



July 2017 FVEAA Newsletter

Fox Valley Electric Auto Association

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

Next Meeting

JULY 21, 2017 7:00 p.m. to 9:00 p.m.

NOTE ALTERNATE MEETING LOCATION FOR JULY 21

The Fox Valley Ice Arena (1996 S. Kirk Rd. | Geneva, IL 60134)

Agenda

- 6:30 Doors open -> Sign-in Sheet
- 7:00 Call To Order, Welcome and Introductions
- 7:15 Hunter Hamstra: The in and outs of Netgain's new HyPer 9 motor
- 7:45 Break and EV showings
- 8:15 Planning National Drive Electric Week.
- 9:00 Close

President's Words

Michael Willuweit

Well, after looking like we would meet at Tesla's new showroom in Westmont this month, they called and said that they had three events planned that day and would have to cancel. It's my hope that we will still meet there this year. The fine folks at the Kane County Forest Preserve will allow us to use their board room again located on the third floor of the Fox Valley Ice Arena. I will try to block off some of the parking spots adjacent to the charging stations to showcase all the EVs in attendance and hopefully they can share the juice from the two Chargepoint plugs found on the south side of the building.

Last month our own John Emde shared some information about Netgain Motor's new HyPer 9. I'm pleased to announce that this month Netgain's Hunter Hamstra will be giving us the full specs and performance results of the motor. This motor and controller pairing from Netgain is probably the most exciting news in the EV conversion community in years.

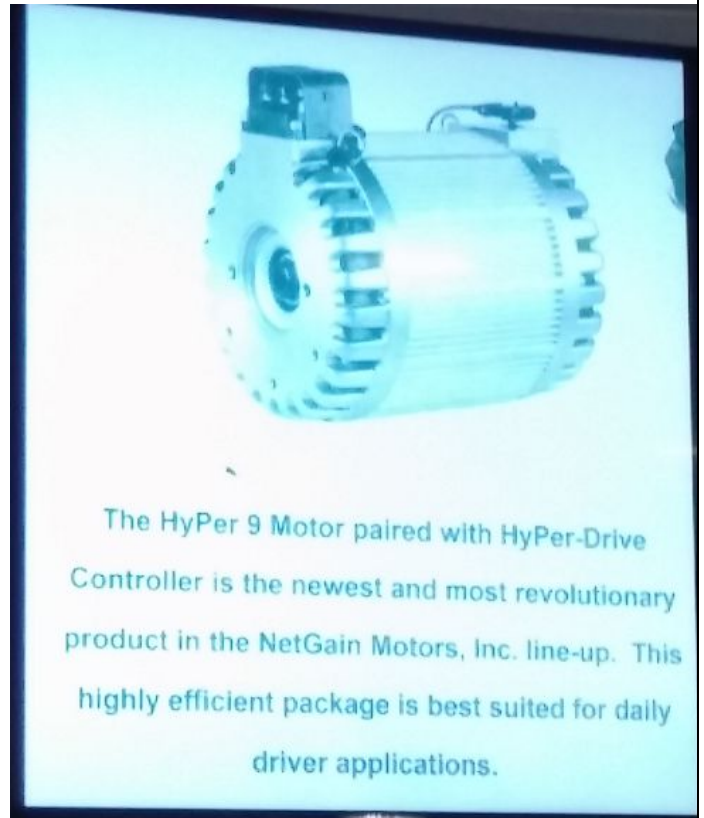
Speaking of conversions, they are not dead! Even with a market full of exciting OEM EV choices, there is nothing like resurrecting a classic car with EV power. I know we have a quite a few members involved in converting vehicles and I hope they can attend and perhaps share some information/questions on their projects.

Just a reminder that the FVEAA will meet in Crystal Lake at the Small Wonders Micro/Mini Car Museum for our August meeting. More details in next month's newsletter.

Hope to see you this Friday!



John Emde (looking a bit “hyper”) presents NetGain’s newest motor, the HyPer9 AC Motor, first AC motor they have produced. About the same size as the Warp9 but with more torque, and regen capable.



Jeff Miller explains the current progress on the first Phase of rewiring his house for 400 amp service. He liked the installation of service provided in one day by Upgrade Electric in Elk Grove Village. After its all said and done he will have 4 (yes four) charging stations!



320amp meter that ComEd installed



Kevin Zak holds a circuit breaker from Jeff's rewiring project



Steve's historically significant license plate



Jeff Green's iMiev looking sweet



Rich Rezny stands by his Ford Focus Electric



And shares the electric plug with Mike's Rav4 EV



George Gladic with his long time battery - expanded plug-in Prius



That still gets over 100 miles per gallon

FVEAA Facebook Page - Like Us!

Grant Gerke

<https://www.facebook.com/FoxValleyElectricAutoAssociation>

FVEAA Facebook Group - Join Us!

Ted Lowe

In October 2015, i created a Facebook group for the FVEAA and invited all the past and current FVEAA members i know that are on Facebook. There are 47 members so far. If you're on Facebook but not in the group, yet please join us! If you're not on Facebook yet, please consider joining so you can join our group there! This group will help to replace our forums because it is much easier to use, read, post pictures and videos and get notifications. Please let me know if you have any questions/comments/suggestions. Hope to see you there! <https://www.facebook.com/groups/889497691136309/>

Rich's Ramblings

Rich Carroll

So, at least one of the vehicles in your family, or perhaps your extended family is gas powered. Is there any way you can inexpensively look like a star and help that vehicle be more energy efficient. Absolutely. Follow along.

Any car or light truck made after 1996 has an Onboard Diagnostics port under the dash near the steering column. This is a 16 pin socket with an unusual connector, originally designed as a port for service technicians to quickly read all the messages and warnings from your car in order to diagnose any problems. While this port, a generation 2 of the OnBoard Diagnostics called OBD-II or OBDII, was designed for use by a service tech in the garage, it can be used in daily operation with some caveats. The most common appendage to put in, other than a diagnostic instrument, is a bluetooth connector. The advantage of a bluetooth connector is that signals on the port are now available to any nearby bluetooth device including your phone.

The first caution in obtaining a bluetooth OBDII module is to make sure the device you are purchasing is ONLY a bluetooth module, and not some device that includes any data storage. Second, be very aware that you have just made your car control systems available to anyone nearby with a bluetooth radio. That said, I would STRONGLY suggest you spend the extra few pennies to get a quality adapter. And telling whether it is a quality adapter is reasonably easy. You also need to decide whether to consider a bluetooth connection (for most Android devices) or a wifi connection (for iPhone devices).

The industry standard in OBDII connectors is the ELM 327 chipset. There are literally hundreds of generic knockoffs of the famous "ELM 327" chipset, so many, that the copies far outnumber the real ones. ELM Electronics (BTW, it is ELM not Elm) was the original, and their version 1.0 was a translator for the On Board Diagnostics in cars and light trucks. Version 1.0 was not copy protected, and many other companies quickly copied the ELM product, some quite successfully, some not so successfully.

ELM later created versions 1.0, 1.2, 1.3a, 1.4a, 1.4b, 2.1, and 2.2. The minor differences in their product line can be found on <https://www.elmelectronics.com/products/ics/obd/> Note that ELM Electronics did not release a v1.5 or a v3.0. Many of the inexpensive copies claim to be ELM v1.5 and even show that version number in their (poorly copied and modified) code. Avoid any ELM v1.5 adapter, which is a poor, incomplete copy of v1.0 or v1.3 and not known to work completely. Version 2.1 and 2.2 ELM adapters have increased transmit buffer bytes, increased AT command responses, and CAN frequency checks. If you want a good adapter, I suggest you:

- Absolutely avoid any adapters stating they are ELM327 v1.5
- Absolutely avoid any adapters stating they are ELM327 v3.0
- Avoid any adapters shipped from the far east (China, Hong Kong, etc.) as they are likely copies. ELM Electronics is a Canadian firm.
- Purchase from a known, quality distributor.

Now, to differentiate themselves from their (less expensive) competitors, several companies have brought newer, faster, smaller adapters to market. Some of the older adapters had a profile height of 3 inches or so, meaning they stuck out or down from your dash for some inches. Newer adapters cut this to 1.4 inches or so, and the latest ones are under 3/4 of an inch in projection.

Bluetooth protocol adaption has moved from 1.1 to 2 to 2.1 and now goes to 4.1. The newest Bluetooth adapters (4.1) use ultra low power, consuming 0.2 Watts during activity, as opposed to 1.24 Watts during activity in Bluetooth 2.1. The connection speeds of the new adapters are also twice or four times the old adapters. Does the power, the size, and the speed make a difference? No. The only one of these factors that seems to come into play for normal vehicles is the power draw, and that is only a factor if you leave it plugged in. I have never seen a need for faster OBD-II links, or faster communications, or a need for less power consumption. Very few cars have a space limitation where physically smaller adapter would be much more desirable. In fact, I have seen two instances with the newest (short projecting) adapters were extremely difficult to remove from a socket that was somewhat set back into the dash materials.

For further reading:

<https://www.scantool.net/forum/index.php?topic=2379.0>

<https://timyouard.wordpress.com/2015/09/02/disection-of-a-counterfeit-elm327-obdii-adapter-from-china/>

Once you have an OBDII adapter, you have software to install. "Torque" has been my favorite for years. (It's in the Google Play store) The ad-supported version is free, the ad-free with even more widgets is an additional \$4.95. Torque gives you graphic screens that you can put gauges on. Dials, half dials, meters, Bar displays, digital readouts, and much more is available in their style choices. Data choices to show include Absolute Throttle Position, Accelerator Pedal Position, Acceleration sensors in three axes, average speed, engine RPM, fuel flow rates, MPG (instant or long term average), and many, many more. Torque is nice, giving gauges that look like an auxiliary dashboard, configurable for size and for range. If you don't want to do this on a phone, use an older android tablet, it will look great as a dashboard. Some street rods and custom cars have given up on real gauges completely, relying on a sensor or two and a bluetooth connection to an android device. I have even found older android tablets (the ones without cell circuitry) at Goodwill for \$10.

Other android software can be used, including Dash Command, OBDLink, OBD Droid Scan, and more.

So, let Uncle Harry take his gas powered car for a highway run, particularly on a non windy day with the cruise

control set. Show him the difference in gas mileage at 55 MPH, and 63 MPH, and at 71 MPH. Start with the tire pressures on the door jamb sticker, but see if the gas mileage improves by going from 26 PSI to 32 PSI (check the tire sidewall for maximum tire pressure). The number on the door jamb provides a good ride, with reasonable gas mileage, but it is balanced for a population mix. If Uncle Harry doesn't mind just a little rougher ride, he can save 5 or 10% in MPG by adjusting tire pressures in some vehicles. And he will likely find he gets better gas mileage with the windows closed and the air conditioning on, as opposed to windows down. But you can show him how to check this. And you will be doing it with REAL numbers, using his car, his tires, his car's shine and slipperiness, etc. And if you want to tempt fate, ask him about a fox tail on his car antenna (if his car does have an external antenna, many do not.)

Membership Update Ted Lowe

We currently have **66 active paid-up** members, **up 2** from last month! Please renew and recruit new folks!



FVEAA Membership Report
as of 2017-07-18 04:58:06

Count of Members by Type

Membership Type	Count	Paid Up
BusinessStd	1	1
Family	7	7
Individual	56	55
LifetimeInd	3	3
Totals	67	66

Other Statistics

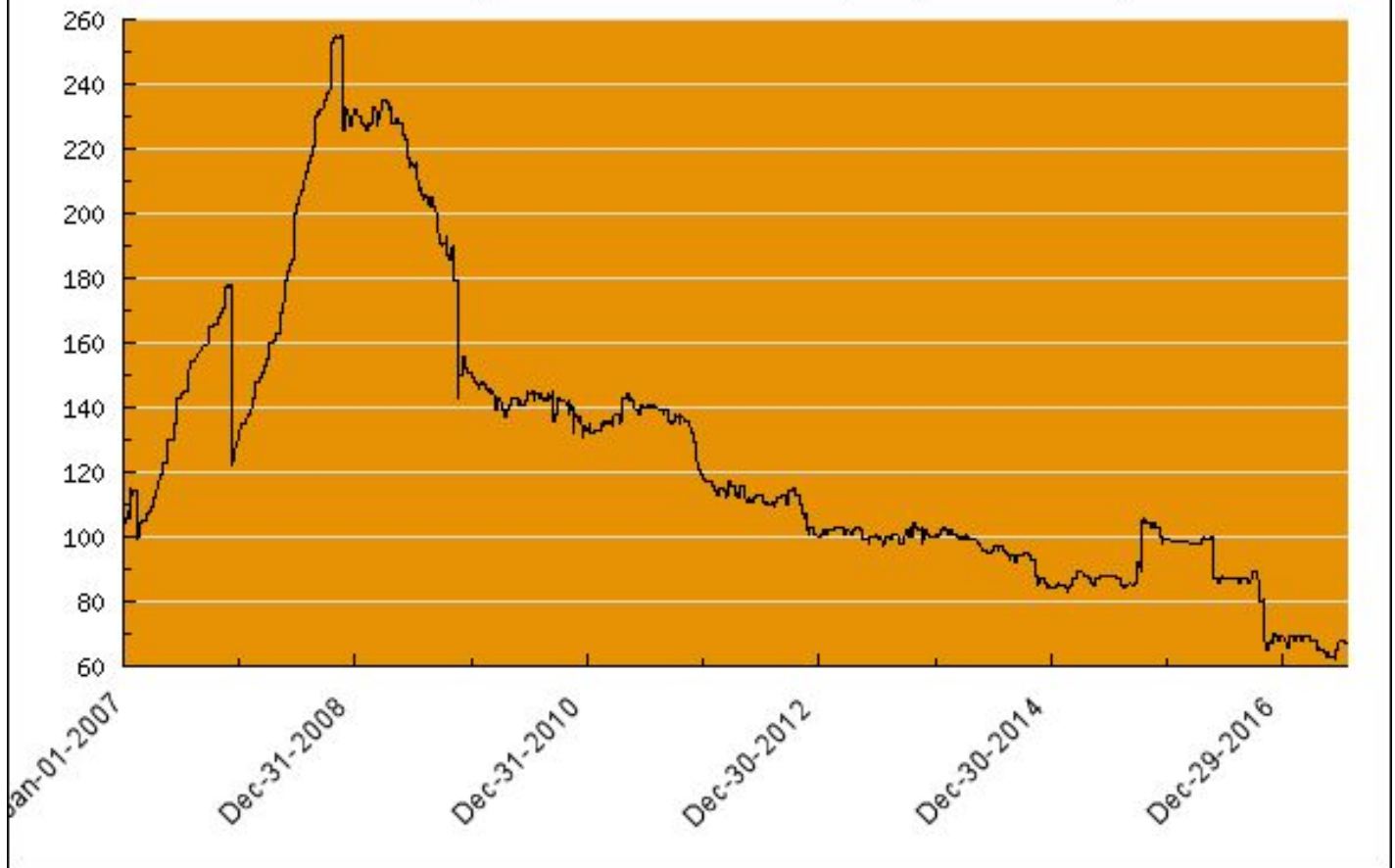
Statistic	Value
% Paid Up	98.5%
Avg. Paid Up Days	177.2 days
% With Email	94.0%

Encouraging Our Membership To Grow in 2017 and Some History Ted Lowe

We live in a large metro area with 8 million people and EVs are the latest buzz so we should be able to grow the FVEAA! **Please invite your friends, neighbors, family, colleagues**, etc. to FVEAA meetings and EVents. Volunteer to attend EVents on behalf of the FVEAA (with or without an EV)! Your ideas on how to help grow the FVEAA are welcomed at anytime, thanks! Howard Hansen had a **great idea**... giving an FVEAA membership as a gift!

Here is a time-varying graph of our membership size from 2007 to now. Note that we peaked at about 255 members in the Summer of 2008 when gas was nearing \$5 per gallon. We were also attending lots more invitational EVents with our EVs. **Let's get out there and grow the FVEAA in 2017!!!**

FVEAA Paid Up Members as of July 18, 2017 12:38pm



Membership Renewals

Ted Lowe

Our membership system sends out “renewal reminder emails” before your membership is due. You will receive up to 3 before being marked “not renewed” (inactive). The sooner you renew, the fewer emails you will receive :)

So please pay attention to your email from the FVEAA and renew online using this link (for the easiest approach for all of us):

<http://www.fveaa.org/renew>

THANK YOU for your continued support of the FVEAA!

Meeting Minutes - June 16, 2017

Bruce Jones

The meeting opened at 7:05

- President Mike Willuweit opened up the meeting and spoke about news in the electric vehicle world.
- Those in the audience then Introduced themselves.
- Mike presented last month’s photos of the meeting and the Aurora Green Fest on 6/10
- Rich Hirschberg described the upcoming outreach events and spent time going over the options we have available for the first NDEW event, possibly at Springhill Mall which is asking for a fee.
 - 8/19-20 IREA Sustainability Fair (IL Renewable Energy Assoc) Location: Oregon, IL 61061
 - National Drive Electric Week Dates: Sept. 9 to 17 Locations:
 - Event 1- possibly Springhill Mall in West Dundee Sat 9/09 tentative for Sat. Sept 9th
 - Event 2 - Naperville Test Track 9/17. Setup 12:00 noon, open 1-4, take down /pizza after

8:30 Break

- John Emde presented the new Netgain HyPer9 AC motor
 - 100v nominal Voltage, Current 750 amps, 173 ft. lbs of torque at 0 rpm, weighs 120 lbs
 - Regen built in, 3 phase motor,
 - Price range under \$2000 plus the HyPer Drive Controller for around \$1500

- Jeff Miller presented the first phase of upgrading his house to 400 amp service, with a 320 amp meter from ComEd

- **We ARE MEETING AT COMPLETELY DIFFERENT LOCATIONS THE NEXT TWO MONTHS!**

Meeting Adjourned at 9:20 p.m.

FVEAA Membership Application Form - Version 2014-01-01

Name: _____

Address: _____

City, State Zipcode: _____

Phone: _____ Phone Type: Home ___ Work ___ Cell ___

Email: _____

Please check one: New Member _____ Renewal _____

How did you hear about the FVEAA ? _____

Membership Types and Annual Dues (please circle one):

Individual	\$20
Business	\$100
Premier Business	\$250
Charter Business	\$500

Newsletter Delivery Type (please circle one): No Newsletter Electronic

Please make checks payable to "FVEAA" and postal mail it with this membership application form to:

FVEAA

PO Box 214

Wheaton, IL 60187-0214

Attn: Membership



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Phone: 773-922-3018
Web: hourlypricing.comed.com

CHARGE YOUR VEHICLE FOR LESS WITH HOURLY ELECTRICITY PRICING

It is great having near zero, or sometimes even negative, rates to fill up my car for nearly free or even better!

— Daniel H., Hourly Pricing participant since 2015

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