



EEVC

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GREEN CAR CLUB "SPRING BREAK" A GREAT SUCCESS

By Oliver Perry

On Saturday, April 10th a number of us gathered at The Toyota dealership at the Limerick exit off of 422 for the beginning of a fun road rally to the Boyertown Museum. John Murphy, director and organizer



John Murphy addressing the early morning crowd at the Toyota dealership and explaining how his electric bike works.

of the event, met us in a side parking lot with coffee and doughnuts. Five Prius owners lined up their cars next to The Cinnaminson Electric car and John Murphy's solar assisted electric bike. For over an hour we looked over



Prius cars in front of the Boyertown Museum



Ken Wells addresses the group at the museum



Cinnaminson car with the twin cooling towers of the Limerick Power Station in the background.



At the museum John shows his original prototype one electric bike which was entered into the 1991 American tour de Sol. He has donated it to the museum where it is now on display.

a few years make! The Museum looks great. Wonderful displays and a whole new look.



John Murphy and Guy Davis in front of a display at the Museum.

the cars, swapped stories, rode John's bike, and introduced ourselves to some individuals who were interested in learning more about the EEVC.

John gave all of those participating in the road rally highway directions and a set of questions regarding some of the roadside landmarks. We drove through great country to the Boyertown Museum parking lot where a record number of Toyota Prius cars (four) lined up for a picture. As someone said, you couldn't find that many Prius cars next to each other, not even in a Toyota dealership.

John handed out the prizes and awards for the rally at the lunch served in the Boyertown Museum and Ken Wells gave a brief history of the Museum before we were all turned loose to wander through it. What a difference

UPDATE ON THE RIVER LINE Oliver Perry

In the last issue I introduced our readers to some of the pros and cons of the controversial River Line, a new high tech rail service for passengers between Camden and Trenton New Jersey. The New Jersey Transit System supposedly spent billions to bring light passenger rail to the towns along the Delaware River between Camden and Trenton. See May's issue of our *EEVC Newsletter* for the background to this update.

Sunday, March 14 *Burlington County Times* Headline: "All aboard"

"Inaugural run of River Line goes smoothly" by John Reitmeyer, *BCT* staff writer

"NJ Transit's River Line, the first passenger train to roll through Burlington County in more than 30 years, was officially launched by Gov James E. McGreevey during a morning ceremony in Trenton yesterday. With the hum of diesel engines in the background, McGreevey smashed a bottle of champagne against the shiny white car."

A caption under a front page picture reads

“State Senator Diane Allen [supporter of the Cinnaminson Electric Car project] and Burlington City Mayor Darlene Scocca hold American flags as they look out the window of the River Line during the inaugural run of the train. They boarded the train in Burlington City on its way to Camden.”

“It is light rail that built the towns along this line, and it is light rail that will rebuild the towns along this line,” state Senator Diane Allen, R-7th of Edgewater Park, told the crowd at the downtown station on Broad Street. With the trolley bell clanging its approach, Allen added that despite the “slings and arrows of political naysayers,” the River Line would prove to be the little economic engine that could. We have already seen thousands more jobs along the line. ‘It is real,’ she said.”

Burlington County Times, Monday, March 15 headlines, “River Line starts rolling.”

“Riders pack new system on first day” by Josh Bernstein, *BCT* staff writer.

“The public flocked to NJ Transit's new River Line yesterday for its first opportunity to ride the 3-mile, light-rail service.”

“Beginning with the first train that left Camden before 6 a.m. and continuing throughout the day, the shiny, white River Line cars were jammed with people sitting and standing.”

“Its really nice. I think some people were against this because people are afraid of change. I think it's a great idea” David Janezic, an Edgewater Park resident.

“Just hours after NJ Transit's River Line opened for its first official day of business, the trains were packed with passengers.”

“Some were curious to see what the \$1.1 Billion transit system was like, some wanted to find out if it was a worthwhile commuter option, and some were looking to nothing more than to be among the first rail passengers in Burlington County in more than four decades.”

“NJ Transit said that as of 6 p.m. about 5000 people had paid \$1.10 each to ride the diesel-powered train, well above the 2,850 people who are expected to use the service daily during its first year of operation. The high volume caused the trains to run late, as conductors needed the extra time to make sure passengers got on and off.”

The *Burlington County Times* article showed one picture of a protester holding up a sign at a train stop at Broad and Main in her hometown which read “Taxation without Representation.” Not everyone was thrilled to see the start of the train service. About 25 others also carried protest posters decrying the “Fiscal insanity of the nowhere train.”

Sunday, March 21st, a few days later

Burlington County Times, lower front page, headline, “Businesses on right track. Restaurants and shops along River Line benefit,” by Brian Scheid, *BCT* staff writer.

“As thousands of first-time passengers spilled off NJ Transit River Line trains last week, cash registers in restaurants and shops along the 34 mile light rail line got the heaviest workout they've seen on a Sunday in years, several local business owners said this week.”

“An average of 2880 passengers a day rode the train throughout the work week, slightly more than the 2,850 NJ Transit estimated for a long term average.”

Friday, April 9th *Burlington County Times* Section B Headline: “Trenton woman struck by train on River Line”

Good news, the woman was not seriously harmed but she became the first pedestrian to be struck by a River Line train after she ignored safety gates and other warnings at a track crossing. She was on foot and apparently ignored all warnings and walked around both sets of gates. She has been reported to be in good condition

And so it goes. Let us hope that the River Line prospers.

NEWS UPDATE

Are you ready for the Tour de Sol?

The Northeast Sustainable Energy Association's Tour de Sol: The Great American Green Transportation Festival, the longest-running “green” vehicle event in the United States (dating back 16 years), opens its gates to the public for several days this May in the New York-New Jersey area.

Many of the newer hybrid vehicles will be available for test drives and test rides. Also on display will be environmental, energy, and transportation exhibits and dozens of experi-

mental advanced vehicles built by auto manufacturers, independent designers, and teams of college and high school students.

Major manufacturers at this year's Tour de Sol include General Motors, Honda, Toyota, Ford, and Allison Transmission.

Vehicles will compete for cash prizes trophies. The competition focuses on two types of prizes: "green" prizes and consumer satisfaction prizes. Green prizes recognize vehicles with lower greenhouse gas emissions and higher fuel efficiency (mpg equivalent). Consumer satisfaction prizes are awarded for handling, acceleration, reliability, and range. Additional prizes will be given to the best performing vehicle using bio-diesel fuel and the best performing vehicle using lead-acid batteries.

Also on display will be the Ford Hybrid Escape SUV, which is not yet on the market.

The event opens to the public in Burlington City, NJ on Saturday, May 22 at the city's Riverfront Promenade where it will be part of the annual Burlington Day Festival, which includes entertainment, food, craft and antiques exhibits, and children's activities. The new light rail line that connects Burlington City to Camden and Trenton provides easy transportation to and from the Festival.

On Monday, May 24, Tour de Sol vehicles will be on display in downtown Trenton, in front of the New Jersey State Museum. A final display and awards ceremony is planned for New York City on May 25.

Crushing the EVs—an update

Previous issues of this newsletter have covered GM's campaign to purge the earth of all vestiges of the EV-1, requiring leaseholders to turn them in and then crushing them. Well, not all car companies are so entirely pig-headed, according to a story in *The New York Times* for March 28. Chris Dixon reports that at least one company was persuaded to be a little, shall we say, tolerant of those crazy EV enthusiasts. After one lessee of a Ford Ranger electric pickup offered Ford \$7000 to keep the vehicle (in accordance with the provisions of the contract he had signed with Ford) and was told to turn it in anyway, he refused and continued to make the lease payments. He also hired a lawyer who is looking into organizing a class-action

lawsuit against both GM and Ford. After some huffing and puffing (and correspondence from the aforementioned lawyer) Ford decided to accept the payments and leave him alone. Score one for our side.

Not all companies are so intransigent, according to the *Times* piece. Toyota has allowed lessees to buy its remaining RAV4 EVs, and the company will continue to service them.

"Honda, which produced about 300 EV-Plus cars, allowed lessees to keep the cars so long as they do not require new batteries, unavailable parts or expensive service," say the *Times*.

So, just as with hybrids, it's the Japanese firms that are showing Detroit the way.

A better way to electrolyze water?

H2CARSBIZ (Hydrogen and Fuel Cell Cars Business magazine) reports that researchers in India claim to have found a way to electrolyze water at potentials well below the accepted theoretical value.

A story dated March 21 reports that Prof R. P. Viswanath and his research group of the Department of Chemistry, Indian Institute of Technology Madras claim to have found a way to electrolyze water at potentials of around 0.9 V, considerably lower than the accepted value of 1.23 V.

Assuming the 1.23 V value, conventional electrolysis requires about 32.9 kW-hr/kg of hydrogen. When the current density is increased to the levels used in commercial production, the article goes on, the potential increases to 1.75 V and the energy to about 46.8 kW-hr/kg, which gives an efficiency of about 70%.

In contrast, by lowering the required voltage to 0.9 V, Prof Viswanath claims to have achieved an efficiency of 135%.

The experimental cell is split into two sections separated by a chemically treated separator (not Nafion). The cathode is polished platinum and the catholyte an acid solution. Anode materials studied include platinum, titanium, titanium coated with cobalt, nickel and others. An alkaline anolyte is used.

H2CARSBIZ seems a little dubious about this, but we'll watch to see if anything comes of it. If Prof Viswanath is right, the price of hydrogen may take a tumble. In addition, one

wonders if some of his technology could be applied to fuel cells.

A hydrogen-powered Prius?

Another story from H2CARSBIZ, this one dated March 20, reports that ECD Ovonic and its partners have modified a Prius to run on hydrogen. They installed a metallic hydride hydrogen storage system from Texaco Ovonic Hydrogen Systems that gives the car a range of 150 miles after 10 minutes of refueling. Adding another of the 1500 psi storage modules would increase range to 250 miles, while installing a more efficient heat exchanger would shorten refueling time.

A good word for emission credits?

The *Philadelphia Inquirer* seems to have departed from its wonted posture and praised a government initiative that allows companies to buy and sell credits for emissions. Under the plan, companies are granted permission to release set amounts of pollutants. Those that are able to reduce their emissions substantially below these targets accumulate credits, which they can then sell to other companies. The idea is that overall emissions are reduced by the value established by the government, but the exact details of how it's done are left up to the marketplace.

So far the practice applies only to sulfur dioxide, and the *Inquirer* staff writer Tom Avril reported on March 29 that the program is succeeding, and at an overall cost a third of what was predicted.

Still working on a new Brazilian desert

The northern third of Africa is covered with desert, while that of South America is covered by forest, much of it in the Amazon basin. The Amazon watershed is a biological treasure house, a wonderland of biodiversity and home to uncounted numbers of species found nowhere else.

It is a characteristic of both deserts and rainforests that they are self-sustaining. In a rainforest huge quantities of water fall as rain, are put back into the air by the trees, and fall again as rain downwind. In a desert little rain falls, and any that does quickly evaporates and is borne away by the wind. The desert tends to spread, in consequence, and is very resistant to being reduced.

There is evidence that the spread of the Sahara was accelerated by human activity: grazing goats and chopping down trees.

The people of Brazil have been engaged in the largest climate-change experiment in human history for years, chopping down and burning the Amazon rainforest as fast as they can. They cut down and burn the trees, then farm the cleared land. But cut-down rainforests make poor farmland. Thus the slash-and-burn farmers must move after just a few years, destroying still more forest and leaving behind useless land. Illegal logging does further damage. Given enough time, they may create a new desert, with drastic consequences for the entire planet.

That said, there was a report on CNN International on April 7 that 9,170 square miles (23,750 square kilometers) of rainforest was cut down in the 12 months ending in August 2003, about twice the annual rate of the 1990s, and an increase from 2002. . On the other hand, the Brazilian government hailed it as a victory, because the rate of increase in deforestation has decreased a bit, because the figure for 2002 was 40% greater than that of 2001.

More energy blowin' in the wind

The world saw 8133 new megawatts of wind power installed in 2003, according to figures released by the American Wind Energy Association (AWEA) and European Wind Energy Association (EWEA), bringing the world's total wind power generating capacity to 39,294 MW. With an annual growth rate of more than 35% over the last five years, Europe leads the world in wind energy development. The country with the most wind capacity is Germany, followed by the U.S., Spain, India, and Austria. Global cumulative capacity increased by 26% in 2003.

Another report, this one from independent Danish windpower consultancy BTM says that the expected average growth for the next five-years is less than half the average growth of 26.3 percent seen in the five years to 2003. It is also lower than the previous five year 2003-2007 forecast for 11.2 % growth.

This year installation of wind power is expected to decline four percent from last year's installed 8344 megawatts, but looking beyond 2008, BTM said it expected wind

power to grow by 25,000 MW per year, bringing the total industry to 194,000 MW.

How many hybrids?

CALSTART reports that an ABI Research report predicts that Hybrids may account for 10% of mid-size cars by 2006. Toyota and Honda hybrid models alone could account for 10% of the over two million midsize passenger vehicle sales in the U.S. by 2006, according to Just-Auto.com.

A hybrid GEM

CALSTART reports that a fuel cell/battery hybrid system is powering a neighborhood electric vehicle developed for Mohegan Sun resort. The fuel cell car is a converted GEM with an Anuvu Power-X 3 kW PEM fuel cell powering the motor. Acceleration and braking are augmented by a hybrid battery pack. The car will be used at Mohegan Sun as a passenger and lightweight transportation vehicle, typically traveling at 12-25 mph.

COMING EVENTS

National Hydrogen Association's 15th Annual U.S. Hydrogen Conference and Expo—Hydrogen: A Clean Energy Choice

April 26-30, Los Angeles. Contact National Hydrogen Association, 202-223-5547

Fuel Cells 2004

May 2-4, Stamford, CT. Contact Sharon Faust, 203-853-4266, ext. 304

10th National Clean Cities Conference and Expo Celebrating 2004 Future Car Congress

May 2-5, Fort Lauderdale, FL. Contact Clean Cities Program, 800-CCITIES

June 27-30, 2004, Washington, DC. Call SAE at 724-772-4006.

Tour de Sol 2004: The Great American Green Transportation Festival

May 21-25, Westchester County, NY to Washington, DC. Contact NESEA at 413-774-6051, www.nesea.org

3rd EVer EAA Chapters Conference

June 4-6, Vancouver, BC in conjunction with VEVA's 8th Annual "REV!2004" ("Ride Electric Vehicles!2004"). Call EV Chapter Relations East, 520-432-3227

Power of DC Electric Drag Racing

June 19, Mason-Dixon Dragway, Hagerstown, MD, organized by the Electric Vehicle Association of Washington DC and sanctioned by the National Electric Drag Racing Association. For information, go to www.powerofdc.com.

2004 Future Car Congress

June 27-30, Washington, DC. Contact SAE Meetings, 202-328-2000, meetings@sae.org, www.futurecarcongress.org

FedFleet 2004: The 4th National Federal Fleet Manager Workshop and Information Fair

July 20-22, New York. Call 800-315-4333

World Renewable Energy Conference VIII

Aug 28-Sep 3 Denver, CO. Call Robert Noun, NREL, 303-275-3062.

Electric Transportation Industry Conference 2004

Sept 21-25, Kissimmee, FL. Call Kara Elsdon, 202-408-0774

Alternative & Advanced Energy Technologies: Manufacturing Challenges & Opportunities

October 12-13, Dearborn, MI. Contact Irene Spanos, SME Communications, 313-425-3155, communications@sme.org.

EVS-21: The 21st Worldwide Battery, Hybrid and Fuel Cell Electric Vehicle Symposium & Exhibition

April 2-6, 2005, Monte Carlo, Monaco. Contact the EVS-21 Monaco Organization, +377 97 77 54 21/+377 97 77 54 22.

MEETING SCHEDULE

Meetings are held in Room 35, Plymouth-Whitmarsh High School, 201 East Germantown Pike in Plymouth Meeting, PA, and begin at 7:00 p.m.

May 12

June 9

July 14

August 11