

EEVC NEWSLETTER

Published by the Eastern Electric Vehicle Club

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Now affiliated with EAA

ELECTRIC MINI ATTRACTS DIRECTOR OF "WHO KILLED THE ELECTRIC CAR" Ken Barbour

I found out about the MINI E field trial, as it would come to be known, in November of 08. I applied online with many other EV enthusiasts in December. The application process took about an hour. At one point I almost quit. My screen went blank and said all my info had been lost.

A message appeared on the screen that asked me if I would like to quit now and forget about the application or continue on and retype all the info. I said I'd re-enter all the data. I'm glad that I did for I discovered later that it was only a test by BMW MINI to see if I was ok with a car that might have some hiccups along the way.

Weeks and months went by before I



Ken Barbour in his MINI-E

received an e-mail from my sales rep Adam at Princeton MINI. He informed me that I needed to fill out a credit app to further qualify me for the MINI E. I thought that would be the end of my chance to be considered because the monthly rental fee would be \$850 a month,

and I'm no millionaire. To my surprise, I qualified. My next step was to get an insurance quote from their provider (they pay the comp and collision, I only pay liability.) My driving record was fine, and it actually looked like I was really had a chance of getting the car. But then more silence.

The next thing I found out was that I had been scheduled for an inspection with an elec-

trician. The electrician came out to verify that I had at least a 240v- 40 amp service in my garage. I had the required juice, but I needed to upgrade my panel since I had no spots left for the breaker needed to operate the charger. I upgraded my panel myself to save some money and notified BMW MINI. By now it was June and the cars had been predicted to be ready for delivery by that time. The electrician notified me he would pull the permits for the wall box and would be out to install it without the charge cable because there was a delay getting them. I got the call from Adam, the BMW representative, that my car was in and I could pick it up on June 18th.

Quite a few people volunteered to go with me to pick up the car. When we arrived at the BMW center, I had to sign a bunch of paperwork relating to the MINI E's limitations. The main constriction, which was made clear up front, was that I absolutely had to give the car back to BMW at the end of the one year lease.

After securing insurance and paying the first months lease payment, I headed to the service department to check out my new electric car. Adam explained everything to me about the Mini that was different from traditional ICE propulsion vehicles. I like to think I added to his understanding about electric cars too, since I converted my Geo-Metro.

After snapping some photos of the vehicle at the BMW dealership I was off. It's a shame it was raining or I would have probably driven faster than the 75 mph I did on the way home. The car was remarkably quick and very smooth. The regen braking, although different, felt very natural. I tried out the AC and the heat on the way home. The radio also worked great. The one thing I couldn't wait to check out was whether or not the brake light came on when the regen braking occurred. Regen kicks in the minute you let up on the accelerator, before your foot even touches the brake pedal, but did the brake lights come on when that happened?

I called my friend Brian on his cell phone. Brian was following me home with my other car. I asked him to report to me what the brake lights were doing as I played with the accelerator only. Sure enough the lights do come on as soon as you let off the accelerator pedal. Brian also advised me that I should slow down a little. Up to that point I didn't realize I was

zipping along at 75 mph in the rain.

After reaching home with no problems I then proceeded to my work. I popped the hood at the motorcycle dealership (where I used to work before it closed a few months ago), anxious to show everyone my new rental car. I also popped open the gas flap. A few pics were taken and then I was off to my parents' house. My mom and dad both went for a ride and couldn't believe how fast the car was. I also showed them the neat electrical set up under the hood. But the Mini didn't sit still for long in their driveway. I couldn't wait to get back to my house to take my wife for a ride. It was now late, but there was still enough charge left to take her for a few laps around the block. She also was impressed. I did 115 miles that first day. I drove from Princeton to Deptford to Woodbury to Franklinville back to Deptford. And people say electric cars have limited range. I don't believe so.

Thus far I have had the MINI E for a little less than 4 months and it has 9 thousand miles on it. Its been to many events like the Power of DC, the Kempton Alternative Energy Fest, Energy and Sustainability 2009 at the University of Delaware***, Jenny Isaac's EV conversion workshop, the Bucks County Renewables EV Workshop and three EEVC meetings. If you see me in the MINI E, don't hesitate to ask for a ride. But don't blink, you might miss me. The car is really quick. And, yes, I will pick you up even though I am used to attracting the rich, famous, and beautiful.

There are 500 MINI Es worldwide. All the Minis are produced on an assembly line in England. The 500 left the assembly line as gliders and were shipped to germany's BMW factory. There BMW technicians with guidance from AC propulsion converted the cars. It took from Feb to Nov of 2008. Fifty cars remained in Germany for a field trial there and the remaining were shipped to the US. California got 250 and the New York/New Jersey area got 200. A lot of cars ended up going to local police, fire and municipal organizations. So there aren't exactly 450 public drivers like me.

[Editor's note]*** Ken Barbour happened to be in a meeting at the University of Delaware that Chris Payne, the director of "Who Killed the Electric Car" also attended.

Ken asked Chris if he would like to take a ride in the electric Mini Cooper. Having not yet had the opportunity to ride in an electric Mini, Chris was delighted to take his first ride in Ken's. Ken even let him drive it.

Article edited by Oliver Perry

THE WORLD'S BADDEST HYBRID? Oliver Perry



The above headline appeared at the top of page D8 in the October 8, 2009 issue of the *Wall Street Journal*. I added the question mark. According to many history buffs the racing enthusiasts were responsible for advancing automotive technology and placing cars in every garage throughout most of the twentieth Century. It can be argued that Henry Ford's automotive career took off primarily because of the name he made for himself at the track.

In the United States it has been said that the sale of cars is related to high performance trademarks established in the racing and drag strip worlds. Leading salesmen still believe that horsepower today is what produces the most income for them when it comes to car sales, even in an automotive economy that has stalled and possibly changed direction. So technology that can boost horsepower and at the same time reduce fuel consumption in a race car has real possibilities of eventually making it to the showroom floors.

According to the *WSJ* article, Hybrid-electric technology is making inroads in Formula One racing, the world's most prominent, spend-money-at-all-costs racing circuit. This year as many as six Formula One teams started using something called the Kinetic Energy Recovery System (KERS) that recycles energy

created by the car's brakes and holds it in reserve. A push of the button on the dash releases this electric energy and provides a momentary burst of power.

Steve Pruitt Fields a Team in the American Le Mans Series With a Hybrid

Steve Pruitt, a commercial real estate developer in Utah, has produced a race car called the GZ09-SH for the American Le Mans Series. The car incorporates features similar to what runs a Toyota Prius. The vehicle accelerates from 0-60 mph in three seconds and generates 525 foot-pounds of torque. Its battery, which holds a regenerative charge, weighs 70 pounds. (The article did not specify what type of battery it was but I assume it was either lithium-ion or nickel metal hydride.) The total package weighs the same as the normal gasoline only racer in the Le Mans Prototype I class, the fastest and most advanced class in the domestic racing circuit. Pruitt estimates that his car is 10 % more fuel efficient than its competitors.

Advantages of a Hybrid in Racing

The slightly greater torque with the added electric motor allows the race car to accelerate out of turns faster than competitors without the system, resulting in slightly better times over the many miles of racing. But the real incentive for the hybrid system comes into play when pit stops are considered. Pit stops are a vital strategic part of a 12 hour race which could require as many as sixteen. The fact that the hybrid technology tweaks out enough added gas mileage to enable the car to skip one or more of those pit stops adds from 14 seconds to a minute to a race, a staggering amount of time in racing.

The Hybrid Advantage Does Not Come Cheap

Some racing organizations have banned these systems in order to lower costs for the teams. The article stated that the research and development costs can go as high as 40 million dollars per car. A spokesman for the Indy Racing League said that hybrid technology is under consideration in their league. However, NASCAR isn't making any plans for incorporating hybrid technology into its immediate future. Robin Pemberton, NASCAR's vice

president of competition, says that the cost of running one hybrid unit is the same as “running two of our teams for a full season.” “If hybrids get cheaper and cut down on pit stops,” he says, “I could see us evaluating them, but that is several years away.”

Several Wall Street Journal “Energy” Updates

“Chevron Engineers Squeeze New Oil From Old Wells”

Page BI MarketPlace, *WSJ* Oct 9, 2009 “Steam bath for aging field adds millions of barrels of crude oil to one of the world’s oldest and prolific oil fields, the Kern River field in Bakersfield, California.”

“Chevron is using the Kern River field as a real world laboratory, testing enhanced recovery techniques and bringing in engineers from around the world to learn them. Chevron is using high temperature sensors to monitor its production and filtering its waste water through walnut shells so it can be reused.” Steam is being injected into the porous rock which heats and thins out the gooey liquid petroleum enabling it to flow more easily to the surface. Because of 660 drilled observation wells equipped with sensors engineers can better track the temperatures and see where the heat is most needed, thus reducing the amount of steam used. Using less steam enables Chevron to better compete with the normal price for producing a barrel of crude.

According to the article Exxon Mobil and Royal Dutch Shell are showing interest in such projects too. The only way the industry will be able to meet the demand for oil will be to go after the harder to reach hydrocarbon. The Kern River field has produced more than 2 billion barrels in its 110 year history and Chevron feels that it still holds 1.5 billion more barrels. Today, the Kern River field is a sea of pipelines, storage tanks, and about 9000 slowly bobbing pump jacks that still pull 79,000 barrels a day out of the rock below. At its peak the field produced about 140,000 barrels per day. Chevron hopes to eventually pull out 80% of all of the available crude in the rock structure compared to a former average of about 30%, typical of many fields around the world. Mathematically speaking, production of oil was falling at about 7% per year from 1998 to

2005. Now with the steam technique the production fall rate is only 2% which means an increase in available oil this season over the past.

“Christmas in October for Ethanol”

Page C8 *WSJ* October 12, 09 “Rise in Cost of Energy Up Margin; Support for Depressed Corn Prices” “Renewed life in the ethanol industry is drawing the attention of the Chicago Board of Trade traders and analysts, giving the corn market a boost. Ethanol producers, which spent much of the past couple of years operating in the red, lately have been enjoying wide profit margins and as a result have seeking more corn and ramping up for production. Last week, with energy prices advancing, ethanol processing margins jumped to a dollar a bushel, almost doubling what they were the previous week. The improved ethanol outlook is due to expectations of a large corn crop that has lowered corn prices relative to crude oil and ethanol. The profits for ethanol blenders was 31 cents per gallon which will encourage more blending in the weeks ahead.”

Unbridled Energy: Predicting Volatile Wind, Sun

Page A14 *WSJ* October 2, 09 “While the ebbs and flows of power consumption are quite predictable, wind-power production is erratic.” “The thousands of wind turbines installed across the US collectively produced only 1.3% of the actual U.S. electricity in 2008.” The problem with the wind generators is that the power plants that they help to support were never designed to quickly ramp back into operation the moment the wind dies or quickly shut down the minute the wind speed picks up. Providers of electrical power which incorporate wind power in their grid now have to become accurate wind forecasters in order to regulate power distribution and they need equipment that can quickly respond. We do not want to have a weather dependent supply of energy, therefore every wind farm and solar installation has to be backed up by a nearly equivalent conventional fuel powered power plant to keep the grid running when the wind dies or the sun gets blocked. This is not cost effective. (Last month Pete Cleaveland mentioned on page 3 of the Newsletter that California received a grant to experiment with

storing the electricity made during peak wind or sun in compressed air stored underground.)

REPAIRING A HONDA INSIGHT BATTERY PACK

Ian George

In 2008 I got IMA error codes for my 2000 model year Honda Insight with about 120,000 miles on it at the time. The Gen-I Honda Insight has a 10 year 150,000 Mile IMA battery warranty from Honda. The Honda dealer told me the battery was bad and would need replaced , but was covered under the warranty. I told them thanks but no thanks — I would take my car back as it was, error code and all.

The error codes pulled from the OBD-II port for free by a local Auto-Zone were P1447 & P1449, which are over heated battery and a deteriorated battery.

I wanted to test the battery pack itself, for myself. I tested my Insight to verify that all of the 12 V systems were functioning properly and that the alternator function of the DC-DC module was still functional. It all seemed to check out as a conventional gasoline-only car, so for the next week or so I drove it as just a conventional gasoline car. The error IMA error code had disabled the hybrid part of the car, so not auto-stop at traffic lights, no regenerative braking, and no Assist, but otherwise the car was fine as a conventional gasoline car.

After that period removal of the 120 cell NiMH battery was clearly outlined in the shop service manual I already had. That is were Honda stops: Honda has a service bulletin # 00-70 out to Honda technicians and dealerships that warns they might be back charged by Honda \$3000 if the battery module is opened.

The Honda procedure is to replace the whole 120 cell battery module; do not open the module case; do not test any of the 120 cells or connections in the battery module. I suspect they figured it was more cost-effective to replace the whole unit than it was to diagnose or service what the problem might actually be with the 144 V battery module.

After I had the battery out I carefully went about opening up the battery box that contains the 120 NiMH cells... This is a task only for properly trained personnel as it does require

bypassing safety devices Honda had installed in the battery module. It is a high voltage source and can easily kill a person, start fires and other things if a mistake is made.

Inside the 120 cells are welded into smaller units. Each sub-pack was six cells welded end to end; 20 of these sub-packs make up the 120 cells of the battery module.

Once these are isolated from each other each of the 20 sub-packs is effectively a 7.2 V six-cell NiMH battery.

There are off the shelf battery analyzers that can be bought to charge and discharge these smaller battery packs in controlled ways and log the data from this process. Doing this for all 20 of the six-cell subpacks showed that some were initially at a lower SoC% than others. The largest difference was about 2 Ah between the lowest SoC sub-pack and the highest SoC Sub-Pack. Over the eight years and about 120,000 miles some of the 120 cells in had gotten out of balance with each other; while sme subpacks still had over 85% of the original new battery capacity.

I recharged all 20 sub-packs to 100% SoC, reassembled the battery module, re-installed the battery module in the car and cleared the old IMA error code. I have been driving for over a year now without a return of the IMA error codes.

Anyone who deals with battery packs with a large number of cells knows that maintaining a proper balance among the cells is very important to overall battery pack performance and service life.

The error code the Honda Gen-I Insight system was giving was actually just signaling that it did not like the current condition of the battery module ; it turned out the battery module itself was still very serviceable, and after some minor maintenance it is working fine again.

There are now people a non-technical person can contact to service their HEV battery pack for them. In the U.S.: www.hybrid-battery-repair.com; in the U.K., www.solarvan.co.uk/index_files/Page487.htm

It is not only greener, but also cheaper to service what is actually broken than to replace it. It is also a good idea if you are able to recondition the NiMH batteries instead of just balancing them, and rematching them if you can is also a a good idea. If you don't want to do it, again, there are businesses popping up to

service these high voltage battery packs when they get out of the OEM warranty.

The simple thing for me was that it makes perfect sense that in a 120 cell battery pack that it is actually very unlikely for all 120 cells to all go bad at the same time; the worst case is when they are not just out of balance but one of your 120 cells is bad, but even that is very wasteful to not reuse those parts/cells that are still serviceable.

EEVC DISPLAYS VEHICLES IN KEMPTON, PA Oliver Perry



The weekend of September 19th Ollie Perry, Alan Arrison, Ken Barbour, Dan Monroe, Jennie Isaacs, Don Auken, Brandon Hollinger, Paul Kydd and the Don Young (father and son) team, participated in the electric vehicle display and workshop portion of the annual Pennsylvania Sustainable Energy Festival sponsored by the Mid Atlantic Renewable Energy Association (MAREA) The weather was perfect — bright sunny days and cool



nights. As always a great crowd and lots of interested folk attended this annual event. (left: Brandon Hollinger checks the plug to his SAAB conversion.

Electrac

The owner of the electric tractor (pictured) and which was on display informed me that he had recently purchased rights to all of the parts and drawings of the famous Electrac lawn tractor, which were originally produced by General Electric. Hopefully I will be able



to update you on his business in an upcoming issue of this newsletter.

Plug Prius

Perhaps one of the more exciting discoveries Mike Manning and I made was the relatively inexpensive

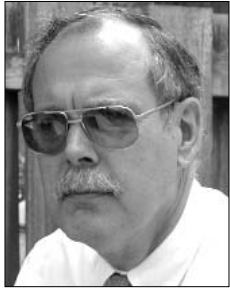


technical innovation of a young inventor, from Wayne State University, Detroit, Michigan, of a plug hybrid addition for the Prius.His system uses a DC to DC converter to boost the voltage of his added battery pack to the voltage of the original Prius battery pack. This voltage keeps the original pack's voltage artificially high when the vehicle is operating and, according to the inventor, the Prius attempts to use this energy up. Most plug hybrid conversions add a battery pack which allows the vehicle to operate on battery power alone. In theory a user could get by with never using gasoline if they kept the car within the limited range of the added battery pack. However, in the conversion we investigated, it was not possible to operate the vehicle in electric mode only at high speeds for any length of time. The added battery simply increases gas mileage.

Plug-in Hybrid cost without batteries is \$995. The 2 kWh module for 10 miles is \$1995, the 4 kWh module for 20 miles is \$3495. The voltage of the module is 48 volts and the DC to DC converter jumps it up to the voltage of the conventional existing battery. Manufacturer: Engineer Environment Tech Co.Ltd, Shanghai, China, www.Engineer.us US distributor: Automation Tech Inc, 1562 Hamlet Drive, Troy MI 48084, USA, toll free 877 886 8897.

NETWORK OF CHARGING STATIONS COMING TO CALIFORNIA

By California Pete



Californians love their cars — except, perhaps, in San Francisco, where they do everything they can to discourage them; the *San Francisco Chronicle* reports that “San Francisco Board of Supervisors President David Chiu found a way to please two powerful political forces in the city — tenant rights activists and anti-car advocates — with legislation that would limit the construction of garages in existing rental properties.”

But in the rest of the state they do like cars, and they like to travel in them, which has been a problem for owners of the Tesla Roadster, which can't make the trip from SF to LA on one charge. But not to worry: a story by Jim Motavalli in *The New York Times* on line on September 22 reports that an EV charging corridor has been established for the use of Tesla drivers (and only Tesla drivers). The project, a joint venture of California-based SolarCity, Tesla Motors and the Dutch bank Rabobank, has five installations down scenic Route 101 (The fast route, I-5 through the boring Central Valley, is apparently unworthy of Tesla drivers). “Spaced 70 to 100 miles apart along Highway 101,” says the *Times*, “the ... stations would theoretically allow a Tesla Roadster (with more than 220 miles of range) to drive the 382 miles between San Francisco and Los Angeles with only one charging stop. Plugging in is free to E.V. owners.”

Killing the goose...

The city of Oakland, like many others in California, has been suffering severe budget shortfalls and looking anywhere it can to find revenues. So in July the bright lights on the City Council decided to change the parking rules, increasing meter rates to \$2.00 per hour and extending the hours to 8:00 p.m.

Going into Oakland is already pretty scary (what with the frequent murders and the earlier rash of restaurant armed takeover robberies), and having to pay extra for the privilege has had the expected effect: a 30 percent drop-off in restaurant business.

At last report the changes had been rescinded, but you have to ask the old question: What were they thinking?

No solar here, please

If there's any place in the world that solar power makes sense, it's the Mojave desert, and not long ago BrightSource Energy announced plans to build a 440 MW solar thermal plant at Broadwell dry lake and raised \$160 million to do it. But apparently it's not to be. Senator Diane Feinstein and a group of environmentalists, who want to make the area a national monument, have successfully scuttled the project.

The turn of the seasons

Despite what you may have heard, California does have seasons — they're just not the same as in other places. Fire Season just ended abruptly as an early weather system bearing the remnants of typhoon Melor crossed the coast, ushering in a somewhat early start to the Rainy Season. This will be followed presently by the beginning of Mudslide Season, as the ground gets saturated and the areas burned during Fire Season, lacking vegetation to hold them in place, begin to slide downhill. That's California urban renewal; traditionally once the ground stops moving the developers come in and build new houses (although this might be delayed a bit, until the market recovers).

Earthquake Season lasts all year, and on October 17 we will celebrate the 20th anniversary of the Loma Prieta quake, which destroyed the elevated Cypress section of I-880 in Oakland, severely damaged the Embarcadero Freeway along San Francisco's waterfront and the Bay Bridge, and knocked down buildings all over.

The remains of the Cypress were taken down and the name was expunged, replaced with the Mandela Parkway. The Embarcadero Freeway was also torn down, leading to the renovation of a previously blighted area, and the Bay Bridge seismic retrofit project is moving along; it should be done by 2013 at a cost of \$6.3 billion.

In San Francisco there is still a lot of seismic work to do; many houses have not been reinforced, so when the next big temblor hits there will be plenty of customers for the

newly-retrofitted hospitals — if their planned reinforcements are completed by then.

NEWS UPDATE

Plenty of EVs at the Frankfurt Auto Show

The recent auto show in Frankfurt was an opportunity for any company with aspirations of producing an EV to show something. Here's a brief rundown:

Volkswagen showed its E-UP! electric, listed as a 3+1 seater. Go comes from a 40 kW continuous (60 kW peak) motor that drives the car to 135 kph (84mph) and 0-100 kph time of 11.3 seconds.



Mercedes showed its near-series Concept BlueZERO E-CELL PLUS electric car with a combustion engine range extender, which gives a total range of up to 600 kilometers, with 100 kilometers under electric power.

Mercedes also announced its first series-produced fuel cell car: the B-Class F-CELL, which claims better performance than a 2.0-litre petrol car and consumes the equivalent of 3.3 liters of diesel per 100 kilometers in the NEDC (New European Drive Cycle). Production will commence in late 2009 with a small lot. The first roughly 200 vehicles will be delivered to customers in Europe and the USA early next year.



The Indian firm REVA Electric Car Company unveiled its NXR (NeXt Reva), a new lithium-ion powered electric, with production scheduled for early 2010. The three-

door, four-seater hatchback has a top speed of 104 kph (65 mph) with a range of 160 km (100 miles) per charge. If using the 90 minute fast charge (normal charging is eight hours), it offers an effective range of 320km a day. A

fast charge for 15 minutes will provide a 40 km (25 mile) range.

Johnson Controls, known mostly for interior components and batteries, displayed a concept car called the re3 to show off its new lithium-ion battery packaging idea, which puts 96 lithium-ion cells between the front seats in the tunnel console. Capacity is more than 7 kWh, and it uses active cooling.

Audi showed off its new electric sports car, the e-tron, which has a motor in each wheel producing a total of 230 kW (313 hp) and does 1-120 kph in 4.1 seconds. A 42.4 kWh Li-ion battery yields a range of 248 km (154 miles).

China could take EV lead

A September 30 story by AP's Joe McDonald reports that assistant energy secretary David Sandalow, speaking after attending a U.S.-Chinese forum on electric vehicles, said that if U.S. companies do not invest heavily in the technology China could take the lead.

Let's see: come up with the car of the future or give the money to the CEO? Tough choice.

New lightweight motor



A new Oxford University spin-out company, Oxford Yasa Motors, has been set up to commercialize lightweight

electric motors developed at the Department of Engineering Science. Over the last 8 months the Oxford team has collaborated with engineering firm Delta Motorsports to configure the motor for a new four-seat coupe, which is scheduled for track tests scheduled at the end of 2009.

Tilting Nissan

An October 8 story by AP write Yuri Kageyama reports that Nissan is working on a concept EV that tilts into curves, much like a motorcycle, but has four wheels. It's called the Land Glider and will be shown at the Tokyo Motor Show.

Smart EV to be built in France

Another AP story dated October 8 reports that Daimler has decided to manufacture the

Smart fortwo electric in Hambach, France. The company plans to distribute the first 1000 to testers in the U.S. and Europe, with full scale production to begin in 2012.

Mitsubishi to make EVs for Peugeot

A September 8 *New York Times* story by Richard S. Chang reports that Mitsubishi will supply Peugeot-Citroen an EV to be called the iOn. Based on the i-MiEV, it will have, says the story, four doors and a range of around 81 miles. Production is expected to begin late next year.

Honda makes self-stabilizing unicycle



Honda has developed a new personal mobility device called the U3-X. It is a compact experimental device that fits comfortably between the rider's legs, to provide free movement in all directions just as in human walking — forward, backward, side-to-side, and diagonally. The company says it will continue research

and development of the device including experiments in a real-world environment to verify its practicality

EV company starts up in Oregon

A company called Arcimoto (www.arcimoto.com) has started up in Eugene, OR. The first planned product is a two-seat three-wheeler called the Pulse, which it plans to start selling in 2010 for “under \$20,000.” Estimated range is 50 to 100 miles and top speed is 55 mph.

Big Texas wind farm up and running

For a state that's been in love with oil for a long time, Texas seems to be getting on the wind bandwagon in a big way. An AP story dated October 2 reports that the Roscoe Wind Complex, the world's largest wind farm, is now “generating its full capacity of 781.5 megawatts.” The installation has 627 turbines from about 350 to 415 feet tall, spaced about 900 feet apart “across 100,000 acres of West Texas farmland.”

COMING EVENTS

The Business of Plugging In

October 19-21, Detroit. For info go to www.pev2009.com or or contact Center for Automotive Research, 734-662-1287, CAR_EVENTS@cargroup.org

Battery Power 2009

October 20-21, Denver, CO. For information go to www.batterypoweronline.com/bppt-conf09/bp09_index.php

NEDRA - Nationals & Kick Gas Festival

Oct 24, San Diego, CA. www.KickGasFestival.com. Call (858) 412-4935 or email MCummins@KickGasFestival.com

Fundamentals of Hybrid Electric Vehicles

Oct 26 - 28, Troy, MI. www.sae.org/servlets/internalpdevent?EVT_NAME=C0511&OBJECT_TYPE=PDEventInfo&PAGE=getPDEventInfo&COMMON_SUCCESS=TRUE

US Hybrid Truck Users Forum National Conference

October 27-29, Atlanta, GA, www.calstart.org/Projects/Hybrid-Truck-Users-Forum/Articles/Press-Release-HTUF-2009.aspx.

Introduction to Hybrid and Electric Vehicle Battery Systems

Oct 29-30, Troy, MI. www.sae.org/pdevent/C0626.

2nd International Congress Electric Vehicles

Nov 2-4, Berlin. www.electric-vehicles-congress.com.

Lithium Mobile Power 2009

Nov 12-13, Albuquerque, NM. www.knowledgefoundation.com.

2009 Fuel Cell Seminar & Exposition

Nov 16-19, Palm Springs, CA. www.fuelcellseminar.com

SAE 2010 Government/Industry Meeting

Jan 26-29, Washington, DC. For info go to www.sae.org/govind.

2010 SAE Hybrid Vehicle Technologies Symposium

Feb 10-11, San Diego, CA. www.sae.org/events/training/symposia/hybrid.

CALSTART-NTEA Green Truck Summit

March 9-10, St Louis, Mo. http://www.calstart.org/events/calstart-events/09-08-01/CALSTART-NTEA_Green_Truck_Summit_2010.aspx?Events=EventItem.

NHA Hydrogen Conference & Expo

May 3-6, Long Beach, CA. www.hydrogen-

conference.org.

Energy Efficiency Global Forum & Exposition (EE Global)

May 10-12, Washington DC, http://www.calstart.org/events/calstart-events/09-07-29/Energy_Efficiency_Global_Forum_Exposition.aspx?Events=EventItem.

SAE 2010 World Congress

April 13-15, 2010, Detroit, MI. www.sae.org/congress/

10th Challenge Bibendum

May 30- 2 June 2, in Rio de Janeiro. <http://www.challengebibendum.com/challengeBib/AfficheServlet?Rubrique=20070807132926&Langue=EN>

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 will be no July or August meetings.

November 11

December 9

January 13

February 10

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



Lester Electrical 12/96 volt Battery Charger, 208/230 volt input, 96 volt 30 amp output, used by Jet Industries in converted trucks. \$50.00

Contact Edward F. Kreibick, 215-396-8341, ekreibick@verizon.net

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

1994 US Electricar S-10 pickup truck, 3 Phase AC Motor - Not a DC Conversion. This is a factory Electric Vehicle with only 17,275 miles on it. Current range is 30 to 35 miles depending on driving style and conditions.

It charges from 120VAC directly and 240VAC with a buck transformer. The Buck Transformer is included with it.

The truck does have an inductive paddle Magne charger port and includes a standup outdoor 6KVA Magne Charger. I have never gotten this to work but believe I know where the problem is.

There is also more information about the truck at www.evalbum.com/2550.

\$8500 or best offer.

What you get is as follows:

1994 White US Electricar S-10 EV with the following upgrades/modifications:

- 6 added fuses to protect the Dolphin CPU board
- Pulsetech onboard battery de-sulphators
- Smoked Lexan see-through cover on main battery box
- 5000 lb tow bar, tow bar stores behind seat

Also included with the truck is:

- Buck transformer for charging from 240VAC
- Special adapter cord for 208 VAC charging
- Spare Dolphin CPU board
- Standup outdoor 6 KVA Magne Charger
- Two manuals
- Drawings and Wiring Diagrams
- Small spare parts, two Encoders and more
- Whatever else I find that goes with it.

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