

EEVC NEWSLETTER

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Now affiliated with EAA

SPREADING THE WORD Jenny Isaacs

“What’s the matter, Ollie, don’t you like me any more?” I asked in my email, teasingly rebuking him for having left me off the list of EEVC members in attendance at and displaying at the Alternative Energy Festival in last month’s article. I really was only teasing — my husband and I joined in

2006, when we bought long-time members Anne and Tom Moore’s converted 1991 Dodge Colt EV, but while we’ve renewed our memberships annually we have yet to make it to a meeting! Ollie was very abashed at the unintentional omission and asked me to write a piece for the newsletter detailing some of what I’ve done to promote EVs over the last couple of years.

We initially got interested in owning an EV as part of a household quest to reduce our



The author (holding champagne bottle), and participants in the 2007 EV Conversion Workshop at North Montco Technical Career Center.

carbon footprint.

Our daily commute is 30 miles round trip, well within the range of contemporary battery technology. We began to talk about converting my 1985 Vanagon, but there were a few hurdles to overcome, like the fact that we don’t have any automotive skills or

equipment — not even a garage. When I saw an advertisement in *Friends Journal* for an already-converted electric vehicle, we jumped at the chance to buy it.

This EV is a 1991 Dodge Colt that was professionally converted when brand-new down in Florida. It had passed from Anne and Tom to their nephew, and when it came to us had been mothballed for several years and needed some reviving and mechanical work. Matt enjoyed learning about EVs by fixing up



the Colt (besides new batteries and a charger, he even crimped and installed a new cable by the side of the road when one

melted on us during a ride!)

I, meanwhile, learned about the history of EVs and realized that here was an opportunity for activism and education. The movie *Who Killed the Electric Car* had just come out and helped kindle my conviction that we should dedicate our recently-founded enterprise, Bucks County Renewables, as a non-profit promoting electric vehicles — an existing technology that can meet the needs of many commuters, while reducing air pollution and greenhouse gas emissions.

We couldn't bring the Colt to display at the 2006 Pennsylvania Alternative Energy Festival, but I made a short film about it to share at our booth. There I met Mike Ewall of the Energy Justice Network, who came to our table to remind us how important it is to use renewable sources of energy to charge electric vehicles. Mike would later invite me to speak with him at a Student Environmental Action Coalition (SEAC) sponsored event at Ursinus College and help launch my new identity as an electric vehicle advocate.

Meanwhile, Matt and I had seen a video on the internet of a commuter car conversion class offered in California, and the idea to turn our Vanagon conversion into a teaching opportunity was born. I contacted one of the course teachers and invited him to come East to teach a workshop.

Next I needed a place to host, and within a few phone calls I had connected with Bill Kirkpatrick at the North Montco Technical Career Center — an experienced VW mechanic, teacher, and EV enthusiast who was very excited about hosting and co-teaching the class. By February we had the venue confirmed and the Energy Justice Coalition had agreed to support the project as a non-profit sponsor. We also received an endorsement from the EEVC, and Ollie was interviewed by the *Morning Call* in an early article about the conversion workshop.

The two-week workshop was publicized initially to automotive technology teachers and then registration was opened to the general public. In early August, eight students came together to convert the van, which had been stripped of its fossil fuel components by Bill K's automotive technology class. Because we weren't operating from a blueprint the students did all the designing, fabricating and troubleshooting for the conversion — it was an extraordinary collaborative learning experience. The class is chronicled in detail on the web at evanagon.blogspot.com, where you can read how exciting the final days and hours were as we raced to complete the conversion and get the van to roll!

We displayed the newly-converted van at Riverfest in Frenchtown in early September, though shortly afterwards it incurred a motor problem that meant we could not bring it to the 2007 Energy Festival (when the Transportation Tent debuted under the capable administration of EEVC member Phil Jones). We brought the Colt along instead, but this year it was wonderful to have the opportunity to showcase the Vanagon at the Energy Fest. I was busy all three days, talking to student groups on Friday and offering two 3-hour workshops for folks interested in conversions. During the afternoon informational sessions I moderated a panel featuring Alan Arrison, Ken Barbor, Bill Kirkpatrick, Paul Kydd and Oliver Perry offering EV conversion pointers. These folks offered up a wealth of conversion experiences, purposes and opinions; it was so great that I recruited the same group to join Bill and me at the conclusion of Sunday's three-hour workshop (Dr. Kydd was gone, but Don Young came on board to talk about his production Mars Electric vehicle and the Ford Ranger conversion he has just completed.) The combined knowledge of this group is phenomenal. I wish I could have them with me at every venue!

Despite many months of effort we did not receive any grants or funding for the 2007 EV Conversion Workshop, so we paid for the Vanagon conversion ourselves. I am pleased to announce, however, that Bucks County Renewables has received funding from the Pennsylvania DEP to put on a second EV conversion workshop, which will be taught

by Bill Kirkpatrick June 22-26, 2009. (We have shortened the workshop to one week to make it more feasible for students.) So if readers of this newsletter know folks who would love to get hands-on experience with a conversion before they begin one themselves, please pass this information on and have them get in touch with me at info@buckscountyrenewables.com or 610-847-4908.

**PAYING TRIBUTE
TO WIND AND WATER
Oliver Perry**

It is refreshing to be reminded that there are places in the Northeast United States where clean energy exists.



Two wind generator blades in a staging area in the Finger Lake Region of rural New York State.

Last Christmas my wife and I drove from our home in New Jersey to Grande Island, New York to visit my sister and her family who live on the Niagara River. En route, while traveling through the Finger Lakes region of New York State, out in the middle of nowhere, I caught out of the corner of my eye what looked like a field of windmill blades. On our return trip Dottie and I made a cold stop to take a few pictures. In the process I spotted a worker who informed me that this was a staging area for assembling the major parts for huge wind generators. “As



A section of the tubular support stand for a large wind generator



Dottie Perry braving the cold to provide relative size for more than 60 blades stacked in rows.

you drive south,” he advised. “Keep your eyes on the ridges!”



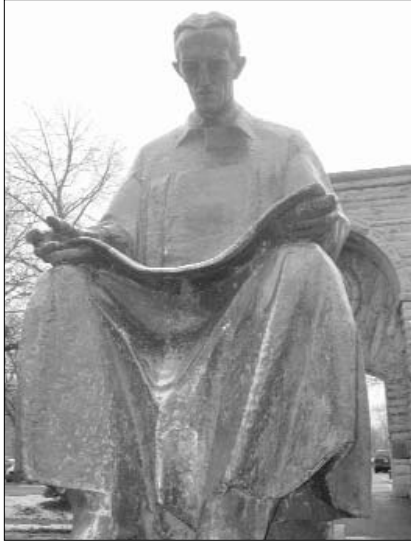
A field of main support sections for large wind generators.



Wind Generators on a ridge over Route 81 in Pennsylvania near the Lehigh Valley.

Previous to this picture taking event, while in Grande Island, we took a trip to Niagara Falls, the site of the first hydropower electric generation station in the world. I snapped a picture of a statue of Nikola Tesla, the pioneering engineer who initiated and supervised this amazing accomplishment.





Statue of Nikola Tesla at the site of the world's first hydro-electric power plant in Niagara Falls, New York. The likeness of Tesla depicts him seated and reviewing his plans while he supervised the construction of the plant.



Engraved at the base of the statue of the seated Tesla. "Tesla's inventions incorporated into Niagara Power Station in 1896 — The beginning of the revolutionary march of electric energy."

The torrent of water that tourists see today is significantly less than what previously thundered over the drop before Tesla's generating station was introduced. The Niagara River has to be shared between those who want fossil free energy and those who want scenic beauty.

UPDATE ON PLANS FOR TDS AND 21ST CAC Oliver Perry



The 21st Century Automotive Challenge is moving to the home of Joe Paterno and the Nittany Lions. Tentative date April 17-19 2009.

Here is an update for all of you who are interested in the future of the TdS and the 21st CAC:

On October 28 Dr. Paul Kydd and I made a trip out to Penn State to visit with Dr. Joel Anstrom of the Penn State Transportation Center, Dr. Daniel Haworth, a professor of mechanical engineering, and Colin Williamson, Dean of the School of Transportation Technology of the neighboring Pennsylvania College of Technology in Williamsport Pa.



Dr. Joel Anstrom (foreground) displays one of the working areas for his students electric and electric hybrid transportation projects. Paul Kydd behind

We were given a tour of the Penn State shops, labs, and work facilities (on the main campus) available to students working on Penn State alternative energy vehicle projects directed by Joel Anstrom. We looked at three well known Penn State cars, including the station wagon that competed in the Tour de Sol back in the 90s. Presently Penn State is competing in the EcoCar and the Next Challenge competition sponsored by the US Department of Energy through the Argonne National Laboratory. Participating in a TdS or 21st CAC activity could possibly enhance their present program.



The electric hybrid station wagon that Penn State ran in the Tour de Sol a number of years ago



Dynamometer for large vehicles at Penn State Test Track Center.

Joel drove us a few miles up the road to the Penn State test track and testing facility which is used to test and repair vehicles, especially large trucks and buses. One of the indoor features was a huge dynamometer (one of the few in the world, we were told) capable of testing large hybrid bus sized vehicles. We actually were driven on the site of an autocross track in a Penn State Suburban. Joel, knowing that we were passengers did not screech and slide around corners, but he gave us an idea of what the course (minus the cones) might look like if we bring the TdS format to Penn State.

In addition we were shown the solar home built by Penn State students (from another department) for a solar competition in Washington DC. The house literally rests a football pass away from a statue of Joe Paterno standing in front of Beaver Stadium, the home of this season's possible national NCAA football championship team.

Dr. Anstrom and Dr. Haworth are both very receptive when it comes to consideration of "Taking on the Tour." They will look into the possibility of hosting the 21st CAC event that we hosted at BCIT for the past few years. If they decide to do so the date will be in late April or early May of 2009. If such a trial run makes a good fit for the Penn State program (and their site) then Joel indicated they could ramp up for something bigger and more sustainable in the future.

Dean Williamson, from the Pennsylvania College of Transportation, prepares students to take jobs with major automobile companies as well as Penn States Transportation program. So he, like Joel, recognizes the value of automotive engineering competition. We were pleased to learn that a young lady,

one of Penn State's graduates, a member of Dr. Anstrom's Ecocar team, was personally hired by GM CEO Richard Wagoner to become a member of the Volt's engineering team. Both Joel's program at Penn State and the Pennsylvania College of Transportation program provide opportunities for students to become qualified for jobs in the auto industry. Part of those qualifications require problem solving abilities and the skills needed to work on teams. Preparing cars and teams for events like EcoCar, the 21st CAC and the TdS help to prepare good applicants for jobs in the automotive world. Paul and I feel that the 21st CAC event should be sponsored and hosted by educational institutions with programs like those we visited.

Dr. Joel Anstrom, as you may or may not know, was a student participant in the Tour de So in the late 90s, leading Penn State's hybrid entry. Now that he has advanced to the head of the department, so to speak, Joel is still enthused and wants to provide students the same opportunities to experience the adventure of the TdS that he had. Joel has been in conversation with David Barclay, from NESEA, regarding NESEA's possible involvement. David Barclay is scheduled to meet with Joel and the director of the sustainable energy program (solar house) later in November to discuss the options for NESEA involvement. Dr. Paul Kydd is anxious to include vehicle to grid interactions in the 21st CAC competition. David Barclay sees a possible connection between our transportation event and the NESEA sustainable building program through charging EVs at solar home installations.

THE GOOD, THE BAD AND THE REALLY DUMB **By California Pete**



The election of 2008 has come and gone, and California has managed to avoid adding too much to its record of the land of the weird and the home of the strange. By this time everyone knows that Proposition 8 putting a ban on same-sex marriage

into the state constitution passed, ending gay marriages; the status of those married before Prop 8 passed is yet to be determined.

Another proposition that passed is to set up an 800-mile statewide high-speed rail system, including a link between San Francisco and Los Angeles. Considering the fact that getting from one to the other now by rail is slower than doing it by car, it should help a lot — that is, unless the inevitable cost overruns and schedule delays don't ruin it.

A couple of local ballot questions in San Francisco deserve mention. One that would have named a local sewage treatment plant after President Bush (and cost \$50,000 to implement just in new signage and printing) was defeated by a solid majority. Another, which would have allowed the city to seize the electric power system from PG&E and put it under the control of the notoriously dysfunctional and politics-ridden Board of Supervisors went down to defeat. To make it more attractive to voters it also would amend the city charter to require that San Francisco get 51 percent of its electricity from renewable energy sources such as wind and solar by 2017, 75 percent by 2030 and 100 percent by 2040, but voters were not convinced.

New thermal solar plant

A new demonstration-scale thermal solar power plant has opened on October 28 in the sun-baked territory around Bakersfield. Built by Ausra, Inc., the Kimberlina plant will produce 5 MW at full output and is the first solar thermal power plant of any type built in California in nearly 20 years.

OPEC and alternate energy

You'd think we'd get tired of it, but the same scenario seems to repeat every couple of decades:

1. The world economy heats up.
2. Demand for petroleum increases.
3. The price of oil rises to uncomfortable levels and looks like it will continue to do so forever.
4. Private and government investment in alternate energy begins to rise.
5. After sufficient money has been put into alternate energy, "something" happens: there's an economic slowdown somewhere or OPEC just opens the taps.

6. The price of oil drops below the cost of production of alternate energy.

7. Alternate energy producers begin going bankrupt, the government cuts off the subsidies, and we're back to oil.

8. Go back to step 1

On the other hand, OPEC seems to be actually hurting at the moment, mostly because the current drop in crude prices was not their doing but rather the result of the worldwide economic difficulties, so we'll have to wait and see. But who ever thought we'd be grateful to see gasoline get below \$3.00 a gallon?

Ride in my beautiful balloon?

The Fifth Dimension and 1937 newsreels from Lakehurst, NJ notwithstanding, it is now possible to ride in an actual Zeppelin. An October 28 article in the *San Francisco Chronicle* reports that a new company named Airship Ventures is offering flights on a real 246-foot Zeppelin (unlike a blimp, a Zeppelin has a rigid internal framework). Flights are available from Moffet Field, Oakland and the Charles M. Schulz Sonoma County Airport in Wine Country. They're pretty much a luxury item: One-hour tours go for \$495 and two-hour for up to \$975.

BMW ANNOUNCES ELECTRIC MINI



On October 18 the BMW Group announced that it would deploy a fleet of some 500 EVs for private use in daily traffic. The MINI E will be powered by a 150 kW (204 hp) electric motor fed by a lithium-ion battery, with front wheel drive and a single-stage helical gearbox. Announced range is more than 240 km, or 150 miles. Top speed is electronically limited to 152 km/h (95 mph).

The car will initially be made available to select private and corporate customers as part of a pilot project in California, New York and New Jersey. The possibility of offering the MINI E in Europe as well is currently being considered. The car will give its world premiere at the Los Angeles Auto Show on November 19 and 20.

NEWS UPDATE

EV Limos on line

A new service has set up to provide limousine service using luxury HEVs. Called ElectricCar.com, it claims to have the largest global online network of chauffeur-driven hybrid vehicles. The service, provided by LimoRes.net, launches with more than 200 global affiliates, and says it provides transportation between most major cities and their respective airports in the U.S.S and a number of countries.

VeraSun Energy Files Chapter 11

A November 3 story by Dirk Lammers, AP energy writer, reports that VeraSun Energy Corp., the nation's second largest ethanol producer, is seeking Chapter 11 bankruptcy protection. IT seems that the rapidly increasing price of corn and the difficulties in the capital markets "left the company short on cash." By November 3 the company had secured commitments for up to \$215 in debtor-in-possession financing and gained access to \$40 million in interim financing, so it may yet survive.

Tesla delays its sedan

Last month we reported that Tesla Motors had selected San Jose as the location of the plant to built its upcoming Model S sedan, with opening scheduled for 2010. Then on October 16 AP reported that the company had announced that it would scale back development of the Model S sedan "until its Department of Energy loan guarantee becomes effective, citing the tough economic environment."

The story says that the start of production has been pushed back about six months to mid-2011, and the company announced on

November 3 that it had received a \$40 million financing commitment, but with the way things have gone in the economy in general and the auto industry in particular since then, who knows?

Electrovaya, Tata Motors to build EVs

On October 14 Mississauga, Ont-based Electrovaya announced that it had entered into a partnering with Tata Motors and Miljø Grenland/Innovasjon to manufacture batteries and electric cars in Norway, beginning 2009. In addition to manufacturing lithium ion SuperPolymer[®] batteries and developing related technologies, Miljø will produce EVs based on Tata Motors' products. The first will be the Indica EV, promised to be "a practical option for the consumer: capable of carrying 4 people, adequate luggage space, with a predicted range of up to 200 km and acceleration of 0-60 kph in under 10 seconds."

UQM powers RUF sports EV

On October 20 UQM Technologies (Fredrick, CO) announced that RUF Automobile GmbH's recently introduced eRUF all-electric sports car is being powered by a UQM PowerPhase 150 electric propulsion system. The eRUF Model A accelerates from zero to 100 kph in under seven seconds and has a top speed of 225 kph. Estimated range per charge is 250 TO 320 km, depending on performance level, using Axion plc iron-phosphate, lithium-ion batteries.

The eRUF is the subject of the December *Road & Track* cover story, and the magazine's Patrick Hong was suitably impressed after a test drive.

Smart gets high mileage rating from EPA

On October 28 Daimler announced that the Environmental Protection Agency had put the company's smart fortwo at the top of its current list of the most economical cars without hybrid drive. The car exceeds the US CAFE standards and it has been classified as an ultra-low emission vehicle (ULEV) in California. The model available in the USA with 52 kW/71 hp and the current smart fortwo mhd models with 45 kW/61 hp and 52 kW/71 hp consume 4.3 liters of fuel per hundred kilometers.

U.S. wind capacity up by 1400 MW

On Oct 22 the American Wind Energy Association reported that the U.S. wind energy industry installed 1389 MW of capacity in the third quarter of 2008, bringing to 4204 MW the total of wind power projects completed in what is expected to be another record year. The industry is on track to surpass 2007, when 5249 MW were installed, with a total of about 7500 MW this year.

Thin-film solar for home use

A story by Matt Nauman in the San Jose *Mercury News* for October 29 reported that Foster City-based solar-system installer SolarCity has signed a contract that "will bring thin-film solar panels to residential rooftops for the first time." Under the five-year contract with First Solar (Tempe, AZ) will supply 100 MW of its thin-film solar modules to SolarCity starting in early 2009. The deal will provide panels for up to 25,000 homes.

COMING EVENTS

Growing Beyond Oil: 5th Annual Canadian Renewable Fuels Summit

Dec 1-3, Gatineau-Ottawa, Québec. For information go to www.crfs2008.com.

Electric Drive Transportation Association Conference & Exposition

December 2-4, Washington, DC. Go to <http://edta.orchidsuites.net/sites/conf2008>

Next Generation Electric Vehicles

Innovative electric powertrain technology for HEV and pure EV – Advanced battery solutions – New business models for the charging infrastructure

Dec. 10-12, Wiesbaden, Germany. For info go to www.iqpc.com/ShowEvent.aspx?id=134260&details=134276

Target 2030: Solutions to Secure California Transportation Energy and Climate Future

Jan. 14-15, Sacramento, CA. For info go to www.calstart.org/programs/2030_index.php

2009 Motor, Drive & Automation Systems Conference

March 3-4, Orlando, FL. For info go to www.e-driveonline.com/Conf-09/motors_conf09_index.php

Clean Heavy Duty Vehicle Conference

March 16-18, Long Beach, CA. For information go to www.calstart.org/programs/chdvc

2009 SAE World Congress

April 20-23, 2009, Detroit. For information go to www.sae.org/congress.

Challenge Bibendum 2009

April 26-29, Rio De Janeiro. For information go to www.challengebibendum.com.

MEETING SCHEDULE

Meetings are held in Room 49, Plymouth-Whitmarsh High School, 201 East Germantown Pike in Plymouth Meeting, PA, and begin at 7:00 p.m. As in previous years, there were no July or August meetings.

December 10

January 14

February 11

***** FOR SALE*****

Electric 1981 Bradley kit car
Original owner Walter Dunsmore
Features 19 hp General Electric Motor
Built in Baltimore, Maryland
Modern Curtis 400 ampere controller
New batteries, 96 volt, 8 each-12 volts marine
Always garage kept
White exterior paint shows some age
New tires
All new brakes
Pop up headlights
Drive 75+ mph highway speed
Tire pressure 40 psi
Gull wing doors
Good interior-needs floor carpet
Has AM-FM radio with cassette player
4 speed manual transmission
Charger on board
Historic Maryland tags
Only lap belts
No emissions test

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