look at conventional and alternative fuel price swings over the past few years, along with the reasons for these swings, made it possible to make reasonable assumptions about future costs of all fuels. "In the midst of adversity, there is a lot of opportunity." She also highlighted several "AFV Heroes"—local fleet managers who have made a difference in building local and regional AFV markets.

DOE's Tom Gross, Deputy Assistant Secretary for Transportation Technologies, read a personal greeting from Secretary of Energy Spencer Abraham. He also described the growing worldwide demand for oil and how U.S. imports of oil are rising at a near-record pace. "So what do we do about this oil situation? We increase supply of all kinds of fuels—particularly clean, domestic ones—and we reduce demand," he said, setting the stage for the week's Clean Cities events.

Something Old and Something New

Keeping with Clean Cities conference tradition, the panel discussions, breakout sessions, and side events (including festive receptions, courtesy of conference sponsors) offered opportunities to network and exchange ideas. This year's new faces and agenda features also brought unprecedented enthusiasm and excitement.

On each of the three days of the conference, concurrent breakout sessions gave attendees a chance to tailor their agendas to their own interests. They could listen to panel discussions and participate in one-on-one "car talks" with experts in a variety of specific subjects, including niche markets, manufacturer product lines, emissions studies, and project funding opportunities.

In a break from conventional conference subject matter, many of this year's sessions were designed to intellectually



On behalf of the Los Angeles Clean Cities Coalition, Dee Allen accepted two Coalition Awards from Tom Gross of DOE: The Gold Star Award, which recognizes coalitions that have added the most AFVs; and the Legal Eagle Award for supporting AFV legislation at the state or local level.

NREL/PIX 10101

Steve Linnell of the Greater Portland Clean Cities Coalition accepted one of the 2001 Legal Eagle Awards for sponsoring legislative initiatives affecting AFV users in Maine.



NREL/PIX 10102



The Wisconsin Clean Cities Southeast Area Coalition, represented by Nicole Anderson, was a dual-award winner, accepting the Empire Award for adding the most new stakeholders; and the A Few Good Fleets Award for adding the most new private fleets.

NREL/PIX 10100

Salt Lake City Coordinator Bev Miller, recognized last year as Outstanding Coordinator for 2000, received an additional honor at this year's Clean Cities Conference. Miller accepted the key to a CNG-fueled Honda Civic GX from Stephen Ellis of American Honda.



NREL/PIX 10103

stimulate attendees and engender provocative exchange about global energy issues, and the future of alternative fuels. Featured speakers included authors, professors, media personalities, and even the former director of the Central Intelligence Agency.



The conference served alternative fuel interests of all ages and not just “seasoned” advocates. Nearly 600 local grade school students participated in Clean Cities’ first-ever “ScienceFest” program, featuring General Motors’ science advisor, Bill Nye, “the Science Guy.” Students participated in a series of workshops on transportation, energy, natural resources, and the environment. They also formed teams of “pollution busters” and explored the AFV exhibits in the Expo Hall.

And the Winners Are...

The Clean Cities Conference provides an excellent forum for the program to recognize the accomplishments of stakeholders and coalitions. On opening day, Tom Gross presented the Clean Cities National Partner Awards to organizations that have made significant contributions to the alternative fuels industry (see photo, back cover).

2001 Clean Cities National Partners

- American Airlines
- Denver International Airport’s Terry Henry
- Holiday Stationstores, Minnesota Corn Growers, Minnesota Department of Commerce-Energy Division
- Metropolitan Atlanta Rapid Transit Authority
- New York State Clean Fueled Vehicles Council
- Northside Independent School District
- Schwan’s Sales Enterprises
- Waste Management

For more on the 2001 Clean Cities National Partners, please visit www.ccities.doe.gov/pdfs/partner_awards_2001.pdf.

Select coalitions were also recognized at a special awards breakfast on the second day of the conference. Ten coalitions received awards for their accomplishments, which included adding the greatest number of AFVs, adding the most refueling stations, recruiting the largest number of private fleets, and leveraging the most funds for AFV projects. For more information about the coalition awards, see back cover.

Keys, Please

Many Clean Cities coordinators have longed for a personal AFV to use on the job so that they may “walk the talk.” Thanks to Clean Cities’ generous auto company partners, a few surprised coordinators got their wish at the conference. DaimlerChrysler gave away a neighborhood electric vehicle at the coordinators’ reception on Saturday night. Ford presented the keys to a dedicated natural gas van to the city of Philadelphia’s Health and Fitness Czar, Gwen Foster. Toyota raised Monday’s excitement to an electrifying level with the announcement of its vehicle giveaway—10 lucky coordinators received an electric RAV-4, complete with a charger, for one year.

At Tuesday’s coalition awards breakfast, General Motors presented Atlanta’s Kent Igleheart, named 2001 Clean Cities Coordinator of the Year, with his pick of the company’s model year 2002 AFV offerings. And in the spirit of vehicle giveaways, American Honda also awarded Beverly Miller, Salt Lake City Clean Cities coordinator and last year’s Coordinator of the Year, a new CNG-powered Honda Civic GX.

Westward Ho!

Among the eagerly anticipated announcements at the Clean Cities Conference is always the site location and venue for the following year. At the coalition awards breakfast, with the help of a Native American tribal dancer, Zach Taylor, Executive Director of the Central Oklahoma Council of Governments, announced that the Eighth National Clean Cities Conference will be held in Oklahoma City, May 12-15, 2002.

For details on the Seventh National Clean Cities Conference, including speaker presentations and sponsor lists, and for preliminary information about the 2002 Clean Cities Conference in Oklahoma City, please visit www.ccities.doe.gov/conference.shtml.

Igleheart Brings Outstanding Coordinator Award Home to Atlanta

For his successful efforts to secure AFV project funding and strengthen stakeholder relations in the Clean Cities-Atlanta Coalition, Kent Igleheart received this year’s Outstanding Coordinator Award.

Under Igleheart’s leadership, the number of AFVs in and around Atlanta grew last year to more than 3,400. To meet the increased fueling demand, the coalition facilitated the addition of 7 CNG, 2 propane, and 3 biodiesel refueling stations, along with 66 electric recharging sites. Atlanta is home to nearly 200 AFV stations.



Outstanding Coordinator Kent Igleheart of Atlanta was further honored by General Motors, receiving an AFV of his choice from GM.

Atlanta-area stakeholders now operate 180 compressed natural gas (CNG) transit buses, 374 CNG postal delivery vehicles, and 71 CNG taxis. In addition, Georgia Power operates a fleet of 315 electric vehicles. Looking to the future, Metropolitan Atlanta Regional Transit Authority



(MARTA), Buckhead Shuttle, and Clayton, Gwinnett, and Cobb counties are committed to making the transition to alternative fuel buses.

Igleheart is responsible for guiding the Atlanta coalition to non-profit status. "Becoming a non-profit organization opened new avenues for additional funding," he said. "As a non-profit, we enjoy more freedom in terms of the types of grants we're eligible for."

"Our success in securing funds has allowed us to put a management contract in place that provides the equivalent of more than two full-time people to focus on fundraising, planning meetings and conferences, producing the coalition newsletter and Web site, and lots of other activities that simply wouldn't be possible otherwise," Igleheart said.

General Motors added to his recognition by presenting Igleheart with a 2002 model alternative fuel vehicle of his choice. In addition to his individual award, the Atlanta coalition was one of 10 winners of this year's Clean Cities Coalition Awards.

"Super-Consumer" John Davis Praises AFVs, Alternative Fuels

John Davis is the producer and host of the weekly PBS program, *MotorWeek*. In more than 20 years in that role, Davis has applied the show's rigorous test and evaluation regimen to thousands of cars and trucks—always with the goal of considering vehicles purely from the perspective of the consumer.

Conference Panel Sheds Light on New Possibilities for AFV Funding

Conference sessions included a variety of topics to help Clean Cities coalitions expand the AFV market. One panel discussion showcased an innovative scheme to help increase funding for projects according to the expected global emissions reduction benefits.

In 1997, Oregon enacted the first meaningful state-level legislative measure to control carbon dioxide (CO₂). Like other so-called greenhouse gas (GHG) emissions, CO₂ is believed to cause ozone depletion, which contributes to global warming. The law requires utilities generating power in Oregon to "avoid, sequester, or displace" a portion of their CO₂ emissions. One way to do so is to purchase credits, or "carbon offsets," from qualified organizations launching emissions-reducing projects in Oregon or elsewhere.

The Oregon plan is of particular interest to Clean Cities coalitions, regardless of their location, as a potential source of funding for AFV projects. By meeting specific requirements in terms of project structure and emissions monitoring, coalitions could receive grant money for projects that reduce carbon dioxide emissions. The plan is administered by the Climate Trust, an Oregon-based non-profit. One large potential buyer is Seattle City Light, a public utility that claims to have put \$7 million on the table, earmarked for purchasing carbon credits.

"I want coalitions to hone their ability to sell their carbon dioxide emissions reductions to us," said Doug Howell, a strategic advisor with Seattle City

Light. Howell is a founding member of the Puget Sound Clean Cities Coalition. His employer is seeking as many as four projects, to offset the equivalent of 247,000 metric tons of carbon dioxide emissions, according to Howell. Consideration will be given to projects designed to reduce not just CO₂, but other greenhouse gases as well.

The Oregon plan gives preference to—but does not require—projects based within the state. Acknowledging that causes and effects of ozone depletion are worldwide, the Oregon legislation honors emission-reducing efforts in other states, and even other nations.

A request for proposals, explaining how to apply for consideration as a carbon-credit trading partner with Seattle City Light, is available at www.climatetrust.org. The solicitation is now closed to new proposals, but another is expected in January 2002. The site also offers general information about Oregon's carbon credit plan. The Climate Trust has an interest in purchasing carbon offsets, independent of the needs of Seattle City Light.



Because ozone depletion occurs worldwide, Oregon recognizes emissions-reducing projects from outside the state.

Photodisc

At the direction of the National Energy Laboratory, Science Applications International Corporation has helped to produce a hypothetical sample project to illustrate how a project sponsor might qualify to earn carbon offsets under the Oregon plan and other similar trading systems. "Developing International Greenhouse Gas Reduction Projects Using AFV Technologies" is published on the Clean Cities Web site at www.ccities.doe.gov/pdfs/jette_findsen.pdf.



"Think of me as the super-consumer," Davis said in an interview preceding his participation in a Monday afternoon session. Davis led "The Right Fit for Light Duty Vehicles: Product Roll-out." Also on the panel were representatives of American Honda, Daimler-Chrysler, Ford, General Motors, and Toyota.



John Davis

As a concept, AFVs have an enormous potential appeal to American consumers, Davis said. Rising petroleum prices and the energy crisis in California have broadened interest in alternatives. The success of hybrid vehicles, while not classified as AFVs under the Energy Policy Act of 1992, proves people are willing to try something new.

Early adopters tend to be fleet managers, he said, "because they exist solely to save money." Gains in operating efficiency are already enough to satisfy fleets, and the public will be quick to follow. Davis is optimistic about the spread of alternative fuels and hybrid technology to many more vehicle platforms, including sport-utility vehicles and pickups. "When the powertrains start to make sense for more Americans, the market will explode," he said.

Alternative fuels may still suffer from an identity crisis, however. "Ask somebody what alternative fuels are, and they're likely to say electricity or diesel," he said. Compressed natural gas (CNG) remains a mystery to most motorists, even with availability in nearly all urban areas.

A key to penetrating the mainstream market, he said, may be selling AFVs as the "second car" in a household. A family might consider a CNG-powered car if its other, conventionally fueled vehicle can be counted on for cross-country travel, late-night fueling, etc. "I'm a natural gas advocate, and have been for a long time," said Davis.

A long-time muscle car enthusiast, Davis has owned a variety of vintage Mustangs, Corvettes, and a deTomaso Pantera. Such gasoline-thirsty vehicles deserve a place on the road, he insists, along with more fuel-efficient "daily drivers." But like all motorists, their owners have an obligation to keep such cars maintained and well-tuned. "When I see somebody coming down the road belching smoke," he said, "I want to make a citizen's arrest."

Former CIA Chief Woolsey Touts Biomass Ethanol for Energy Security

A big boost for ethanol-powered vehicles might come from ideas promoted by James Woolsey, a partner in the environmental law firm of Shea and Gardner. Woolsey's expertise in energy stems from his involvement in international security, as former director of the Central Intelli-

gence Agency. An early advocate of biologically produced ethanol, he wrote extensively on the subject with Senator Richard Lugar (R-Ind.) in *Foreign Affairs* magazine (Jan.-Feb. 1999).

Woolsey spoke of the benefits of biomass and biologically produced ethanol at Tuesday morning's "Technology Forecast." The session also included a broad discussion of hydrogen, fuel cells, and electric vehicles. Other participants were author Jim Motavelli, Robert Bienenfeld of American Honda, Bruce Gordon of Ford, Tom Gross of DOE, and Stan Ovshinsky of Energy Conversion Devices.



James Woolsey

Presently, most ethanol is produced from corn. But other sources, still mostly unexploited, could dramatically boost availability, Woolsey said. Biomass can be made from urban garbage and agricultural waste such as rice straw. In many parts of the world, rice straw is pulled out of the fields and burned as waste, which produces harmful carbon dioxide emissions.

Abundant ethanol could effectively "stretch" petroleum supplies, Woolsey argued. A decentralized network of ethanol producers might boost the use of flexible-fuel vehicles, running on gasoline when necessary and E85 when possible. Constructing a pipeline infrastructure would be unnecessary.

Some major oil companies have a benign view of renewable energy sources such as ethanol, noted Woolsey. Others think of renewables as "the work of the devil." Big ethanol producers, meanwhile, are slow to change and "acting like IBM did when silicon chips were invented," he said. Ethanol producers might lose out if they don't recognize the importance of new, renewable feedstocks.

Hydrogen was discussed by Ovshinsky, CEO of Energy Conversion Devices. The company is developing a means to deploy hydrogen fuel as a solid, not a liquid. The method would reduce safety concerns, but it is still a long way from economic feasibility, Ovshinsky said.

Electric vehicles are widely thought of as "zero-emissions," he noted. But if they are recharged with electricity generated by burning fossil fuels, they are merely "a way for L.A. to export its CO₂ emissions, and they don't do anything for global warming."

Similarly, many fuels are considered potential feedstocks to create hydrogen, noted Bienenfeld of American Honda. But if petroleum emerges as dominant, "fuel cells by themselves won't accomplish anything," he said.



...And One for All

Station Cars Positioned to Enhance Mass Transit Experience

As our nation's population swells, city dwellers are finding themselves afflicted by the evils of pollution, traffic, and high costs of living. Yet they shrug their shoulders when asked the question: "Why don't you take the train?"

The expanded use of mass transit can help alleviate congestion and commuter woes. Unfortunately, many cringe at thoughts of riding the bus or the train because they envision long waits, crowded vehicles, and general inconvenience. And what if the destination is beyond walking distance from a transit station? Rather than deal with these issues, most Americans opt for personal transportation, thereby contributing to the very problems that inundate their already stressful urban lives.

The station car concept has surfaced as a potential alternative. Once fully developed, this new genre of transportation will offer the same mobility, convenience and comfort of privately owned vehicles while providing the economical and environmental benefits of mass transit. It can offer the best of both worlds.

As with car sharing, a similar system that originated in Europe, the station car concept is motivated by the idea that mobility should not necessarily require the high cost of owning a vehicle. By obtaining membership to a station car provider or service, one can gain access to any of a large inventory of cars positioned at transit stations and other central locations. The cars are available for local trips, including going to work or home. Cars that are not in use (when the driver is at work, for example) are free for other

subscribers to drive. As such, individuals can avoid the cost of owning a vehicle and still maintain comparable mobility.

Says Atlanta's Kent Igleheart (recently named Clean Cities Coordinator of the Year), "I really feel that station cars will be the next big thing in transportation. A big problem with public transit is the lack of mobility once you arrive at the station—what if your work is too far from a station? What if you have an emergency? This concept addresses many of these issues."

What's more, the environment will benefit as much as any traffic-weary commuter—to date, most station cars have been zero emission vehicles such as Ford's TH!NK electric vehicle. In fact, a recent study of the San Francisco Bay Area Initial Station Car Demonstration confirmed greater than 90% reduction of emissions including carbon dioxide, nitrogen oxide, and volatile organic compounds.

And in the not-too distant future, station cars will take advantage of state-of-the-art electronics to simplify the system for all involved. Customers need not worry about typical rental car inconveniences such as adjusting the seats, filing out paperwork, or even setting the radio, as these tasks and more will be controlled by user-specific ID cards. Advanced docking systems will automatically recharge the automobiles once parked and line them up accordingly to ensure that a fully charged vehicle is always available. Furthermore, these automated systems will park the cars as close together as possible, conserving valuable land around transit stations.

The success of pilot programs (see box) has significantly increased interest in the station car concept. To help build momentum, Clean Earth Action in Atlanta hosted the first annual Station Car Conference in April, providing a forum for station car proponents to discuss ways to increase recognition and improve viability of the concept.

With continued promotion, individuals across the nation will have the opportunity to benefit from the station cars' convenience and affordability. As a result, communities nationwide could enjoy decreased traffic, pollution, and cost.

- Seattle's Flexcar already has some 1,300 members using its 42-vehicle fleet. Although it is currently receiving government assistance, it is on track to be profitable next year, according to CEO Neil Peterson.
- CarSharing Portland, founded in 1998 but since purchased by Flexcar, was the first such company in the United States. Over 470 members currently utilize its 25 cars.
- ZipCar of Boston currently provides more than 35 cars for its 570 members and adds two cars per week to its fleet. As Robin Chase, the company's CEO, explains, "ZipCar allows urban drivers major financial savings... incredible convenience... and the ability to avoid the hassles and headaches

of car ownership... We use scarce and costly resources much more efficiently and reduce congestion and air pollution, too."

- In 1999, CarLink, a car-sharing study involving some 50 individuals and 12 cars was undertaken in Dublin, CA at the local Bay Area Rapid Transit (BART) station. BART reports indicated that in addition to reducing traffic congestion, drivers saved money and experienced decreased levels of stress.
- BART has teamed up with Hertz to offer the country's first public-private station car rental program at its Fremont, CA station. Initiated in October 2000, commuters have the option of using TH!NK city EVs or conventional gasoline cars.



Ford Motor Company

Non-polluting vehicles including the Ford TH!NK are popular choices in station car pilot programs.



From the States

Texas Authorizes \$126 Million in Emissions-Cutting Incentives

Texans will soon have millions of new reasons to purchase cleaner vehicles. On June 15, Texas Governor Rick Perry signed Senate Bill 5 (SB5), creating the Texas Emissions Reduction Plan (TERP)—and a \$126 million annual incentive program for lower emission light- and heavy-duty vehicles. The program takes effect September 1, 2001.

The TERP Fund, which will pay for the program, will draw from state registration fees for truck trailers and commercial vehicles, state motor vehicle inspections and new registrations, and state-issued construction equipment charges.

Modeled after California's Carl Moyer Program, the heavy-duty vehicle portion of the legislation seeks to reduce diesel emissions, specifically nitrogen oxides (NOx) in the nonattainment areas of Texas. Approximately \$90 million in grants will be available for on- and off-road heavy-duty alternative fuel vehicle (AFV) purchases, vehicle repower projects, purchases of emissions-reducing add-on equipment (such as auxiliary power units), and alternative fuel infrastructure projects.

Approximately \$13 million will also be available to reimburse fleets for new heavy-duty engine purchases—but incentive funding will depend on the amount of NOx emissions produced. For example, in the program's first year, vehicles emitting 2.5 grams of NOx per brake horsepower-hour (g/bhp-hr) can qualify for a \$15,000 incentive, and vehicles producing 1.5 g/bhp-hr or less can qualify for as much as \$25,000. The standards will rise for engines produced in model years 2003 through 2006.

The same rule applies to the light-duty vehicle portion of the legislation—the cleaner the vehicle, the greater the incentive. The TERP Fund will provide more than \$23 million for light-duty vehicle incentives. To qualify for the funds, vehicles must meet the emission standards of the top four "bins" in the U.S. Environmental Protection Agency's Tier 2 system; incentives will range from as much as \$5,000 per vehicle to \$1,250 per vehicle. According to the legislation, all new car dealerships and leasing agents will carry lists of the vehicles eligible for incentives. For more on Tier 2 emission standards, please visit www.epa.gov/oms/tr2home.htm.

"Everybody down here is quite excited about the opportunities this legislation could bring, especially for heavy-duty projects," said DOE's Dan Deaton, Clean Cities Regional Manager. "Many of our cities—Laredo, San Antonio, Austin, Dallas—are experiencing more heavy-duty truck traffic because of increased trade with Mexico. This legislation will help develop clean corridor projects. It's really a positive shot in the arm for all of the Clean Cities coalitions in Texas," he said. DOE is working with NREL, the Clean Cities Tiger Teams, and the Texas Clean Cities to host a series of workshops this fall to help inform fleets of the unique opportunities afforded by the legislation.

How did Texas AFV advocates create such a strong incentives program—and get it passed? According to Tommy Foltz, Vice President of Government Affairs for Blue Energy & Technology, it took broad-based support and a little legislative know-how.

Blue Energy and its Texas subsidiary, TranStar Energy, together with Gladstein & Associates (which has worked extensively with fleets on California's Carl Moyer Program) first proposed the idea at the 2000 National Clean Cities Conference in San Diego. They joined forces with vehicle and equipment manufacturers, such as Power Systems Associates, Pressed Steel, Ford Motor Company, and American Honda, and formed the Texas Campaign for Clean Transportation (TCCT) to develop and promote the incentives program.

TCCT members met with legislators, including the bill's champions, State Senator J.E. "Buster" Brown of Houston and State Representative Steven Wolens of Dallas. They answered questions and distributed literature. They also won over the Texas construction industry, which, despite the prospect of financially supporting the incentives program, backed SB5 because it lifted a ban that limited construction operations to certain hours of the day.

According to Foltz, it's never too early start working the legislative process. "State legislators have limited time once their session begins and there are so many issues in front of them. It's important to get them the information they need—early. If there's anything I can say about the process, it's get in there early, and often." For more information on SB5 or the Texas Emissions Reduction Plan, please visit www.capitol.state.tx.us/capitol/legis.htm.



The Lone Star State: A Super Star State AFV Fleet

While the pending legislation in Texas would surely boost the state's alternative fuel vehicle (AFV) market, many fleets have already made great contributions and are setting examples for others to follow.

Among the most prominent is the Texas Department of Transportation (TxDOT). With 17,000 pieces of equipment, including on-road vehicles, off-road vehicles, and non-motorized trailers, TxDOT operates one of the nation's largest fleets. Of its 9,000 on-road vehicles, 6,000 are AFVs. But what's most impressive about this state fleet is that its AFVs, which are a variety of bifuel natural gas and propane vehicles, consume about five million gallons of alternative fuel each year.

Although TxDOT must comply with both federal and state AFV acquisition mandates—for the past 10 years, Texas has required its state fleets to purchase only AFVs—neither regulation requires actual alternative fuel use.

An internal organization policy encourages drivers to use alternative fuel whenever possible and TxDOT does not place its AFVs where alternative fuel is unavailable. But the fleet's success was not achieved overnight. At first, customer and driver reluctance to embrace the new technology posed problems. Part of the solution, according to fleet manager Don Lewis, was training—and lots of it. "We established new employee training courses and 'train the trainer' courses to help alternative fuels become mainstream," he said.

TxDOT also worked at the regional level to help ensure alternative fuel use. "We went to the top people in our 25 districts throughout the state and tied alternative fuel use to their performance measures," said Lewis. "The head of each district now has a personal stake in ensuring as much alternative fuel use as possible, and we're averaging more than 80% utilization."

TxDOT does not own or operate private natural gas fueling stations. Most of its natural gas vehicles operate in and around Dallas and Houston and refuel at commercial stations, helping to ensure the viability of each region's extensive refueling infrastructure. About half of TxDOT's propane vehicle drivers service at commercial stations, while the other half refuels at TxDOT facilities.

To help promote the increased use of alternative fuel and spread the word throughout the communities it serves, TxDOT staff members meet frequently with local governments and participate in each of the state's six Clean Cities coalitions. Each of the TxDOT vehicles also displays a bumper sticker to let others know it uses a clean, domestically produced alternative fuel.

"[Alternative fuel use] is not as tough as it seems—the manufacturers are producing the vehicles and the fuel industry has been very supportive," said Lewis. "Today we face fewer challenges...using alternative fuel is just a way of life for us now." State fleets interested in learning more about TxDOT are encouraged to call Don Lewis at 512-416-2085.

Nevada's Bio Bug Makes Cross Country Journey

What better way to show support for AFVs than to drive one 3,000 miles to the National Clean Cities Conference and Expo? That's what the Nevada State Motor Pool did with its Bio Bug, a Volkswagen Beetle powered by biodiesel.

Powered by a truly homegrown fuel, the Bio Bug used biodiesel made exclusively from recycled cooking oil collected from the MGM Grand Casino Resort in Las Vegas, Nevada and produced by Biodiesel Industries, Inc. Drivers carried with them buckets of the Nevada-made biodiesel (B100), which they mixed with conventional diesel to create B20.

Before departing on its clean, cross country journey, the Bio Bug was on display for Nevada state legislators as part of an outreach event coordinated by the Truckee Meadows Clean Cities Coalition.

Keith Wells of the Nevada State Motor Pool drove the first leg of the trip from Reno, Nevada to Philadelphia. Making stops in Utah, Colorado, Missouri, and Kentucky, Wells reported achieving 45 miles per gallon. For three



The BioBug began its cross-country journey in Carson City, Nevada. From left: Norma McCusker, Western Energetix; Jason Geddes, Nevada Department of Agriculture; Adele Malone, Nevada Department of Environmental Protection; Jim Brandmueller, Nevada Energy Office; and Linda Obrien, Washoe County Health Department.

Biodiesel Industries, Inc.

days, the colorfully decorated vehicle joined other AFVs on display in the Expo Hall at the Clean Cities Conference. Frank Revell, also from the Nevada State Motor Pool, drove on the return trip, with stops in Tennessee and Texas.

For more information about the Bio Bug and its trip to the National Clean Cities Conference, please visit the Biodiesel Industries, Inc. web site: www.pipeline.to/biodiesel.



Federal News

DOE Awards More than \$4 Million to Clean Cities Coalitions

Many announcements are made at the National Clean Cities Conference. Attendees often eagerly await National Partner and Clean Cities Coalition award presentations, but it's the announcement of State Energy Program (SEP) Special Projects grant recipients that always keeps coalition coordinators at the edge of their seats.

Each year, the U.S. Department of Energy (DOE) offers funds to designated Clean Cities coalitions through the SEP grant program. This year, coalitions submitted nearly 130 proposals seeking funds for

SEP Grant Amounts by Project Type

Niche markets	\$1,890,448
Infrastructure	1,486,285
School buses	487,147
Training	225,365
Coordinators	357,286
Total	\$4,446,531

alternative fuel niche market development projects, alternative fuel infrastructure, alternative fuel school buses, training, and Clean Cities coordinator positions.

DOE awarded more than \$4.4 million to 54 projects in 25 states,

including the District of Columbia, but what's more, the estimated cost-share from the funded projects is more than \$40 million, or ten times the federal investment. For more information on which projects were funded, please visit the Clean Cities Web site at www.ccities.doe.gov/sep_winners.shtml.

Nearly half of the proposals submitted sought funds for natural gas projects—among the winners is Sysco Food Services of Houston. A member of the Greater Houston Clean Cities Coalition, Sysco received two grants for a total of \$350,000. The funds will help the company convert 15 of its heavy-duty distribution trucks to liquefied natural gas (LNG) and build an LNG refueling site in Houston. Following in the footsteps of Clean Cities National Partner, H.E.B. Foods, also based in Texas, Sysco plans to eventually convert all 130 of its trucks to LNG.

According to Gary Cullen, Vice President of Operations, the company decided to pursue alternative fuels because Houston suffers from some of the worst air pollution in the country. "It's the right thing to do," said Cullen. "We want to use alternative fuels to do our part to clean the air and conserve petroleum products, and we think we can do that without sacrificing service to our customers."



Clean Cities International News

New Delhi: A Hot Climate—and Now the Hottest Market for NGVs

The Indian government has enacted tough, progressive air quality polices in New Delhi in an effort to help the city lose its distinction as one of the top ten most polluted regions of the world. On March 31, 2001 an India Supreme Court ruling took effect, requiring the entire New Delhi bus fleet, as well as other public transport vehicles, to convert from diesel to compressed natural gas. In all, the volume of vehicles slated for conversion is enormous—12,000 buses and 9,000 taxis, in addition to numerous auto rickshaws that ply the streets.

As for refueling, 65 of the expected 90 to 120 "daughter stations" have been completed. Unfortunately, not all of the lines leading from the natural gas pipeline are operating—drivers must wait hours for fuel that is delivered in cascade cylinders. And unlike U.S. buses, CNG tanks are placed below the bus floors; "spurious" cylinders have caused tragic accidents. "The Indians need U.S. product

and they need help with training," said Clean Cities Program Deputy Director Marcy Rood. "Crucial safety standards and training are not yet in place," she said.

According to Rood, success of the natural gas industry in New Delhi is critical not just for the local effort, but also because it could affect upcoming decisions in other Indian cities currently considering alternative fuels. Repercussions of a failed program could also negatively affect the global natural gas market, she said.

In April, the Department of Energy's Clean Cities Program and the U.S. Environmental Protection Agency led a delegation to India's first alternative fuels conference, sponsored by the Society of Indian Automobile Manufacturers and the Central Pollution Control Board. According to Rood, the Indians greeted them enthusiastically and greatly appreciated the information the group presented. The delegation's future plans include establishing a much-needed "train the trainer" program, with help from the National Alternative Fuels Training Consortium. For more about the trip, please visit www.ccities.doe.gov/international.



Clean Cities Roundup

FutureTruck Students Celebrate Success in Washington, D.C.

The checkered flags waved on June 13, as fifteen university teams and their “future trucks” powered past the finish line at the U.S. Department of Energy (DOE) in Washington, DC. The event culminated many months of hard work (or as one student put it, “blood, sweat, and tears”) involved in the 2001 FutureTruck competition.

In the 2001 FutureTruck competition, co-sponsored by DOE and General Motors, students from the United States and Canada used hybrid design strategies, alternative fuels, and other advanced technologies including fuel cells, to re-engineer Chevrolet Suburbans—all part of a quest to create the cleanest, greenest, most fuel-efficient sport utility vehicle.

Each FutureTruck vehicle underwent a more than a week of rigorous emissions, design, and performance testing at the General Motors Proving Ground in Michigan, before the teams drove to Washington for the finish line festivities.

In one of his first appearances as DOE’s new Assistant Secretary for Energy Efficiency and Renewable Energy, David Garman welcomed the FutureTruck teams to the finish in Washington. The parade of vehicles then proceeded to a display on Capitol Hill, where the students shared their work with more than twenty members of Congress, as well as Secretary of Energy Spencer Abraham.

Competition awards were announced at an evening ceremony held at the Smithsonian’s National Museum of Natural History. The University of California at Davis captured first place in the overall competition. UC-Davis’ achievements included a 42% improvement in the EPA adjusted combined-cycle fuel economy (19.09 mpg vs. 13.46 mpg for the stock Suburban); and emissions equivalent to that of a certified ultra low emission vehicle (ULEV) and acceleration comparable to the stock vehicle. Efforts to reduce weight and aerodynamic drag contributed to the



GM’s Ed Koerner; Bill Nye, “the Science Guy;” DOE’s David Garman; and Robert Webb, representing the Canadian Embassy, each waved a checkered flag as FutureTruck teams crossed the finish line.

team’s success. The University of Wisconsin, which placed second with its “Moolenium” vehicle, achieved 28 miles per gallon equivalent in the on-road fuel economy test—a 62% improvement over the stock Suburban (17.3 mpg). The Moolenium’s emission score, however, kept Wisconsin from taking first place. More than 30 awards were presented in a variety of categories including best use of advanced materials, achieved by the University of Wisconsin, and best use of advanced technologies, presented to Michigan Tech. For a detailed list of award winners and more information on FutureTruck, please visit www.futuretruck.org.

Pickens Fuel Wins Blue Sky Award

Pickens Fuel Corp. was awarded this year’s Blue Sky Award by WestStart, a California-based, advanced transportation organization. The award recognizes outstanding marketplace contributions to advanced clean transportation and efforts to get more AFVs on the road.

Pickens was honored for its commitment to helping fleets affordably convert to alternative fuels. The company has developed an economic business model that links a natural gas fueling station to an “anchor” tenant with a high fuel-use fleet. This model helps to amortize fixed costs and build economically viable stations.

Clean Air Excellence Awards Program

EPA has launched its second annual Awards Program honoring outstanding, innovative efforts that support progress in achieving cleaner air. Award categories include the following: Clean Air Technology, Community Development/Re-Development, Education/Outreach, Regulatory/Policy Innovations, Transportation Efficiency Innovations, and Outstanding Individual Achievement. For more information, visit www.epa.gov/oar/caaac or contact Paul Rasmussen (EPA) at 202-564-1306, rasmussen.paul@epa.gov.



Members of the Ohio State University team met with Senator George Voinovich (R-Ohio) at the FutureTruck display on Capitol Hill on June 13.



From the Automakers

California Fuel Cell Partnership Shoots for 70 FCVs by 2003

Launched to advance fuel cell technologies as an environmentally friendly solution to pollution and America's dependence on foreign oil, the California Fuel Cell Partnership (CFCP) labels itself "a unique collaborative of auto manufacturers, oil companies, a fuel cell company, and the state of California."

The association's more than 25 partners range from industry to government. They include DaimlerChrysler, Ford, General Motors, American Honda, and Volkswagen; BP, Shell, and Texaco; Ballard Power Systems and XCELLSiS; and the Department of Energy and the California Air

Resources Board. Its associate partners include AC Transit, SunLine Transit Agency, and Pacific Gas & Electric.

With a goal of placing 70 demonstration fuel cell vehicles (FCVs) on the road by 2003, the 2-year-old group has structured this objective into three one-year phases.

Phase I, which ended in

2000, consisted of planning and project development, and partner additions and facilities preparation. Phase II, which will end in 2001, includes the demonstration of hydrogen fueled passenger cars and transit buses and the building and management of a hydrogen refueling station in West Sacramento. During the final phase, from 2002-03, manufacturers will demonstrate more than 50 passenger cars using hydrogen, methanol and a petroleum based fuel, and transit agencies will demonstrate 20 hydrogen buses.

The vehicles will look and perform like traditional vehicles, says the partnership's Web site at www.drivingthefuture.org. The only difference is that they will emit zero to near-zero emissions and show increased fuel efficiency. CFCP also promises the vehicles will offer lower maintenance costs, an impressive driving range, a vibration-free ride, and ample power to run entertainment features, such as global positioning systems and Internet connections.

GM Takes an Interest in Quantum

General Motors says it is taking a "substantial minority stake" in Quantum Technologies, a subsidiary of alternative fuels developer IMPCO, as part of a deal to develop hydrogen technology for fuel-cell powered vehicles. The deal will facilitate development of hydrogen storage and handling, and electronic control technologies.

"Quantum Technologies is recognized as the industry leader in hydrogen storage and handling for automotive applications," said Larry Burns, GM vice president for research and development, and planning. "We've had a long relationship with Quantum in the alternative fuels field. This agreement will enable our two companies to work together on bringing fuel cell vehicles to the market. It is a logical next step on the long road to a hydrogen-based economy."

In April, Quantum announced that it has developed of a compressed natural gas (CNG) fuel system for GM's first Chevrolet Zafira, a compact van manufactured at GM's Thailand Assembly Center. The Zafira is powered with clean CNG and equipped with a 1.8 liter, 115 hp engine.

"Automatic" Insight Now Available

Hybrid electric vehicles are gaining popularity—automakers continue to report record sales. And now car buyers who prefer automatic transmissions now have a new hybrid option. Honda recently announced the availability of an Insight model featuring a continuously variable transmission (CVT), which eliminates the need to manually shift gears.



Honda Insight

American Honda

According to Honda, the CVT model allows drivers the convenience of an automatic transmission while still providing "the fuel efficiency benefits and snappy performance of a manual transmission."

Although it's not quite as fuel efficient as its manually driven counterpart, the Insight CVT still achieves 57 miles per gallon in the city and 56 miles per gallon in highway driving. It also has the idle-stop feature that allows drivers to save gas while idling in traffic or stopped at a red light. The engine automatically restarts when the driver removes his or her foot from the brake pedal. Certified to California's super ultra low emission standard, the Insight CVT emits 96 percent less pollutants than a typical car.

A hybrid-electric Civic model is planned for 2003. For more on the Insight, check out www.honda.com.

Award Winners

Clean Cities Coalition Awards

At this year's Clean Cities Conference in Philadelphia, DOE's Tom Gross, Deputy Assistant Secretary for Transportation Technologies, presented 10 coalitions with awards to recognize their outstanding achievements. The award selections were based on the annual coalition surveys.

- **Movers & Shakers Award** for adding the most AFVs: *Kansas City Regional Clean Cities Coalition*
- **Gold Star Award** for adding the most alternative fuel stations: *Los Angeles Clean Cities Coalition*
- **Empire Award** for adding the most stakeholders: *Wisconsin Clean Cities Southeast Area, Inc.*
- **Few Good Fleets Award** for recruiting the most private fleets: *Wisconsin Southeast Area Clean Cities, Inc.*
- **Madison Avenue Award** for outstanding public outreach: (tie) *Central Oklahoma Clean Cities Coalition* and *Weld/Larimer/Rocky Mountain National Park Clean Cities Coalition*
- **Rainmaker Award** for securing the most funding from grants and other resources: (tie) *Clean Cities-Atlanta*, *Southern California Association of Governmental Clean Cities Coalition*, and *Ocean State Clean Cities Coalition*
- **Legal Eagle Award** for efforts to support major AFV legislation at the state or local level: (tie) *Metro Denver Clean Cities Coalition*, *Greater Portland (ME) Clean Cities Coalition*, and *Los Angeles Clean Cities Coalition*

For details on the achievements of each of the 2001 award-winning coalitions, please visit www.ccities.doe.gov/pdfs/winning_coalitions_summary.pdf.

Clean Cities National Partner Awards

Also honored at the Clean Cities Conference were recipients of this year's National Partner Awards, presented to 10 individuals, organizations, and companies. These recipients were also inducted into the Clean Cities Hall of Fame.

For details on individual achievements, please visit: www.ccities.doe.gov/pdfs/Partner_awards_2001.pdf.



Right to left: Tom Gross, DOE; Alan Macht, Schwan's; Chris Greve, Schwan's; Randy Zanata, Northside Independent School District; Genie Jones, American Airlines; Terry Henry, Denver International Airport; Alan Walsh, Waste Management; Bruce Stockman, Minnesota Corn Growers Association; Mike Taylor, Minnesota Dept of Commerce; Michael Hill, MARTA; Jim DuCharme, Holiday Stationstores; Joe Spano, New York State Clean Fueled Vehicle Council; Joe Darling, New York State Clean Fueled Vehicle Council.

Clean Cities gives special thanks to all of the 2001 conference sponsors, particularly local hosts PECO Energy, City of Philadelphia, and the Greater Philadelphia Clean Cities Program.