

**Fox Valley Electric Auto Association  
PO Box 214  
Wheaton, IL 60187-0214**

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## **August 2010 FVEAA Newsletter**

**The FVEAA is a Not-For-Profit Illinois Corporation and the Chicago Area Chapter of The Electric Auto Association**

### **Next Meeting**

**Friday, August 20th, 2010 - 7:00PM (doors open at 6:30PM) at Packer Engineering, 1976 N Washington St, Naperville, IL 60563**

**Packer Engineering is the on East side of Washington St, just North of the I-88 Tollway (North of Diehl, South of Warrenville Rd). Turn off of Washington onto Bighorn at the Packer Engineering sign, then take the first right into Packer Engineering and then an immediate left. Park in the lot between the buildings. 1976 is the new building up the hill. Enter the building in the middle of the North side.**

### **Agenda**

- Call To Order
- Old Business
- Committee Reports
- New Business
- Opening of Nominations for Officers, nominations open through September meeting
- Intermission: Refreshments, Networking and EV Viewing.
- Program: Special Topics in the World of EV's, Bob Guimarin, President, Electric Vehicle Infrastructure Network (EVIN)

I recently attended the EcoFair360 in Elkhorn, WI at the Walworth County Fairgrounds. This was an ambitious premier of a three day show with many short (almost one hour) presentations, lots of exhibitors, entertainment, kid friendly areas, and lots of interesting things to see. The organizers had speakers and exhibitors in many classifications, including transportation, solar power, wind power, organic farming, water management, and many, many more. Over three days, in addition to over 100 exhibits, there were speakers on several of the topics. Most of the hours of the fair, there were speakers presenting in ten different presentation tents.

The fairground was well utilized, organized to keep folks in their areas of interest, and allowing them to pursue new areas. Several FVEAA members were on the program, either as speakers, exhibitors, or both. I saw Bruce Lanzerotti and Ray Scripture from Plug in Vehicle Solutions, and their exhibit of several choices in vehicle charging. Brian Levin of Carbon Day Automotive was also on the schedule, but I did not have a chance to see Brian over the weekend. I presented a program on the current and future of EV charging.

All three days were warm, and no part of the County Fairgrounds was air conditioned, but all the presentation tents were very well organized, with an opening on windward and leeward sides, and a wonderful cross breeze most of the time. The show was very well publicized as I heard radio promos on the drive up, and the receptionist where I stayed knew some detail of the fair. I was fortunate enough to be offered two nights at a FVEAA member's timeshare condominium at the Lake Delavan Resort, less than ten miles from the fair. Rose and Dom went up and we all enjoyed a vacation weekend, having significant pool time, and good dinners out.

There was only one concern for the weekend: attendance at the fair was sparse. Most of the fifty minute presentations were attended by not more than a dozen people, despite good seating for forty. It didn't seem to be a lack of publicity, as we saw announcements in several businesses in nearby Lake Geneva, and everyone who asked what brought us to the area, knew about the fair. I'm puzzled about the low attendance, as it seemed like the organizers had done everything right, from the printing (all on recycled paper, soy ink) to the name tags (recycled card stock, straps from recycled twine) to the AV equipment (tended by a polite young man who was very knowledgeable about the setup) and even the parking (closest parking was for hybrids and EV's, next closest was speakers and exhibitors). Their website was very well laid out, and updated regularly ([www.ecofair360.org](http://www.ecofair360.org)), I hope they do it again next year, and invite me back again, it was a great show.

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It occurred to me that there is a significant similarity between the world of electric cars, and the world of micro/mini cars. Micro cars are generally thought of as extremely small cars made for extreme economy. It is generally thought that modern microcars began in Europe in the years after World War II. Isettas, Messerschmidts, Fiat 500's, Gogomobiles are all examples of cars built in the 10-15 years after World War II, with engines less than 500cc. These cars were created to be very basic transportation in countries whose post war economy was in shambles. Creating transportation that could be produced for an inexpensive price and giving great economy of driving were factors that made these cars successful. In the year 2010, we are again concerned with creating low cost-to-drive transportation, and are turning to electrics as a solution.

Microcars (generally thought of as those cars with less than 500 cc engines, and the electric cars of similar size) are still produced today, although with smog legislation, bumper laws, mandatory side door beams, etc. have driven the basic cost up, but the Smart Cars, Minis, Fiat 500's and similar cars still exist. Minicars are usually very small cars with engines a little bigger (usually with a limit of 1500cc) and correspond to our Honda Fit, Toyota Echo, etc.

Microcar and Minicar owners are also similar to EV owners. Everyone I have ever met is willing to take you for a ride in their car, to show you it's features, and discuss it's good and bad points. Curiously, the World Meet for Microcars in 2010 is in our backyard, in Crystal Lake, Illinois during August 21,22 and 23. The event has 350+ micro/mini cars already registered, and will undoubtedly set a world record on Saturday with additional cars showing up for that day. Organizers expect the final number of cars to be over 500.

Often the owners want you to sit in or even ride in their car. Spectator admission is free, kids are encouraged, but pets are not allowed. Most of your questions can be answered by their web site at: <http://www.worldmeet2010.com/>

I think you will find a very interesting cross over in the thinking of microcar enthusiasts and EVer's. Come out and see these cars; most of them you won't see outside of a museum.

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I had a couple of occasions in the past month to journey north to Lake Barrington to see Bob Baker at Bob's Hillview Auto. I was impressed with Bob's shop and his work on a Honda Civic conversion. John Emde was also impressed, enough so that he asked Bob to replace a timing belt on his PT Cruiser, as the room to work on the timing belt is extremely tight and can be done best with specialized tools and some experience with prior Chrysler timing belts. As expected, Bob's work was competitively priced, quick, and extremely thorough. It's comforting to have someone know what other parts have a service bulletin on them, and get the entire job done at one time. We realized that there are thousands of shops closer to Lemont than Bob's, but it was well worth the trip to Lake Barrington.

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At the August meeting, we'll open nominations for the Officers and Members of the Board of Directors of the FVEAA for the next year. The nominations close at the September meeting, and the election will take place then. The By-Laws state: "C. ELECTION PROCESS. *Nominations for Officers and Directors commence at the August meeting with closing the day of the September meeting. The four officers and additional board member shall be duly elected by a majority vote of the members present at the annual meeting each September and shall serve a term of one year from the date of election or until their successors are elected.*"

## **Chicago Electric Vehicle Consortium notes**

*Rich Carroll*

On July 19, the City of Chicago, Department of the Environment, released a document calling for proposals for Plug In Electric Vehicle Charging Stations. This was in the form of a Request for Proposal (RFP). Respondents were to have until August 19, 2010 to submit responses to these RFP's, to the city for consideration. (Submit deadline is just before the FVEAA August meeting) After that, the City will announce the Award Notifications on September 1, 2010.

This is the first phase of the Chicago EV Recharging buildout. The Department of the Environment also announced that the initial \$1,000,000 would be matched by an identical amount from the State of Illinois' Department of Commerce and Economic Opportunity. The first \$1,000,000 was initially set for the first phase of the buildout in the City of Chicago; with the additional monies from the state, the first phase is expanded to the Chicago metro-area, defined as Chicago, Cook County and its five contiguous counties. In summary of phase one, the project has gone from a one million dollar grant to provide Chicago with the beginnings of an EV charging infrastructure (in the City of Chicago), to a two million dollar amount for the beginnings of an EV charging infrastructure for the six county Chicago metro area.

Some summary of the rather lengthy Request for Proposals include: (emphasis added by Rich Carroll)

- All **stations must be installed and operational by December 31, 2011**
- The proposal co-ordinates the Bureau of Underground (BOU), the Department of Buildings (DOB), the Department of Business Affairs and Consumer Protection (BACP), the Department of Construction and Permits (DCP), Department of Transportation (DOT), and the Department of Zoning and Land Use Planning (DZLUP). These departments comprise the City's Electric Vehicle Charging Station Task Force.
- This is hoped to be a turn-key program, including installing, maintaining, and billing. Stations must be operated and accessible for a minimum of three years (with a plan for long term operation)
- Two DOE Project Partners were announced, I-GO and Zipcar. **I-GO will have 36 dedicated charging stations, and ZipCar will have 25 dedicated charging stations** within the grant. I-GO and Zipcar are car sharing/rental programs that maintain cars in reserved parking spaces throughout the city and suburbs.
- **Stations must include Level II and DC Quick Charge stations**, including at least one solar canopy powered station in the first phase.
- **No level I charging was described**, although it is not excluded. Vendors may offer charging proposals that include Level I, but the decision on which proposal to implement will not directly consider Level I charging.
- In the first phase, this must include at least 61 dedicated charging stations for two car-sharing entities use.
- Data about PEV usage will be provided to the city, with some minimal requirements about the data contents.
- Level II chargers may be 208VAC to 240VAC, single phase, 30-32 A maximum input current. These are to be J1772 compliant.
- DC quick charging will use indicates either:
  - charging from 0/5 to 80% state of charge within 30 minutes, or
  - 40km driving range for 5-minute charge and 60 km for 10-minute charge.
- DC Quick charging shall comply with IEC 61851-1 international requirements. AC input for this system is 400VAC with a rating of 55 kVA maximum.
- This should give a Quick charging output of:
  - 50-500 VDC
  - 0 - 125 A DC
  - Max. output power is 50 kW
- DC Quick charge will have serial vehicle communications using the CHAdeMO protocol.

This is a very comprehensive document, and it will be very interesting to watch the buildout begin. Keep in mind that this is only the first phase, and there is still quite a bit yet to be done in further stages, and money already appropriated for this.

For your reading, the entire RFP can be downloaded from: [http://www.cityofchicago.org/content/dam/city/depts/dae/general/ESB\\_PDFs/CDOE\\_Charging\\_Station\\_RFP.pdf](http://www.cityofchicago.org/content/dam/city/depts/dae/general/ESB_PDFs/CDOE_Charging_Station_RFP.pdf)

Hopefully, the announcement on September 1 will not only release the winning Proposal, but the details, including how many of what kind of connections are planned in what areas.

### **Meeting Speaker**

*Rich Carroll*

Bruce Jones has again booked a very interesting program speaker. Bob Guimarin is President and CEO of Electric Vehicle Infrastructure Network (EVIN). EVIN has their offices in San Jose, CA, and have been very active in the development of exchange batteries in EV's. Previously, Bob had been Motorola's Senior Director, Security Technology Group, leading global security software development and advanced technology acquisitions. Bob Holds an MBA from The Graduate School of Management at UC Davis. He has run technology startups, worked at Cisco Systems as a Global Alliance Manager for Asia, and Consulting Engineer under the CTO's office involved in many M&A and early Cisco product development activities.

For several years EVIN has been active in battery vehicle exchange, a program that has the ability to overcome the "range anxiety" that has been prevalent in the media lately. Among other projects, EVIN operates a Vehicle Conversions Center, which is located within a club and secure car condo in San Jose, Club Auto Sport. EVIN's facilities provide a dedicated car condominium with all the equipment required to perform EV conversions.

Bob has agreed to share his thoughts on electric charging, battery costs, new driving cost and culture model for EV's. To finish his presentation, Bob will share his vision of what the EV world will look like 20 years from now.

### **Equipment for J1772 charging**

*Rich Carroll*

If you read the above article on the CEVC, you will realize that the J1772 connectors are coming soon to an area near you. Will you be ready? If you asked the question a month ago, you would only be assured that these connectors and plugs are coming soon. Some have started to appear.

Obviously, you can purchase a J1772 charging station from one of several vendors, and they can certainly work a quote that includes wiring a J1772 inlet into your vehicle.

Vendors might not have both pieces quite yet, but they do know about the plug. Contact Bruce Lanzerotti ([blanzerotti@getplugging.com](mailto:blanzerotti@getplugging.com)) at Plug-In Vehicle Solutions ([www.getplugging.com](http://www.getplugging.com)) or Brian Levin ([brianL@carboday.com](mailto:brianL@carboday.com)) at Carbon Day Automotive ([www.carbodayautomotive.com](http://www.carbodayautomotive.com))

Dave Kois from Current EV Tech has two J1772 inlets available for vehicular connection, priced at \$125.00 and \$225.00. I don't believe these include the logic circuits that is required to make the connection work, but this is coming very shortly. See: <http://currentevtech.com/Cables-and-Connectors/SAE-J1772-Connector-c64/>

Current EV Tech also has IEC 62196 connectors and sockets listed, although this is for a 63A connection of 3 phase power, at 400V available in Central Europe.

Pioneer Conversions is a vendor for the Yazaki made J1772 compliant plug, but they have not announced availability or pricing yet.

I discussed the issue with Rich Rudman, of Manzanita Micro, who told me, "he has the units on order, but they have not shown up here yet. The interface is so easy, I am not going to spend any time on it, until I have a socket to play with. We intend to offer it as an input kit for all our chargers." He already has reviewed the official J1772 completee standard.

So, I don't know of anything I could buy today that I can connect to my on-board charger, but I fully expect this to change in a matter of days or weeks. If you plan to install it on your own EV, I would suggest you wait until inlets with the correct circuitry are available.

#### **Financial Assistance Committee**

*George Vergara*

The committee is working make contact with the Schools around Naperville and Oak Park. There are a few obstacles, but mainly all the plan needs is to be implemented.

#### **Newsletter Editor**

*Nathan Stowe*

I will be stepping down as the newsletter editor. It has been a good experience, but after a year it is time to pass the torch. If you are interested in helping out, please contact Rich Carroll. The responsibilities consist of: reminding people of impending dead lines, consolidating the articles in Google docs, proofreading, printing/mailing, and finally uploading to our server.

#### **Future EVents and Parades**

*Rich Hirschberg*

**Will County Auto Rebuilders** - Sunday Aug 20th, 8am to 3 pm, Moose Picnic Grounds 159th Street, Lockport IL. 1/2 mile E of I-355 on 159th st. <http://carshows.sodastrip.net/> Free entry to the show. \$20 to show your car, which will give you a nice trophy and door prizes as well. This is a great event to bring EVs to those who are not going to be exposed to them otherwise. There was one EV at the show last year and it was a big hit with the crowd. Nathan will not be brining the e-RX7, so please bring your EV! There is essentially no charging at the event, but Stowe autobody (~7 miles west) can give overnight charging if necessary. Call Nathan if you need charging (773) 456-6322

**The Midwest Green Car Expo** - Saturday, September 11th, from 9 am to 3 pm. Civic Center Plaza parking lots, downtown Elgin, IL, corner of Douglas and Highland Aves. [www.MidwestGreenCarExpo.weebly.com](http://www.MidwestGreenCarExpo.weebly.com)

The FVEAA should make a good showing at this expo since it will highlight as many alt fuels as possible; vehicles powered by batts.(electrics), hybrids tech, veggie oil, biodiesel, nat gas, propane, solar cells, fuel cells, and pedal power. This is a great opportunity for us to keep teaching the region about EVs and the current & pending infrastructure. Planned for the show are various presentations on EVs, veggie oilers, and hybrids. An EV Ride-N- Drive is being worked on for the show as well. In previous years, the FVEAA picked up the gate fee for its members. This would require a vote by the membership at the August meeting. Businesses that support alt fuel efforts will also be in attendance. For more info, contact Chairman Rich Hirschberg - [GoAFVs@yahoo.com](mailto:GoAFVs@yahoo.com), 847.347.7171, or go to the web site.

**The National AFV Day Odyssey** - Slated for Saturday, October 16th at Judson University in Elgin, IL, plans are still being hammered out. If you'd like to assist Rich Hirschberg and

Rich Carroll in the planning of this awesome event, please contact them through FVEAA club channels. [www.NationalAFVDayOdyssey.org](http://www.NationalAFVDayOdyssey.org)

## Meeting Minutes - July, 2010

Bruce Jones

7:06 p.m.

The FVEAA meeting was called to order by Ted Lowe, previous FVEAA president, who was filling in for Rich Carroll. Rich and others from the group including Bruce Lanzerotti, were heading up to speak at the Eco fair 360 near Elkhorn, Wisconsin on Saturday and Sunday the 17<sup>th</sup> and 18<sup>th</sup>.

Many newcomers and others in attendance were then introduced.

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Due to recent interest, those looking to purchase FVEAA polo shirts and/or business cards were given the opportunity to sign-up and indicate their preference on cards that Ted passed around.

Next was a discussion about upcoming events and hybrid / solar / green fairs.

Dave Aarvold suggest we make August, (or an upcoming meeting) an electric car rally. Having everyone in the group bring their electric vehicles for a public showing generated very positive conversation from the group.

### OUTREACH

Rich Hirschberg, Outreach Director described many opportunities such as the Elmhurst Green Festival on July 31<sup>st</sup>, the Saturday Sept 11<sup>th</sup> Midwest Green Car Expo 9 - 3 pm downtown Elgin, (see [Midwestgreencarexpo.com](http://Midwestgreencarexpo.com)) and others. Talk with Rich if you have a group meeting and want to see the video, "Who Killed the Electric Car."

### FINANCIAL ASSISTANCE

George Vergara and Ken Simmermon held a conference call, and as a result, George will be sending letters to schools to determine if there is interest in the FVEAA providing education on electric cars.

NEW BUSINESS - None

OLD BUSINESS - None

### ELECTRONICS 101

Before Ted discussed what he would be doing for the evening's program a technical conversation ensued regarding various conversion projects, controllers and attributes of lead vs. Lithium batteries. Benefits of the new Thundersky Lithium Ion Yttrium Phosphate batteries include significantly better performance, more charge cycles, lighter weight, but they are more costly and of Chinese origin etc.

Ted then covered some basics in electronics as it pertains to electric cars, including  $P(\text{power in Watts}) = V(\text{volts}) \times I(\text{Current})$  and "Power is proportional to the square of the current." He explained  $P(\text{charging}) = V(\text{pack}) \times I(\text{charging})$  which calculates instantaneous power being put into the pack at the time of charging.

And he noted that Lithium has been recently been found in Afghanistan. (Refer to this article <http://www.nytimes.com/2010/06/14/world/asia/14minerals.html> )

TED LOWE'S TECHNICAL PRESENTATION ON THE "CHARGE LOGGER" - PART 1

Ted's presentation centered on a device he built himself that he calls a "Charge Logger." It is designed to be plugged in between the output of a battery charger and the input to the battery pack of an Electric Vehicle, and it measures the following:

1. Voltage of the battery pack
2. Charging current on the negative side

The device is based on an Atmel microcontroller and open source software, drawing a mere  $1/10^{\text{th}}$  of a Watt during operation. It has sufficient memory to track the entire history of the vehicle's battery pack over its lifetime, storing all details of battery operation and charging. Ted reasoned if someone spends \$12k on batteries for an electric vehicle, it makes sense to spend just a little bit more to include the right tools to provide; big benefits such as monitoring and tracking the battery charging process to help manage the batteries properly. The lack of accurate and timely battery maintenance can be extremely costly.

The Charge Logger runs on a separate battery so it can be unhooked from the vehicle and connected to a PC to download the information. The concept can be used with any rechargeable battery system.

== Break ==

Vehicles featured at the break include Steve Cimino's electric Saturn SUV converted by Pioneer Conversions to use Thundersky Lithium batteries, Ted Lowe's Chevy S-10, Chuck Carrington's electric MG, and Dennis Doney's electric bicycle.



**Steve Cimino's electric Saturn SUV w/ Lithium batteries**



**LITHIUM  
BATTERIES**

**Ted Lowe's electric S-10 truck**



**Chuck Carrington's  
electric MG**



**Dennis Doney's electric bike**

Netgain polo shirts and drinking cups were among the raffle items, and raffle meister Ken Simmermon collected \$37. First timer Steve Cimino was one of the shirt winners.

#### TED LOWE'S TECHNICAL PRESENTATION ON THE "CHARGE LOGGER" - PART 2

TED continued his talk on the Charge Logger, and at this stage did a deep dive into the technical design including actual circuit board layout that he created using Cadsoft and Eagle software, a powerful, friendly and affordable schematic capture and printed circuit board design package. Ted used open designs, inexpensive hardware and freeware as much as possible to keep costs down, making this a truly affordable battery charging management tool.

**Ted  
Lowe  
and his  
"Charge  
Logger"**



Excellent job Ted!

The meeting was adjourned at 9:30 p.m.

**FVEAA Membership Application Form**

Name: \_\_\_\_\_

Address: \_\_\_\_\_

City, State Zipcode: \_\_\_\_\_

Phone: \_\_\_\_\_ Phone Type: Home \_\_\_ Work \_\_\_ Cell \_\_\_

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Please check one: New Member \_\_\_\_\_ Renewal \_\_\_\_\_

How did you hear about the FVEAA ? \_\_\_\_\_

Member Types and Annual Dues (Please circle one)		Newsletter Delivery Types (Please circle one)	
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Please make your check payable to "FVEAA" and postal mail it with this membership application form to:

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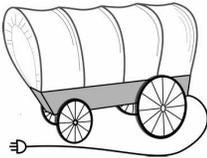
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