

FOX VALLEY ELECTRIC AUTO ASSOCIATION NEWSLETTER FOR APRIL, 2002

NEXT MEETING: Friday, APRIL 19 at 7:20 PM in the Triton INDUSTRIAL CAREERS BUILDING, (East Campus), Room 108

DISCUSSION TOPICS: 1. Members' conversion project status. 2. Report on the Rebate Program. 3. Summer Seminar. 4. Wrap up of the Triton Ranger Project.

MEMBERSHIP INFORMATION

Any person interested in electric cars is welcome to join the FVEEA. The cost for a full year's dues is \$ 20 which will entitle members to receive our monthly Newsletter that contains useful information about electric car conversions, construction, news, policies, and events. Membership is not required to attend our meetings. Dues for NEW members joining in May will be \$ 12.

To obtain info about the FVEEA you may contact either Past-President Ken Woods or President Shafer

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PRESSEZ

As you can see there are several club-related subjects to be discussed. At least four conversion projects are now underway and we will discuss items related to these for the benefit of those now working on their conversions. The status of the EPA Rebate program will be presented and discussed. An update on the latest developments in the proposed summer seminar is next. A final report on the Triton Ranger Project will conclude the scheduled items.

MINUTES OF THE MARCH 15TH, 2002 MEETING

The meeting at Triton was called to order by President Shafer at 7:34 PM. Nineteen members and four guests attended. Woodie Bessler of Elmhurst, Peter Hartl of Chicago, and Michael Palton also of Chicago joined the FVEEA. We now have 48 paid and 4 complimentary members.

Minutes of the February meeting were approved and Treasurer Corel's report of \$2863.59 in checking and no change in the savings account was accepted.

Rebate checks have been issued by the Illinois EPA to Triton (\$4000 for the EV Green Machine) and member Al Wagner (\$ 3680 for his Berkeley conversion). Member Steve Grushas has finished his Escort and submitted a rebate application.

There was a discussion of presenting a summer seminar at Triton on electric vehicle conversions. A tentative date of June 1st was offered. There is a \$ 450 rental cost for the 400-seat auditorium at Triton. The program would include: President Shafer's presentation on "Why an electric car now", John Emde's PowerPoint presentation about the conversion process, Ed Myers lecture on electrical components, user experience reports, and a Q&A session.

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MINUTES OF THE MARCH 15TH, 2002 MEETING – Concluded

The event would also include an exhibition of at least seven member's cars, including the EV Green Machine and the Dragster. There will be a \$5 entrance fee at the door. Our website would be used for reservations. Webmaster Doug Mather has this ready to go

Members questioned our ability to fill the 400-seat auditorium. There was discussion about holding the event at a rent-free location such as the IBEW Union training facility in Alsip or at the Science Museum. These matters will be investigated. The subject was tabled until the next meeting.

Attending other events was the next discussion item. Kevin Zak recommends that we take the EV Green Machine, the Dragster and other member cars to local established events. There was support for this idea. Woody Bessler suggested that we could hand out flyers about the seminar these events and reduce our advertising costs. Several members with electric vehicles said other they would go to shows within 10 miles of their homes. Members were asked to report future community events at the next meeting.

Next was the video of the Channel 7 Program, "Someone you should know". Member Doug Mather spent two hours with the TV crew showing his Fiero conversion for a 7-minute on-air presentation.

Bill Shafer showed a 120-volt portable kWh meter he built to determine energy use. The meter was loaned to Member George Gladic to check his Nissan.

Vice President Bon Munroe resigned because there is a family illness that now requires his full-time attention. Bill noted that he was the Project Manager for the FVEAA conversion of the Nissan.

President Shafer noted there were several new members and guests attending. He asked each person to identify where they lived and state their interest in EVs. A few of the comments: Mike Olson mentioned he wants to do a conversion of a 91 Suzuki. Todd Dore has a donor Escort in his garage for conversion. Peter Hartl from Chicago has a converted GEO Metro with a 96-volt system provided by Yellow Top Optima batteries. He enjoys driving it more than his wife's new Saturn. Dale Corel purchased an uncompleted Ford Festiva from the estate of former Member Ken Meyers. Dale expects to finish the conversion soon. Dale noted that what goes around-comes around. He gave Ken sealed lead-acid batteries for the project and now has them back. Ted Burton, a guest from Chicago, mentioned that he would like to power an electric car off his home's solar panel, just as Doug Mather now does.

The meeting was recessed to inspect Triton's Green Machine in the Auto lab. There were many individual discussion groups.

The meeting was adjourned at 10:45PM

Submitted by
Secretary Tim Moore

FROM OTHER EV NEWSLETTERS AND ARTICLES AFFECTING EVS

DEVCO, the publication of the Denver group in their March Newsletter said Bolder Technologies, producers of a thin-film lead-acid batteries, is bankrupt and purchased by Batteries International Ltd. The purchase included 40 patents relating to the technology.

They report the largest offshore wind farm installation in the world will be built in Ireland. Two hundred turbines can supply 10% of Ireland's electrical energy requirements.

They note neighborhood EVs are available for rent for \$ 25/hour to \$ 99/day in Las Vegas where they provide ready access to the casinos.

The City of London will start collecting \$7/day for driving in central London in an effort to reduce central-area exhaust emissions. They hope to reduce auto traffic by 15%.

They note that candidate Bush decried Al Gore's proposal to grant tax credits to purchasers of hybrid vehicles. It is now part of the energy plan and will cost \$3 billion over 11 years.

Ford's TH!NK EV will not be restricted to governmental agencies New York City when it arrives this fall. It will also be offered at *select* dealers around the nation.

The February issue of EV News covered the Electric Transportation Conference (ETIC) in Sacramento. Most vehicles were hybrids, fuel-cell cars, and hydrogen fuel systems. A new EV, the TANGO, was exhibited. It is a narrow-base (36"), 8-foot long 2-person (tandem seating) vehicle. It has a reported 80-mile range with a lead-acid battery system. It is a result of California's Narrow Vehicle Program. Even standing still it appears unstable. Information is available on website www.commutercars.com.

AC propulsion exhibited their AC-150, Gen-2 drive system that includes integrated drive and charging. The package includes an AC induction traction motor and cooling system that weighs 176 pounds. Motor output is 150 Kw.

The issue has a description of the *SEGWAY* Human Transporter. The footprint is 19x25 inches. The gyroscopically stabilized device resembles a wheeled pogo stick. It has a 15-pound NiMH battery giving a single-charge range of 11 miles. Top speed is limited to 12 mph. **The March 25th issue of the Chicago Sun-Times, P-3 (Metro Section)** reports the Illinois Legislature is considering a bill that would allow the vehicle to use public sidewalks. Present statutes forbid motorized vehicles (except for wheelchairs) on sidewalks. One Chicago alderman said the Segway would be a disaster on the lakefront or in congested high-rise apartment areas. **The April 15th issue of Business Week on page 10** reports several states have amended their sidewalk laws as a result of an intensive national lobbying effort by Segway.

The April issue of EV News has an article authored by David Garman, assistant secretary for Energy Efficiency and Renewable Energy in the Energy Department. It lists the goals for the new **FreedomCAR** program. By 2010 fuel cell powertrains are to achieve a 15-year life, deliver 55 kW for 18 seconds and 30 kW continuously, and a system cost of \$12/peak kW.

Article review continued on next page

FROM OTHER EV NEWSLETTERS AND ARTICLES AFFECTING EVS – Continued

The article lists other goals. Hydrogen fuel is to achieve 70% energy efficiency from well-to-pump, equivalent to gasoline now at market price of \$ 1.25/gallon. Hydrogen storage systems are to demonstrate storage capacity of 2000 Wh/kg, an energy density of 1100Wh/liter at a cost of \$5/kWh. There is a proposed 50% reduction in vehicle structure and subsystems weight.

EEVC, the Eastern Group in Valley Forge in their March Newsletter reported on the group's involvement in the "Physics Olympics". It included a propeller-driven model car race. The main problem was directional stability. Many cars failed to negotiate the 12-meter long, 2-meter wide track.

The group voted to become a Chapter of the National EAA.

VEVA, the Vancouver Organization, in their March Newsletter featured a tilt-bed conversion of a 1986 Mazda B2000 pickup truck by one of their members. In the same issue the vehicle is advertised for sale for \$ 8000.

The April 15th issue of Business Week had two other articles of interest. On Page 107 Paul Raeburn has an article about hybrids that provides an interesting look at auto choices. He quotes the following from a study by the American Council for an Energy Efficient Economy:

Today's mileage standard is 26.2 mpg.

Raising it 40.2 mpg will increase vehicle cost by \$1000 and increase gasoline cost by 57 cents per gallon saved, assuming a 12-year vehicle life.

Going to 45.8 mpg raises the price of gasoline saved by 60 cent per gallon.

A plug-in hybrid getting 15% of energy electrically from the grid (52.6 mpg) will cost an extra \$3500 and cost \$1.38 per gallon saved.

If the hybrid gets 40% of its energy from electricity the cost goes to \$ 1.80 per gallon saved.

My economic study of using a converted Mazda RX-7 battery car for short-trip driving shows an energy consumption of 0.5 kWh/per mile and a break-even annual cost compared to using a 28-mpg Honda Civic for the same use – and my Mazda is 70 % nuclear powered from the grid. Doug Mather uses solar energy from a photovoltaic array in back of his house to recharge the batteries in his Fiero for his daily commute. See the FVEAA website www.fveaa.org for details.

On Page 106 B the magazine has an article about the technical and cost hurdles faced by fuel cell vehicles. They note that a hydrogen tank alone will add \$ 5000 to vehicle costs. They state the Japanese have concluded they will sell hybrid vehicles until fuel cell vehicles are more than just hype.

Ford pulls the plug on electric-powered bike. The Chicago Tribune in January noted that the electric bike joins the Falcon and Pinto into retirement. They were introduced at the Detroit Auto Show two years ago and hailed as an environmentally friendly means of transportation. Sales of the \$1000 bikes were disappointing. Prices for the remaining units have dropped to \$ 595 on the Ford website.

ZAP, another domestic bike maker has filed for bankruptcy. It will continue to sell the ZAPPY electric scooter and electric-assist bikes for about \$600 while in reorganization.

FROM OTHER EV NEWSLETTERS AND ARTICLES AFFECTING EVS – Concluded

Electric ambition. Columbus Dispatch 2/2/02 & Chicago Tribune 3/24/02. What state do you think has the largest electric car program for high school students in the country? Surprise! It is *Kansas*. In May over 50 high schools will be competing in Dodge City and later in Topeka in electric vehicles students have built. The typical vehicle will weigh 150-200 pounds. Vehicle cost must be under \$ 2000. Chuck Ellis, an art teacher, observed, “Many of them are rolling sculptures. The value of the program is by students learning to solve technical challenges, the value of cooperation, and the necessity of completing a program on time and under budget. The event promoter, Mark Murphy, says it will be “The soapbox derby of the 21st Century.”

The Triton *Ranger* was on display at Triton’s Spring Open House on April 10th. It was parked outside the Student Center where activities were centered, include the trolley bus stop for transporting visitors to various parts of the campus. I talked to about 60 persons while the vehicle was on display. Most were high school students interested in enrolling in Triton. Most didn’t have a clue of the conversion achievement. It was a worthwhile appearance.

EDITORIAL CONCERNING THE SEGWAY PERSONAL TRANSPORTER

This issue reviews articles about the introduction of the Segway vehicle. In my opinion is it a flawed design - Too big for the sidewalk and too small for roadway use. It cannot mix with pedestrian traffic on the sidewalk, nor can it compete with automobiles on the road. The design maximum speed has been held to 12 mph to, “minimize injury” if a pedestrian is struck. Imagine a pedestrian with no football pads or helmet being hit by the equivalent of a defensive lineman running a full speed. The personal injury lawyers will probably have a field day with the first court case. At the very least the vehicle should be licensed, identified by a plate, and liability insurance should be required.

Before Illinois Lawmakers approve the requested change in sidewalk law I believe the innovative guidance system that steers, moves forward, or stops by rider leaning should be tested. Assemble a group of lawmakers on the sidewalk in front of the State Capitol as pedestrians. Have a Segway move in that traffic. This will test the reaction time of the device. It is quicker to lean backward to stop a Segway or to squeeze a bicycle’s hand brake? At least Segway users are not likely to be distracted by using a cell phone while riding.

Bill Shafer

EDITORIAL CONCERNING THE *FreedomCAR* NEW FEDERAL PROGRAM

More *Rant & Rave*. This time it is about fuel cell cars. The program replaces the Partnership for a New Generation of Vehicles (PNGV). The objective that program was to develop a car that achieved an 80 mpg fuel economy, a goal first proposed by Amory Lovins.

The first mistake of PNGV was to bar participation of foreign auto companies. Guess what? The Japanese were the first to offer hybrid vehicles with up to a 60 mpg fuel economy. PNGV spent over **\$1-billion** to produce a few developmental vehicles that didn't make the goal. The new initiative envisions spending **\$ 3 billion**. Like PNGV this Program also bars foreign participation – except for Daimler-Chrysler.

I question several of the stated goals. The 60% efficient power train goal has a \$ 12/kW peak cost. The cost will include platinum catalyst required to make the reaction work. This is rare and expensive noble metal now selling for \$ 530/oz. **Are world supplies of platinum adequate for the mass-production of this metal for fuel cell cars?**

The target energy efficiency of hydrogen fuel from well to pump is 70%. **Don't neglect the energy required to pump hydrogen to 2000 psi for storage or the energy required to extract the gas from hydride storage. It is significant.**

How is the hydrogen to be obtained? Almost all of the world's hydrogen supply is locked up in sea water. **Breaking the bonding energy of the H₂O molecule is energy intensive. What source will supply the electrolysis energy?** The target cost of energy is set at today's market price of \$1.25/gallon. **Is this with or without gasoline fuel taxes?** Getting hydrogen from fossil fuels is an environmental loser.

Hydrogen storage system target cost is \$5/kWh. **Really?** Lead-acid battery cost is \$ 70/kWh.

There is a goal of a 50% reduction in the weight of vehicle structure and subsystems. **There goes the SUV and here come the plastics.**

The auto companies successfully lobbied Congress to not raise present CAFÉ standards, saying that Congress should not tell auto companies how to build cars. **I agree. Congress should replace all CAFÉ regulations with a gas guzzler tax. A 40-mpg standard for passenger vehicles should be adopted.** If a new vehicle weighing less than 8500 pounds fails to deliver at least a 40-mpg fuel economy there could be a \$1000 federal environmental tax for each mpg above the standard on each car sold. This would let the marketplace take over, raise \$10 billion annually, and create an effective incentive to improve mpg.

While they are at it, Congress should repeal the prohibition that bars individuals from claiming a tax credit on a car they spend at least \$8000 in parts to convert to electric power. (IRS regulation published in the Federal Register on October 14, 1994, page 52107 that ended the credit for individuals but kept it for new-car purchasers.)

The energy consumption of an electric car is about 1/2 kWh per mile (1707 Btu) equivalent to 68 miles/gallon.

Bill Shafer