Fox Valley Electric Auto Association
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December 2011 FVEAA Newsletter

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

Next Meeting

Friday, December 16th, 2011 - 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

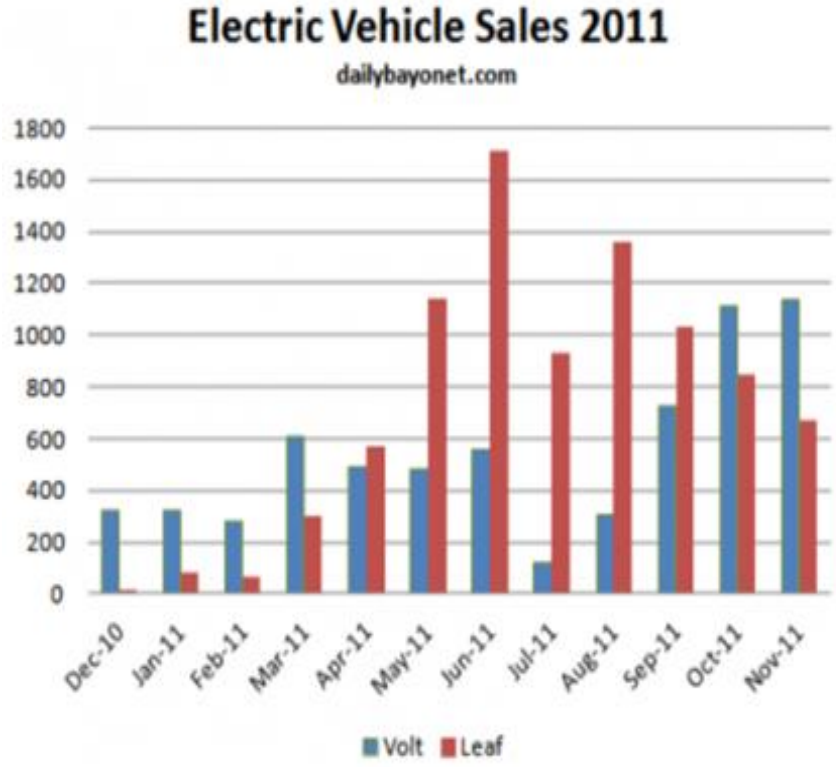
- Call To Order
- Old Business
- Survey Results
- Committee Reports
- New Business
- Technical Education: Miodrag Zubic - 2nd in series on Controllers - Controller ratings, what means what
- Intermission: Refreshments, Networking and EV Viewing. Mike Allison - Ford Transit Connect Van
- [Ask the Experts!]
- Program: Scott Fauque - My Volt presentation

President's Words

Bruce Jones

Hi everyone. The surveys we took two meetings ago provided some great suggestions for the FVEAA and we've already made a few changes based on the suggestions regarding chairs, and sound systems. Several activities and technical presentations were suggested, which we're working. And over the next year we'll try to incorporate as many as we can, so stay tuned.

Sales of electric vehicles has been somewhat slow this year due to several factors, including the newness of the market, the economic downturn and relatively high costs, even taking into account the $7,500 tax credit and possible Illinois EPA sales incentive up to $4,000. Check the chart from http://dailybayonet.com/?attachment_id=9404 for EVs and the second chart with hybrid sales at http://www.autoobserver.com/2011/12/hybrid-sales-soar-in-november.html Hybrid sales are around 25,000 per month versus EV sales around 1800 units per month.



This month we have three special presentations.

1) Miodrag Zubic will provide us with the 2nd in a series of talks on Controllers. Miodrag will explain (and probably open a little discussion) on the topic of: "Controller ratings - what means what - brand/model comparison". This would also touch on differences between AC and DC, as well as "water cooling" vs. "air cooled."

2) Then during the break we have Mike Allison of Mike Allison Trucks, commercial account manager of Hawk Ford, who will discuss and show us a new Ford Transit Connect van. You may have seen the first models of this vehicle with business logos, fairly successful as company fleet or small business electric trucks. Through the first half of this year, Transit Connect accounted for about 14 percent of Ford commercial van sales. In the past four months, that's jumped to about 24 percent of van sales. They cost around $50k, but provide on-going petroleum-free driving. Significant fuel costs are reduced over time which help the cost justification.

If anyone has a technical question about their EV conversion project, they can "Ask the experts," right after the break. We may have time for a question that the member experts can help answer.

3) Finally our special presentation will feature Scott Fauque who will flew to the east coast and purchased his Chevy Volt plug-in hybrid earlier this year, as one of the very first Chevy Volt buyers. Since then he has tracked performance of his car on the Myvolt.com website which is provided for all Volt owners to provide each Volt's efficiency, charging history and mileage. The Volt communicates through the OnStar network through unique Volt interfaces. He will also show technical features of the Volt and another web site www.voltstats.com which is an optional site for Volt owners who want to share information.

FVEAA Vice President Rich Hirschberg will be handling the meeting this month as I will be in Ohio attending my oldest daughter's college graduation at Kent State.

I wish everyone a very happy and joyous holiday!

Rich's Ramblings *Rich Carroll*

Battery Chargers

I had a customer who called me asking my opinion on a 'battery charger' listed on eBay.. What was listed was a 220V 30A 'battery charger' with a large paddle, which was used by the Chevrolet EV-1 and the GM factory produced S-10E trucks. The eBay listing showed the seller had 5 units, some new, some used, that had been allocated to a company several years ago. I was asked if the charger would be good for my customer to consider.

A look at the eBay ad, showed the problem. The seller had represented the units as Chargers, as "Lot of 5 Electric Vehicle Magne Charge EV Paddle Battery Charger WM200" and the pictures provided clearly show a unit labeled as "Electric Vehicle Charger." Specs provided, "input 208-240V, 50/60hz, 30A, Output 6600 W" indicated that these were chargers. But, they are not chargers, but EV Charging staions, used with the prior Large Paddle (Magne-Charge) system used 12-13 years ago. These are a safe way to connect an EV to a power supply, analogous to a J1772 connector or an AVCON. In fact these units were a part of the Magne-Charge system that competed with AVCON. They are specifically not chargers, but are only a connection to a charger.

It is obvious that we need to give a little more direction to help people doing their own conversion. There are several features which should be examined when making a battery charger choice.

Charging voltage. Most EV chargers have at least two, if not more stages of charge. The bulk of the charge is accomplished at a constant amperage. The amperage is high enough to charge the batteries reasonably quickly in the time alotted. The second stage of charge is a constant voltage stage, and the batteries are then brought up to a pre-determined system voltage with a smaller amperage. There may be additional stages of charge with variable voltage or amperage pulses, as a means of keeping the lead-acid batteries desulfated.

Charging amperage. Chargers are normally rated for the amperage they can put out during the bulk charging phase. Little attention is paid the the amount delivered in the constant voltage phase, as this can vary.

Ability of the charger to **adapt to alternative voltages.** Many chargers will automatically connect well to 117V or 208V (found on some 3 phase systems) or 240V. Some are built to only use one input voltage.

Ability of the charger to be **modified for higher amperage** or voltage. This is handy if you normally charge at a great connection, it allows you to maximize the current, to reduce charging time. But it you only can connect to a 117V 10A line at your mother-in-laws home for opportunity charging, will your charger accept that, or will it trip a breaker/fuse.

What does the charger do when it is finished/ Some simply turn off. Some turn off and monitor the voltage, restarting if the voltage goes down. Some send **a signal to other electronics.**

What signals can the charger respond to? The better chargers listen to some form of communication buss, and will turn off if one particular cell or battery gets up to too high a voltage. Some turn off, some turn down.

Is the charger **isolated?** Many chargers are electrically isolated from ground, some are not.If they are electrically isolated, they may be easier to connect to a J1772 connector, although the Manzanita Micro chargers are not isolated and connect easily.

With those thoughts, I proceeded to do a spreadsheet in an attempt to make the decision somewhat easier:

	Line voltage (input)	Line amperage (input)	Line frequency	Range of input voltages	Can vary voltage output	Can vary amperage output	When finished with charge, it:	Can respond to signals:	Electrically isolated	Number of Stages	Retail price
Manzanita Micro PFC20	250V	0-20A	40-80 Hz	100V – 250V	12V – 450V	0-20A	Turns off, can send signal	Yes	No	2	$2,050.00
Manzanita Micro PFC30	250V	0-30A	40-80 Hz	100V – 250V	12V – 450V	0-30A	Turns off, can send signal	Yes	No	2	$2,800.00
Manzanita Micro PFC40	250V	0-40A	40-80 Hz	100V – 250V	12V – 450V	0-40A	Turns off, can send signal	Yes	No	2	$3,000.00
Manzanita Micro PFC50	250V	0-50A	40-80 Hz	100V – 250V	12V – 450V	0-50A	Turns off, can send signal	Yes	No	2	$3,550.00
Elcon PFC 1500	265V	1500 W	45-65 Hz	85V – 265V	(No, can order 120V. 144V, 156V, 192V)	no	Pulses voltage, sends signal	No	No	Multiple	$560.00
Elcon PFC 2500	265V	2500 W	45-65 Hz	85V – 265V	(No, can order 120V. 144V,	no	Pulses voltage, sends signal	No	No	Multiple	$665.00

Elcon PFC 3000	265V	3000 W	45-65 Hz	85V – 265V	156V, 192V) (No, can order 120V. 144V, 156V, 192V)	no	Pulses voltage, sends signal	No	No	Multiple	$1,100.00
Elcon PFC 6000	265V	6000 W	45-65 Hz	85V – 265V	(No, can order 120V. 144V, 156V, 192V)	no	Pulses voltage, sends signal	No	No	Multiple	$1,620.00
Zivan NG3	240V	~1500 W	50-60 Hz	117 OR 240V	no	no	Pulsed third stage	no	yes	3	$1,100.00
Russco SC 50-240	240V	0-30A	50-60 Hz	208V – 240V optional 117V)	80-225V	yes	proportional auto shutoff	yes	yes	2	$1,000.00
Current Ways BC 3 KW	240V	12A/16A	47-63Hz	100V-240V	112V-225V	no	CanBUS signal	yes	?	3	$2,750.00

The real suggestion is for those purchasing a charger, to consider all the necessary factors before making their decision. You should also ask about warranties, as some brands are less reliable than others. Some warranties are for a year, but start on the day the charger is manufactured.

EBay and the EVTradinPost are great places where you can get a good deal on a piece of equipment, but know what you want first, by having done your homework. If you are unsure, ask friends in FVEAA, and ask about features, warranties, etc.

High amperage connectors available

George Hamstra

I recently acquired a batch of high amperage connectors, and wanted to give the FVEAA the opportunity to pick up several connectors at a great discount. As any of you might be aware, rewiring a high amperage connection for your EV, for a dryer outlet, or a range outlet will cause you to gasp at the price of the connectors. Many of these connectors have retail prices over $30. The batch that I acquired still have older prices on them (one I checked is priced at $15 while the catalog price is near $150) and I priced them to the club at half the marked price. We'll even give bigger discounts if you take more than $60 or more than $100 worth.

They will be displayed on a table near the door at the next FVEAA meeting. If you are a contractor, and use these in your work, this is the best deal you will ever come across.

Any receipts above my total cost will be donated to the FVEAA treasury.

Meeting Minutes - October 2011

Dave Aarvold

The meeting was called to order at 7:04 with a reminder from Bruce Jones that in 1984 FVEAA dues were $15.00 per year, the same as they are today. Talk about value! Rich Carroll reported no news on the CEVC front and brought an extensive list of electric vehicles that would be available for sale. Packer Engineering had a battery powered sound system

that seemed appropriate and functioned well. . . much better than the old system. Ken Simmerman reported that plugshare.com provides a good map of current charge opportunities. George Hamstra brought a table full of swag that he picked up at the EV conversion convention he attended with his family. Todd Martin got the upgrade conversion to the charge station in Elgin finished. It is located at 95 Symphoney Way in the heart of Elgin. He also reported that the church in Beverly wanted a J1772 connector also as well as the demo unit we use for public apperances. A motion was passed to equip both.

George Hamstra, his son Hunter, and daughter Hannah Etzkorn, and family presented a picture show of the Elctric Vehicle Conversion Convention for converting vehicles to EV. The technology to convert is progressing almost as fast as the components. They reported that the convention was well attended by people ready to start converting vehicles. There were 15-20 conversions on display with dinner(s), swag bags, cocktail hours, class sessions, demos, and a good time had by all. There was an item of particular interest, namely a 3500 amp controller. And Chris Payne of "Who Killed the Electric Car' fame. They estimated the crowd attending the parade through Girado, Missouri to be in the neighborhood of 1500.

After the break we had a presentation from Heidi Lubin, CEO of Hybrid Electric Vehicle Technologies (HEVT) a spinoff from Illinois Institute of Tecnology with 10 electric vehicle patents. She presented their new switched reluctance motor design. They are also powering the vehicle from the rear in a serial parallel drive train arrangement which is new, and are using a new charge controller for V2G. The motor tech is not new, but they feel that with the market for rare earth magnets being almost controlled by the Chinese, that a different form of motor should pay dividends for their company. They may also have an advantage with cheaper motor production costs. Adjourned 9:45.

Meeting Pictures - October 2011 *Bruce Jones*


George Hamstra,
family and friends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Membership Form

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FVEAA Membership Application Form

Name:_____
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Please check one: New Member _____ Renewal _____
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Total Due from Both Columns:			

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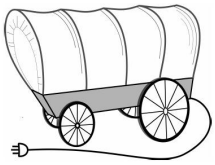

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