

# Energy Policy Update

## Energy and Environmental News

### June 2004



ARIZONA DEPARTMENT OF COMMERCE  
*Our Job is JOBS!*  
ENERGY OFFICE

Janet Napolitano, Governor  
Gilbert Jimenez, Commerce Director  
George Seitts, Energy Office Director

This newsletter is published by the Arizona Department of Commerce Energy Office and is provided free of charge to the public. It contains verbatim excerpts from international and domestic energy and environment-related publications reviewed by the Education and Community Outreach personnel. For inquiries, call **(602) 771-1137** or toll free **(800) 352-5499**.

Compiled and Edited by Mark Hope, Energy Research Coordinator

To send your questions or comments, or to register to receive this newsletter electronically, contact: [markh@azcommerce.com](mailto:markh@azcommerce.com).

For additional program information, access: <http://www.azcommerce.com/newenergy/publications.html>.

**FOR YOUR CONVENIENCE, ARIZONA-RELATED TITLES ARE HIGHLIGHTED IN GRAY**



## Alternative Energy & Efficiency

### Two Phoenix Firms to Build Generators

[Arizona Republic web site, April 28] **An Arizona company and one of the state's top industrialists are betting that a 20-year-old technology holds the key to making solar energy cost-effective.** The main reason that solar energy hasn't blossomed in one of the country's sunniest places is that it costs far more to produce than conventional electricity. But Phoenix-based Stirling Energy Systems Inc. and Schuff Steel Co. Chairman Dave Schuff on [April 27] unveiled a prototype generator that could bring the cost of solar electricity down to five cents to six cents a kilowatt. That's comparable to power produced by conventional plants powered by natural gas. Schuff will build six of the generators for Stirling this year with hopes of eventually churning out thousands of the units. Each one can generate 25 kilowatts of electricity, enough to power about eight homes. Arizona Public Service Co., which is under an Arizona Corporation Commission mandate to generate 1.1 percent of its electricity through renewable resources by 2007, has agreed to buy 10 of the units next year. Southern Nevada Water Authority wants 40.... Schuff's company is manufacturing the 40- by 38-foot solar dishes under a contract with Stirling, but Schuff tentatively has agreed to personally invest money in the project.... The array of mirrors that covers the dish concentrates sunlight on an eight-inch opening. There, heat from the sun's rays runs a four-cycle engine that powers an electric generator. Stirling has acquired a license to manufacture the engines in the United States from Sweden's Kockums AB.... Unlike photovoltaic cells that convert sunlight into electricity through a chemical process, the dishes do not become less efficient in hot weather. And the Stirling units use no water, in contrast to so-called solar trough generators that use the sun's energy to produce steam to turn turbine generators. But at a cost of \$300,000 per unit, the Stirling generators are hardly cost-effective. They can produce electricity for about \$1 per kilowatt, or 50 times more than power generated by the Palo Verde

Individuals with disabilities who need the information contained in this publication in an alternate format may contact the telephone number above to make their needs known. Requests should be made as soon as possible to allow sufficient time to arrange for the accommodation.

Nuclear Generating Station, west of Phoenix, and 20 times more than that produced by a natural-gas generator. But Liden notes that the first units, including the engines, are being built by hand. Stirling believes it can bring the cost down to about \$25,000 per unit if they are mass-produced. That would make them competitive with conventional power plants, Liden said.

## **Consumer Research Predicts 50 Percent Hybrids by 2010**

[*Calstart web site, May 12*] **A new study from TNS Automotive unveils consumers' interest in alternative fuel vehicles, as well as purchase plans and price expectations of these vehicles.** A release from the automotive division of TNS, one of the world's three largest market information companies, indicates the early adopters of alternate fuel vehicles are already out there, while emphasizing the importance of identifying the next wave of followers - likely to be young, male, without families, and interested in buying into the sports and mid-range segments of the market. J.D. Power Associates had made ambitious predictions for hybrids, but then scaled back, based on a number of economic and pricing factors. The key findings from this study include that 39 percent of consumers are interested in alternative fuel vehicles, with 26 percent considering purchasing one. Men (41 percent) are more interested in alternative fuel sources than women (37 percent), and 42 percent of consumers without kids are interested in doing so. Forty-six percent of consumers age 25-34 are interested in alternative fuel vehicles, yet only 29 percent of them are considering purchasing one. Although only 28 percent of consumers age 60-65 are interested in alternate fuel vehicles, those who are interested are willing to pay a higher cost for them. Mid-range and sporty vehicle buyers are also significantly more likely to consider purchasing one with an alternative fuel source when compared to luxury vehicle or truck buyers. The average expected price for an alternate fuel engine falls between \$1000 and \$2000. Those looking to purchase a sporty or luxury vehicle are the most willing to pay over \$3000 for this feature....

## **Hybrid Taxis: An Important Urban Niche**

[*Calstart web site, May 3*] **New York, NY - Fuel-efficient gas-electric hybrid vehicles have found an eager new consumer niche: taxi services.** Once viewed as the vehicle of choice for environmentally conscious consumers and entertainers, urban taxi operators from Vancouver to Boston to New York City are discovering the benefits of hybrids. The cars perform better in stop-and-go traffic: the conventional engines shut off entirely when stopped in traffic; regenerative braking helps recharge battery systems; and the gas engines generally get most use at higher speeds. Maintenance costs tend to be lower, since engine and brake system wear is reduced. Environmentally conscious consumers will go out of their way to choose a hybrid service, and some airports and municipalities offer tax breaks for eco-friendly fleets. According to Bart Chezar, a transportation consultant, each radio-dispatched car in NYC replaced with a hybrid saves the operator \$3,800 a year if gas prices are about \$2 a gallon. Government incentives and tax credits can also reduce the added cost of the technology, making them more attractive to fleet and individual buyers.

## **Solar Energy Celebrates 50th Anniversary**

[*Reuters, April 28*] **Portland, OR. - Fifty years ago, two Oregon scientists stood on the wide, green lawn of Bell Labs headquarters in New Jersey to announce the world finally had a way to turn sunlight into electricity.** Daryl Chapin, an electrical engineer, and Gerald Pearson, a physicist, joined chemist Calvin Fuller on April 25, 1954, to demonstrate the first practical solar cell made of silicon - later to become the prime ingredient in computer chips. But it had taken more than a century since French experimental physicist Edmund Becquerel discovered the photovoltaic effect in 1839 before the process that converts light into electricity could be commercialized with the technology developed by the Bell Labs trio. "An amazingly simple-looking apparatus made of strips of silicon showed how the sun's rays could be used to power ... a transistor radio transmitter carrying both speech and music," the original press release from Bell Labs said. Chapin and Pearson were both graduates of Willamette University in Salem, which awarded them honorary doctorates for their work in 1956. Their research with Fuller built on the theories about the photoelectric effect that won the Nobel Prize for Albert Einstein in 1921. The trio were originally searching for a solution to battery problems within the Bell telephone system when they created a solar photovoltaic cell capable of generating enough power from the sun to run electrical equipment. "It was a modest application at first - they were just trying to power a small radio," said Alice E. White, director of integrated photonics research at what is now Lucent Technologies Bell Labs. A half century later, solar cells power everything from wallet calculators to the Mars Rover. They have also significantly reduced the

cost of energy as the technology has been refined. "At the time, manufacturing costs were over \$1,700 per watt. But costs fell to \$20 per watt by the 1970s and are now about \$3 per watt," said Christopher Dymond, solar specialist for the Oregon Department of Energy. In addition, a little reverse engineering has made photovoltaic cells essential to the Internet. By reversing the process and converting electric signals into light, data and other types of communication signals can be carried over high-capacity fiber optic lines that link high-speed networks. "The Internet backbone wouldn't be possible without fiber optics switched with photodetectors," said Adam Grossberg, a Bell Labs spokesman.

## **Suzuki Announces New Compressed Natural Gas-Powered Wagon**

[*Calstart web site, May 17*] Tokyo, Japan - **Suzuki Motor announced [on May 17] that the automaker will release a Wagon R model that uses a compressed natural gas (CNG)-fueled engine in early July.** CNG-powered vehicles, compared to gasoline- or diesel-powered vehicles, produce fewer exhaust emissions that contribute to global warming and air pollution, such as CO<sub>2</sub> [Carbon Dioxide] and Nox [Nitrogen Oxide], and are thus considered to be one of the more eco-friendly alternative fuel vehicle choices available today. The new CNG-powered Wagon R is based on the gasoline-powered version that Suzuki launched in September 2003, and is equipped with three compact fuel tanks, providing a maximum cruising range of 161 miles (260km) per filling, while maintaining the same interior space as its predecessor. The new model is priced at approx. \$17,600 U.S.... In Asia, including Japan, India and China, natural gas is gaining greater acceptance as vehicle ownership rates grow, and pollution and fuel demand increase.



## **Legislation & Regulation**

### **APS May Lower Rate Request**

[*Arizona Republic web site, May 6*] **Arizona Public Service Co. [APS] may reduce its proposed 9.8 percent rate increase under terms of a settlement being discussed with regulators.** A five-year cap on electric rates expires in July and APS says it needs an additional \$175 million per year from consumers, or about \$9.25 more per month on the average residential bill, to cover rising costs and earn a fair rate of return. During the past five years APS' rates have decreased 7.5 percent for residential customers. But the staff of the Arizona Corporation Commission disagrees with APS' proposal and has recommended an eight percent decrease in rates instead of the 9.8 percent increase the utility wants. The commission regulates APS and must approve its rates. It is unclear at this point whether a settlement would result in a rate increase or decrease. An eight percent decrease would lower the average \$94.33 monthly electric bill to \$86.78, while a 9.8 percent increase would raise it to \$103.57. The consumer-watchdog Residential Utility Consumer Office also believes the rates should come down instead of going up. That group has recommended a 2.84 percent decrease. APS provides electricity to about 900,000 customers in Arizona. Arizona's largest electric utility filed its rate request last year and has been submitting evidence to the commission and other parties to support the request. But with the huge disparity between what APS wants and what the commission staff believes it deserves, the utility has now proposed settling the case.... APS is asking for rates to cover its expenses and provide an 8.67 percent return on its capital, or assets, including an 11.5 percent return on common equity. But given prevailing low interest rates, the commission staff has proposed a 7.26 percent return on assets and a nine percent return on equity. APS also wants to include as expenses a \$900 million investment it made in new power plants in contemplation of a deregulated electricity market. In addition, the utility wants to be reimbursed for a \$234 million asset write-down made under a settlement related to electricity deregulation. The commission staff has recommended against putting the power plants into the rate base at present and has recommended against reimbursing the company for the write-down.

### **Governor Signs Bill to End MTBE Use in Valley Gas**

[*Arizona Republic web site, May 13*] **Gov. Janet Napolitano has signed a bill that ends the use of the controversial additive MTBE in gasoline sold in the Valley.** Supporters say the move will protect Arizona's water supply and could eventually lower prices by opening Phoenix up to larger fuel supplies. "This is a very good thing to protect our precious water resources," said Steve Owens, director of the state Department of Environmental Quality [DEQ].... The ban officially begins Jan. 1. A requirement that stations in Maricopa County use the additive already has been lifted. Originally, MTBE - methyl tertiary butyl ether - was called a "miracle additive" for its pollution-cleaning abilities. It has been used to reduce air pollution

from gasoline during summer months since 1997.... Newer additives that cause less environmental damage are now available, and Owens said he is confident Arizona will find the right formula to replace MTBE. Right now, it is not known whether banning MTBE will help cash-strapped motorists who have been dealing with skyrocketing prices at the pump. Mark Ellery, an energy policy adviser for the Department of Commerce, said removing MTBE could eventually open Phoenix up to a larger market of gas from Houston and California. "It makes sense to ban a compound that is suspected of being bad," he said. "This will make our supply more flexible. This will open us up to a larger market." The bill passed unanimously out of the House and Senate, a rarity in legislative politics. Valley gas stations are no longer required to sell gas blended with MTBE to reduce pollution. Summer gas is blended to reduce nitrogen oxides and volatile organic compounds in the air. Summer gas has typically been made by adding MTBE. MTBE increases the oxygen content in gas and makes it burn cleaner. Metropolitan Phoenix uses a different blend from the rest of the state, so gasoline can't be diverted from Tucson or Flagstaff to relieve a shortage. Last summer, when a burst pipeline reduced supplies to the Valley, gasoline was plentiful in other parts of the state. MTBE has been controversial because if it leaks into water supplies, it can contaminate that water. California banned MTBE after controversy surrounding its presence in Lake Tahoe and other bodies of water. The Environmental Protection Agency and ADEQ has determined that it would not be harmful to air pollution if the Valley didn't use MTBE. Therefore, the ban of MTBE will not affect cars passing emissions tests.

## **Senate Energy Tax Package Price Soars to \$18 Billion**

[Reuters, May 14] Washington, D.C. - **An unexpected increase in projected use of tax credits for wind, solar, and other "green" electricity sources have raised the cost of energy tax breaks approved by the Senate to about \$18 billion from \$14 billion, a Senate aide said [on May 13].** The cost of the energy incentives could soar even higher by the time Senate and House negotiators reconcile bills from both chambers, according to some experts. The Senate on [May 11] passed a corporate tax bill which included energy measures then valued at about \$13 billion to \$14 billion. Tax credits would be extended to companies that produce electricity from wind, solar, and other renewable energy sources. The Senate bill would also encourage building new nuclear power plants and provide federal financial support for a proposed Alaska pipeline to ship natural gas to the Midwest. An aide with the Senate Finance Committee said that the 1.8 cent per kilowatt-hour clean energy credit extended to wind, biomass, farm waste, geothermal, and solar was estimated to cost about \$3 billion in the original 10-year energy package. Committee staff expected the cost to go down to about \$2.8 billion in the latest version of the bill, because two years of benefits were cut. However, the cost of the credits is now estimated at about \$4.4 billion, although the amount has not yet been verified by the joint congressional tax committee. "We thought we were going to go down, but instead we had a huge increase, based on the fact that we're getting more renewable electricity," said the committee aide, who spoke on condition of anonymity. Wind credits account for about two-thirds of the increase, with other renewable energy sources claiming the rest, the aide said. "It's a good use of taxpayer dollars," the aide said. Republican sponsors said the new, higher \$18 billion cost of the package is fully offset by revenue raising measures related to ethanol excise taxes and prohibitions on fuel fraud and certain tax-exempt leasing arrangements. However, the cost is likely to creep upward once the Senate enters negotiations with the House of Representatives to develop a final bill, said Keith Ashdown at Taxpayers for Common Sense, a federal spending watchdog. "Congress plays all these smoke and mirror games to make things look smaller than they appear," Ashdown said. Amendments to the tariff bill, including one to decrease the depreciation period for new transmission lines, have not been weighed by the Joint Taxation Committee. That measure is expected to cost less than \$1 billion over eight years, the Senate source said. For their part, U.S. wind producers say Congress' failure to extend tax credits that expired at the end of 2003 will mean fewer new wind farms built this year. Less than 500 megawatts of new capacity will be built in 2004, after near-record growth of 1,687 megawatts in 2003, the American Wind Energy Association said....

## **Senators Promote Biomass Projects**

[Calstart web site, May 10] Washington, D.C. - **A number of Senators, Bush Administration officials and researchers said recently the United States needs to increase its support for and use of biomass for fuels, especially in developing waste products into fuel, reports *Environment & Energy Daily*.** Biomass is the generic term for any living matter that can be converted into usable energy through biological or chemical processes. The Agriculture Committee included a \$405 million subsection in the 2002 farm bill to promote use of ethanol, biodiesel and other alternative fuels produced on farms and ranches. It also has a biomass research and development title, a bio-energy program, renewable energy

loans and a provision to encourage federal procurement of bio-based, rather than petroleum-based, products, including inks, solvents, lubricants and plastics. James Woolsey, former director of the Central Intelligence Agency, said developing waste products into fuel would be necessary to obtain enough ethanol to make a substantial dent in U.S. oil imports, and that inexpensive feed-stocks and waste products from the agriculture sector can and should be developed as fuel for use within the existing transportation infrastructure....



## Arizona & Western Power

### Hybrid HOV Bill Passes California Assembly

[*Calstart web site, May 7*] Sacramento - **A bill proposing access to car pool lanes by solo drivers of specific hybrid-electric vehicles was passed by the California Assembly [on May 7], reports *The Associated Press*.** The Assembly voted to allow the high-mileage, low-polluting vehicles to use car-pool lanes regardless of how many riders they carry as an incentive to buyers. "There is a finite amount of fuel in the world," said one of the bill's supporters, Assemblyman John Benoit, R-Bermuda Dunes. "We should do what we can to incentivize people to use it as efficiently as possible." Most car-pool lanes require at least two riders per vehicles, at least during commute hours, but there are some that require at least three occupants per vehicle. Pavley's bill would enable hybrids that get at least 45 mpg and meet low emission requirements to get decals allowing them to use car-pool lanes even if they don't have the required number of occupants. Currently, only battery electric vehicles (EVs) or dedicated natural gas vehicles (NGVs) are accorded this privilege. Some critics have attacked both the concept behind car-pool lanes and Pavley's bill, claiming the legislation would favor an elitist class of people who can afford expensive vehicles, while others express concerns that promoting these already popular advanced technology vehicles may undercut the growth of other alternative fuels. The bill, sponsored by Assemblywoman Fran Pavley, D-Agoura Hills, passed the Assembly 54-14 [on May 6] and now goes to the Senate. Passing that hurdle, it still must receive federal approval. The bill would limit the issuance of decals to 75,000 hybrids, and the DMV [Department of Motor Vehicles] could also shut down the program at 50,000 if general congestion becomes a problem, or selectively discontinue the program on any particular car-pool lane if the lane [becomes] too jammed.

### Justices Void Los Angeles Bus, Shuttle Smog Rules

[*Los Angeles Times web site, April 28*] Washington, D.C. - **The Supreme Court ruled [on April 28] that Southern California's Air Quality Management District may have gone too far in imposing its own antimog rules for city buses, airport shuttles and other vehicles.** Justices, on a 8-1 vote, sided with oil companies and diesel engine manufacturers who claimed that local pollution rules conflict with national standards. The San Francisco-based 9th U.S. Circuit Court of Appeals upheld the tougher local rules, but the decision was voided by the high court. The Supreme Court sent the case back to California to consider the issues. Justice Antonin Scalia, writing for the court, said that the emissions rules appear to [be] blocked by the federal Clean Air Act. "If one state or political subdivision may enact such rules, then so may any other; and the end result would undo Congress's carefully calibrated regulatory scheme," he wrote. Justice David H. Souter filed the only dissent. Souter, of New Hampshire, said he disagreed that the Clean Air Act "prohibits one of the most polluted regions in the United States from requiring private fleet operators to buy clean engines that are readily available on the commercial market." The rules apply to Los Angeles, San Bernardino, Riverside and Orange counties, which together have the nation's worst air-quality problem. The restrictions were imposed in 2000 and apply to fleets of vehicles such as buses, waste haulers and others. The Clean Air Act gives states some authority to set their own rules....

### Napolitano Unhappy With Bush's Response on Gas Prices

[*Arizona Republic web site, May 13*] **Arizona Gov. Janet Napolitano was less than thrilled with the response to her Feb. 25 letter asking President Bush to launch a federal inquiry into soaring gas prices.** A White House letter dated April 30 arrived [on May 12]. It included an itemized list of the factors contributing to the increase with no indication that an investigation would be launched. It also was from an assistant and not the president. "In the 10 weeks since I sent my letter, we have no new answers, another spike in gas prices and no immediate end to the spiraling prices in sight," she said in a press release [on May 12]. When Napolitano sent her letter asking Bush to investigate, the average price of non-leaded

regular in Arizona was \$1.89. Now, it's \$2.16. "What is incredible to me is that at a time when the oil industry is reporting billions in profits, we can't get anything better than the standard answers," Napolitano said.

### **Regulators Decry Planned UniSource Sale**

[*Arizona Republic web site, May. 4*] **State regulators have concluded that a planned \$3 billion acquisition of UniSource Energy Corp. is not in the public interest and should not be approved as proposed.** The leveraged buyout planned by Saguaro Utility Group LP could swamp Unisource, Tucson Electric Power Co.'s parent, with debt and undermine its effective operation, the staff of the Arizona Corporation Commission wrote in its assessment of the proposed transaction. The commission's staff, one of several groups that will offer testimony in the case, worried that the buyers could view the 550,000-customer utility as a "cash cow" and apply major pressure to reduce costs. "The transaction contains no enforceable protections against reductions that would be inappropriate to maintaining safe, reliable and adequate electric service," the staff wrote. But the staff also offered some suggestions on how the sale could be altered to alleviate those concerns. One suggestion was that a "firewall" could be constructed to protect the utility's assets from being depleted by the holding company. UniSource spokesman Steve Lynn said the firm is confident it can address all the concerns. "None of the issues are unusual or out of the ordinary," he said. In the case, the staff and other parties, such as the company and the Residential Utility Consumer Office, offer testimony to an administrative-law judge, who renders an opinion on the plan. The judge's opinion is put before the five commissioners, who can approve, modify or reject it. UniSource provides electric service to Pima County and portions of Santa Cruz and Mohave counties. It provides natural gas to much of northern Arizona, including Yavapai and Coconino counties....

### **Size of Gas Spill Issue in Cleanup**

[*Arizona Republic web site, May 11*] **Last summer's gasoline pipeline break spilled at least 32,000 gallons of fuel north of Tucson, state officials said [on May 10], as they accused pipeline operators of inattention to the extent of the contamination they have caused.** Kinder Morgan Energy Partners, operator of the pipeline, said state officials are obsessed with checking the accuracy of last summer's estimates instead of focusing on cleanup activities. Steve Owens, director of the Arizona Department of Environmental Quality [ADEQ], said the 32,000 gallons is more than triple the company's initial estimate of 10,000 gallons and double its February estimate. "You'd think it'd be a relatively simple matter for Kinder Morgan, which has an expertise in running pipelines, to know how much fuel is going through the pipeline," Owens said. He said he was offended by the company's response that trying to better estimate the amount of spilled fuel is of "little benefit." If ADEQ had known that at least 32,000 gallons had spilled, Owens said officials would have launched more aggressive cleanup efforts. Even now, it's important to know how much fuel is involved to guide ongoing cleanup efforts, he said. But Jay Thorne, spokesman for Kinder Morgan, said state regulators should not hold the company to estimates but rather to performance. "Estimates are precisely that," he said. "We fully expected the number to be bigger than our original estimate." However, he said company officials dispute ADEQ's figure of 32,000 gallons. "Regardless, our focus is to clean up the site," Thorne said. The pipeline break disrupted the Valley fuel supply for several days in early August, leading to panic buying and price spikes....



## **Energy-Related Environment**

### **Clean-Diesel Rules are Hailed**

[*Arizona Republic web site, May 13*] **New rules requiring clean diesel fuel in everything from tractors to trains are being hailed as one of the biggest clean-air steps since the nation started tackling air pollution.** But locally, this historic step by the U.S. Environmental Protection Agency [EPA] is barely causing a ripple. "I don't see it being all that big a deal for us," said Mike Hoover, manager of Sundt Construction Inc.'s division that deals with heavy-duty civil projects. "We applaud their effort to clean up the environment." Likewise, the construction manager on the new Arizona Cardinals stadium surveyed the backhoes, bulldozers and other heavy-duty equipment being used at the site and said the new fuel standards should be a good thing.... The new diesel rules, signed [on May 11] by EPA Administrator Mike Leavitt, are expected to cut emissions from off-road diesel engines by 90 percent. The rules also aim to reduce the sulphur content in diesel fuel by 99 percent by the year 2010. Sulphur is a key ingredient in

producing diesel's telltale black smoke and is a contributor to the Valley's Brown Cloud. [On May 13], regional EPA administrator Wayne Nastri will hold a news conference at the site of the Cardinals stadium to underscore the wide-reaching effects of the diesel rule.... Off-road vehicles include those used at construction and mining sites, as well as marine and train engines. Nastri said the new rule consists of two parts: cleaner engine standards for off-road engines, which will be phased in from 2008 to 2014, and low-sulphur standards, to be phased in from 2007 to 2010. By the time those rules are in place, and the engine fleet has turned over, the U.S. should see tremendous health benefits, he said. For example, by 2020, the EPA projects there should be 12,000 fewer deaths due to diesel exposure and 15,000 fewer heart attacks nationally. The tighter fuel standards are expected to boost diesel prices four to seven cents a gallon. "A lot of people have talked about the cost," Nastri said. "But there's also a cost to health." EPA estimated that the health benefits from cleaning up the off-road diesels will outstrip the cost to do so by a factor of 40 to one. The rule was hailed by environmentalists, who have had few kind words for the Bush Administration's environmental policies. Industry representatives also went along with the new rule....

## **DOE and General Motors Announce CHALLENGE X Competition**

[U.S. Dept. of Energy web site, May 11] Washington, D.C. - **The U.S. Department of Energy (DOE) and General Motors (GM) [on May 11] announced the participants of an exciting new competition to challenge engineering students across North America to explore advanced technologies that will reduce the environmental impact of vehicles while maintaining utility and performance.** "The Department of Energy is pleased to co-sponsor CHALLENGE X competition," said Secretary of Energy Spencer Abraham. "This competition will give engineering students from seventeen North American universities hands-on experience in redesigning a Chevrolet Equinox to increase fuel efficiency and reduce emissions while maintaining the vehicle's safety and performance." CHALLENGE X: Crossover to Sustainable Mobility is a three-year competition that will acquaint students with leading-edge automotive propulsion, fuels, materials and emissions-control technologies. Using an approach modeled after GM's Global Vehicle Development Process, teams will gain valuable experience in real-world engineering practices which may lead to challenging careers in the automotive industry. Seventeen North American universities were selected through a competitive process to participate in CHALLENGE X: Michigan Technological University; Mississippi State University; Ohio State University; Pennsylvania State University; Rose-Hulman Institute of Technology; San Diego State University; Texas Tech University; University of Akron; University of California, Davis; University of Michigan, Ann Arbor and Dearborn; University of Tennessee; University of Texas at Austin; University of Tulsa; University of Waterloo (Canada); University of Wisconsin-Madison; Virginia Tech; and West Virginia University.

## **Efficiency Meets EPA Smog Rules While Saving Money**

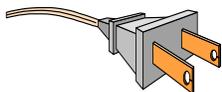
[Environmental News Network web site, May 13] Washington, D.C. - **Energy-efficient manufacturing practices that protect the bottom line can take the sting out of complying with the U.S. Environmental Protection Agency's [EPA] new smog rules, according to the Alliance to Save Energy.** Under new classifications recently issued by EPA and set to become effective June 15, a large number of states and communities will be required to take measures to reduce ground-level ozone (smog). "The good news for the 474 counties in 31 states that failed to meet EPA's tougher air quality standards — and for the industries within their borders — is that energy efficiency can actually boost profitability and productivity while cutting fuel waste and emissions," said Alliance President Kateri Callahan. "Many efficiency measures actually pay for themselves in a matter of months. What begins as emissions compliance can improve competitiveness and help save jobs." Callahan continued, "Industrial activities represent a significant source of ozone. More than one-half of the fossil fuel consumed within this sector is used to generate steam for manufacturing processes. Making steam systems more efficient will reduce ozone-forming emissions while also saving energy and money." The U.S. Department of Energy (DOE)'s Industrial Technologies Program has developed a wealth of efficiency guidance materials to help counties meet air quality compliance deadlines, which loom as early as 2007. Many manufacturing plants are eligible for free DOE-sponsored energy audits that identify potential fuel and cost savings. In addition, plant managers can use DOE's diagnostic software and tip sheets to prioritize and implement cost-effective energy-efficiency improvements, and training is available to improve manufacturing staff's technical skills. The Alliance to Save Energy's Web site provides steam efficiency resources and contact information for industry. State, county, and trade association officials may also review suggestions for promoting business-smart emissions compliance strategies.

## EPA Ordered to Review Valley's Pollution Plan

[*Arizona Republic web site, May 13*] **The Valley's plan for fighting particulate pollution has been sent back to the U.S. Environmental Protection Agency [EPA] for more work.** The 9th Circuit Court of Appeals [on May 10] told the EPA to review its approval of the Valley's plan not to use a special blend of diesel fuel to fight particulates, tiny bits of soot and grime. Three citizens, through the Arizona Center for Law in the Public Interest, sued the EPA in 2002, arguing that it wrongly approved the Valley's pollution-fighting plan because the plan did not contain the toughest measures required by federal law. The court responded by saying the EPA must review whether the Valley's rejection of a diesel fuel used by the California Air Resources Board [CARB] meant the plan lacked the most-stringent air-pollution controls possible. The court also said that a decision to give the Valley until 2006 to meet the clean-air standards for particulates hinged on the agency's review of the CARB diesel issue.

## Wetter World Counters Greenhouse Gases, Says Scientists

[*Environmental News Network web site, May 13*] Sydney - **Australian scientists have found the Earth may be more resilient to global warming than first thought, and they say a warmer world means a wetter planet, encouraging more plants to grow and soak up greenhouse gases.** "The global water cycle has changed in response to greenhouse emissions," almost 100 Australian greenhouse scientists said in an annual statement on their research received on [May 12]. "As the world warms it is, on average, getting wetter," said the scientists, who met recently under the banner of Australia's Cooperative Research Center for Greenhouse Accounting. A wetter and cloudier world would see more plants and more photosynthesis to counter greenhouse gases and also mean less evaporation as less solar radiation reaches the Earth. "Contrary to widespread expectations, potential evaporation from the soil and land-based water bodies like lakes is decreasing in most places," the scientists said. An increase in trees and shrubs in the world's grasslands in recent decades was a major counter to greenhouse gases, they said. Forests, farms, and grasslands across the world absorb significant volumes of greenhouse gases. They have the potential to absorb more, ameliorating climate change. "Properly managed, they could buy time for the world's people to make the major reductions in greenhouse emissions from power generation, industry, and transport that will be required to reduce the damage from climate change."



## Energy/General

### Average U.S. Car Is Tipping Scales at 4,000 Pounds

[*New York Times web site, May 5*] Detroit - **Detroit was recently ranked as the nation's most obese city by Men's Fitness magazine....** The average new car or light-duty truck sold in the 2003 model year tipped the scales at 4,021 pounds, breaking the two-ton barrier for the first time since the mid-1970's, according to a report released by the Environmental Protection Agency [EPA] [on April 28]. The fattening of the nation's automobiles is a principal reason that average fuel economy has stopped improving and the nation's consumption of crude oil has been swelling: all else being equal, moving more weight takes more energy. Add in the additional pollutants and greenhouse gases released by burning more fuel, and it is not surprising that the upsizing trend is condemned by environmental groups. But ranged against them in an increasingly bitter debate are industry lobbyists and conservative groups who argue that girth is good, for crashworthiness and because people want more space and power, though [Honda](#) is a notable dissenter in the industry. At the center of the debate is the Bush Administration's proposed rewriting of national fuel economy regulations. Though work on the plan is still in its early stages, one important aspect of it could lead automakers to make their vehicles even heavier on average. Environmentalists are distressed by the plan, but it has not been embraced by the auto industry, either. In recent months, the National Highway Traffic Safety Administration has been flooded with nearly 50,000 letters and detailed comments about the plan. Many have come from organizations with an interest in the outcome – automakers, lobbyists, environmental and consumer groups – but the majority have been from individuals, some of them angered by increasingly tanklike vehicles and others by the claims of industry lobbying groups that S.U.V.'s [Sport Utility Vehicles] will somehow be regulated out of existence. And there are other motivations. "One of the things that triggers asthma is air pollution, and vehicular emissions are a significant source," said Dr. Ronald Saff, an asthma specialist in Tallahassee, Fla., concerned about rising asthma rates. Dr. Saff, 45, wrote a letter asking the agency "to make S.U.V.'s safer for families and the environment." But Carroll Boyle, a 65-year-old retired educator from Manchester, N.H., wrote that tougher regulations "may force people into vehicles that are smaller, less powerful, and not as safe as our current options." She added, "In New Hampshire we have weather that requires an S.U.V. many days a year." The E.P.A.'s weight statistics show that the average weight of a 2003 car or light-duty truck, like a pickup, sport utility, van or minivan,

was heavier than in any model year since 1976, when the average peaked at 4,079 pounds. Just five years later, after the oil shocks of the 1970's, the average had fallen by more than 20 percent, to 3,202 pounds. The figures take into account the sales volumes of different models....

## **DOE - Initiatives To Bolster Security at Nuclear Facilities**

[U.S. Dept. of Energy web site, May 7] Aiken, S.C. – **Secretary of Energy Spencer Abraham announced a set of sweeping new initiatives [on May 7] to improve security across the Energy Department's nationwide network of laboratories and defense facilities, particularly those housing weapons-grade nuclear material.** Addressing a gathering of top security officers from across the [Department of Energy] DOE complex, Abraham noted that the Energy Department, which develops and maintains the nation's nuclear weapons stockpile, is responsible for protecting critical national defense assets that "simply put, must not be allowed to fall into the wrong hands." The Secretary unveiled initiatives to expand the capabilities of DOE security personnel, including possibly federalizing some security units currently managed by contractors; consolidate sensitive nuclear material into fewer locations; enhance protections of classified computer information; upgrade security systems at key facilities; and make managers more receptive to security concerns. "Since the stakes are so high" Abraham told the security officers at DOE's Savannah River Site, "everything is on the table," including the possibilities of common labor-contract language for security groups across the DOE complex or establishing "a special elite federal force" to protect the most sensitive installations. To maximize the effectiveness of DOE security forces, Abraham said the DOE will consider the creation of a specialized security contingent to guard the department's high-priority nuclear facilities, with capabilities similar to the military's Delta Force or Navy SEAL units. Abraham acknowledged recent reports of security lapses, such as lost keys, at some DOE sites, but he called the incidents rare.... In a move to reduce the number of nuclear facilities that need high-level protection, Abraham proposed consolidating special nuclear material – the type used for weapons and other sensitive applications – into fewer sites. The consolidation effort would remove the most-sensitive nuclear material from Los Alamos National Laboratory's Technical Area 18 and the Sandia Pulse Reactor facility in New Mexico, consolidate material stored at the Y-12 National Security Complex in Tennessee, and assess whether defense-related work at Lawrence Livermore National Laboratory in California could be relocated, allowing removal of special nuclear material from that facility. To improve the protection of sensitive information, Abraham announced a Cyber Security Enhancement Initiative to help "protect the confidentiality, integrity and availability of all our information systems to assure that we can continue to perform our missions even while under cyber attack." The initiative, to be implemented within the next year, would deploy intrusion-detection systems to guard against potential cyber attacks, improve procedures to guard against internet threats and enhance the security of on-line information....

## **OPEC Powerless to Stem Oil Price Surge**

[Reuters, May 12] - **Oil prices burst to new 13-year highs above \$40 a barrel on [May 12] on concern that OPEC [Organization of the Petroleum Exporting Countries] may not pump enough oil to meet rapidly accelerating world oil demand.** U.S. light crude climbed to a peak at \$40.38 a barrel, less than \$1 off the 41.15, all-time high for New York crude futures, reached in October 1990 after Iraq invaded Kuwait.... The price spike has come during the second quarter, when world oil demand is at its lowest seasonal ebb, raising concerns about prices later in the year as demand rises again. OPEC President Purnomo Yusgiantoro of Indonesia said on [May 12] the cartel is already pumping more than two million barrels daily in excess of official supply limits in a bid to cool world oil prices. "We have not discouraged our members from producing more because we want to do everything we can to stabilize prices," Purnomo was quoted as saying in a statement released from OPEC headquarters. The statement will underline concerns in the market about how much actual extra oil OPEC will release should it decide to lift production quotas when ministers meet on June 3 in Beirut. Ministers are considering raising official production limits from 23.5 million bpd [barrels per day] after Saudi Arabia proposed lifting quotas by at least 1.5 million bpd. Prices have rocketed nearly \$8, or 24 percent, since the start of the year as stronger-than-expected energy consumption among industrialized nations bolsters explosive demand growth in China. The International Energy Agency [IEA], adviser on energy to 26 industrialized nations, said its world growth forecast represents the largest absolute increase in global oil demand since 1988. The IEA also said non-OPEC supply is failing to meet growth expectations, despite rising volumes from Russia, raising the requirement on OPEC for extra crude. "The welcome resurgence in economic activity brings to the fore the issue of securing the necessary supplies to sustain the recovery," the report said. Concern that U.S. refiners will not be able to make enough of new gasoline grades for peak summer holiday driving demand has underpinned the price surge....

## **Rising Profits Pump Up Criticism of Oil Refiners**

[*Los Angeles Times web site, May 5*] **Record-high gasoline and diesel prices are driving up profits at U.S. refineries and providing fuel to critics who claim the oil industry is cashing in on sky-high pump prices.** Big first-quarter gains have been reported by companies with refineries in California, where retail prices have climbed much higher than in other parts of the country. Gasoline hit a record statewide average of \$2.157 a gallon April 12, and diesel reached \$2.274 a gallon May 3. "They're making money hand over fist in the refining business," said Jamie Court, president of the Foundation for Taxpayer and Consumer Rights, a Santa Monica group that has accused oil companies of gouging motorists. "These results show that California is the profit center for all of these major refiners." Big profits are nothing new for refiners in California. But analysts are impressed by the sustained high level of so-called refining margins for companies that make and sell gasoline and diesel in the state, where antipollution rules require a special blend of fuel that is often in short supply. A barrel of gasoline sold in California "is worth two barrels everywhere else," said Fadel Gheit, an Oppenheimer & Co. analyst who owns some oil company shares. Pump prices have been rising around the country and could go higher.... The oil industry contends that retail prices are a fair reflection of tight supplies and other market conditions. "We're no different than the auto industry, which raises prices when demand is high, and that increases profits," said John Felmy, chief economist at the American Petroleum Institute and the industry's lead spokesman on gasoline and oil price issues.... A refining margin is the average price at which a refiner sells its product, minus the cost of crude oil, which is a refiner's largest single expense. The tight gasoline market in California in recent years has allowed gasoline producers to pass higher crude costs directly to consumers. In the last two months, refinery margins in California have been running at more than 50 cents for every gallon of gasoline produced, according to the California Energy Commission. That's well above the average West Coast refining margin of 28 cents a gallon over the last four years and almost double today's refining margins on the Gulf Coast. In a state that consumes 46.2 million gallons of gasoline daily, a refining margin of 50 cents a gallon translates into \$23.1 million a day for refiners....

## **U.S. Says More Oil Supply, Refining Capacity Needed**

[*Reuters, May 20*] London - **The United States needs to talk to OPEC [Organization of the Petroleum Exporting Countries] to ensure oil supply meets growing demand, but is also looking at increasing its own refining capacity, U.S. Energy Secretary Spencer Abraham said on [May 20].** "We believe the price of oil is too high as demand is outpacing supply," Abraham told reporters after giving a lecture on energy.... But he said that for its part, the U.S. was looking at boosting its own refining capacity and hoping for a relaxation of tougher gasoline specification laws. Analysts say that low stocks of gasoline in the United States ahead of peak summer demand are driving crude prices higher. "In the short term we are looking at how we can increase refining capability to reduce tightness in the market place," Abraham said. He added the government was hoping the U.S. Environmental Protection Agency would help to ease gasoline market tightness this summer by relaxing rules requiring cleaner burning fuels. Abraham also warned that high oil prices could hurt the economy. "We are deeply concerned about long term (economic) growth and don't think it is in our interest to see things that impede it," he said. He said that in the long term, the U.S. was looking at ways to diversify its fuel sources as well as meeting environmental concerns with new technology. He said the U.S. was leading a drive for hydrogen-powered transport, low or zero-emission coal power plants, a new generation of nuclear plants, and storing carbon dioxide underground to remove it from the atmosphere.

## **White House Says U.S. Won't Tap Oil Reserves**

[*Reuters, May 18*] Washington, D.C. - **The White House ruled out tapping the U.S. strategic petroleum reserves in response to soaring gas prices that may pose a political threat to U.S. President George W. Bush's re-election bid.** Spokesman Scott McClellan said the stockpile was meant to defuse an emergency, and that lawmakers worried about the high costs at the pump should approve Bush's controversial energy plan. "Our position remains the same," he said. "Because the Strategic Petroleum Reserve being there in the event of National emergencies, in the event we would be attacked or there would be severe disruptions in the supply of oil." "The president is concerned, like all Americans, about rising gas prices. It's important that Congress passes a comprehensive energy plan so we don't have to go through this every year," said McClellan. "We will continue to do what we've been doing that is to stay in close contact with producers around the world to urge them not to take action that would harm our economy or hurt consumers here in America," he said.



## Industries & Technologies

### Biodiesel Distribution Expanding in Toronto

[*Calstart web site, May 14*] Toronto, Ont. - **Biodiesel fuels are gaining popularity in Canada, and diesel vehicle owners, as well as bus and trucking fleets in the Greater Toronto Area (GTA) now have a second convenient local source of Bio-Diesel, a renewable vegetable oil-based fuel that can increase diesel engine life while dramatically reducing emissions....** The pump, the first to sell Bio-Diesel in the City of Toronto, will offer a blend called B20, which is 20 percent Bio-Diesel and 80 percent Petroleum Diesel, and Topia Energy Bio-Diesel Additive-Diesel Fuel Conditioner will be available for purchase in containers. When used as an additive, Bio-Diesel acts as a lubricity agent, prolonging the life of diesel fuel pumps and cleaning the fuel system.... "This pump will provide a clean alternative to typical diesel fuel." Thousands of fleet vehicles have driven millions of kilometers using Bio-Diesel in Canada. It is a fuel that can be used in place of petroleum diesel in any diesel engine, generator, pump or heater, with few or no engine modifications.

### Crash Course On Hybrid Cars

[*CBS News web site, May 4*] Philadelphia - **The growing popularity of hybrid vehicles is a step toward cleaner air and less dependence on gasoline.** But for rescuers at accident scenes, they represent a potential new danger: a network of high-voltage circuitry that may require some precise cutting to save a trapped victim. "You don't want to go crushing anything with hydraulic tools," said Samuel Caroluzzi, an assistant chief with the Norristown Fire Department outside Philadelphia. "It's enough to kill you from what they're telling us in training." Hybrids draw power from two sources, typically a gas or diesel engine combined with an electric motor. The battery powering the electric motor carries as much as 500 volts, more than 40 times the strength of a standard battery. That worries those who must cut into cars to rescue people inside. "If you can't shut it down, you don't know where the high voltage is," said David Dalrymple, an emergency medical technician in New Brunswick, N.J. Manufacturers have put in place a laundry list of safety checks that the car's computer must go through for the electrical system to run. They've published guides showing where the electric components are on their models; on the Toyota Prius and other hybrids, the high-power cables are colored bright orange to catch the eye of a rescue worker or a mechanic. But there are concerns over what happens if something goes wrong and the battery, ignition and other points are inaccessible. "It's the 'what-if' that worries me," said David Castiaux, an instructor for Mid-Del Technology Center in Del City, Okla., who teaches rescue workers about hybrids. Chris Peterson, a service training instructor for Toyota, said the Prius' electric system should shut down if anything goes wrong. "There should not be high voltage in those cables, but I'm not going to stand up and say there isn't," he said. First responders are taught to disconnect the battery and turn off the key immediately before cutting into a car, but that's not always possible. "Years ago you could just cut with your extrication tools through a post, but now you have to look before you cut," said Ken Nelsen, chief of the Iselin Fire Department District 11 in Woodbridge Township, N.J. "It's just another thing you need to worry about."... Concerns about hybrids are increasing in large part because of their growing popularity. Sales have risen at an average annual rate of 88.6 percent since 2000 and recent figures show the number of Americans driving them jumped more than 25 percent from 2002 to 2003. The Honda Insight and the Toyota Prius are common now and more are on the way: hybrid versions of the Ford Escape, Honda Accord and Lexus SUV [Sport Utility Vehicle] this year, and a Toyota Highlander in 2005. The Alachua County Fire Rescue in Gainesville, Fla., even has two hybrids of its own. Although its crews haven't had to deal with a hybrid crash, they've been getting versed on what to do when it happens, said Cliff Chapman, assistant chief. They know not to cut into a hybrid's doors — that's where many of the cables are — and to peel off the roof instead. They also now operate under the assumption that a car is energized, wearing rubber gloves and boots....