

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

Return Service Requested

Monthly Meeting: **Friday, November 21st, 2008 - 7:00PM** (doors open at 6:30PM)

Meeting Location: **Packer Engineering, 1976 N Washington St, Naperville, IL 60563**

Directions: 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.



## November 2008 FVEAA Newsletter

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

### Meeting Agenda

#### Business:

Call to Order and Introductions

Old Business

Renewal Reminder

Proposed By-laws Changes

Committee Reports

New Business

EV-XPrize for EV products proposal.

#### Intermission:

EV Viewing, Networking & Raffle Tickets

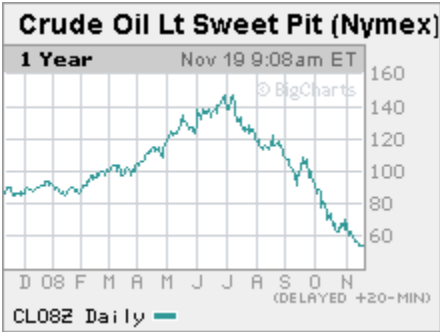
#### Programs:

##### **Controller Design - Part 2 - Miodrag Zubic**

Presenting details regarding his work designing DC traction motor controllers.

##### **Rear Wheel Skirt Installation - Todd Martin**

Improving the aerodynamics on an EV increases their range, extends the working life of the batteries, and saves you money at the wall socket. Installing rear wheel skirts is an easy "mod" that anyone can do with a little work.



When i was a kid i liked roller coasters. Perhaps it was the fact that i knew it would be just a brief rush and then it would be over with our feet back on the ground in the same place we started.

Well we're on a roller coaster again, but this time we don't know when and how it will "end". Last July we had the highest oil prices EVER (\$150+) and now, just a scant 4 months later, the lowest in years (\$55). National average for gasoline in July was \$4+ and now is about \$2/gal.

Are we now feeling the true price of last summer's peak ? The worldwide economic crisis? Speculators ? Newton proved that "whatever goes up will come down", but we're dealing with forces much less predicatable than gravity here. We could all abandon our EVs (or plans for them) and buy Hummer's since gas is so "cheap" now, but we know that whatEVER comes down, will go up! So let's all continue our EV pursuits and be more prepared for whatEVER the future brings!

**FVEAA Meeting Minutes for 10/17/08**

*Todd Dore*

- A. Meeting started at 7:06pm
- B. There were 10-12 new attendees - intros to 1st time visitors
- C. Ted Lowe reminded us about membership renewals
- D. Committee Reports
  - a. Charging Infrastructure update - Todd Martin
  - b. By-Law changes - Ted Lowe
    - i. Remove special meetings
    - ii. Reword the newsletter publishing time
    - iii. Replace the wording 'special committees' with 'standing committees'
 These changes will be voted upon in the November meeting
- E. Membership map
- F. Raffle Tix - Chuck Carrington sold these
- G. EV X-Prize - Todd Martin
  - a. \$2,000 competition during 2009 - paid by the club treasury
  - b. 1st - 5th prizes
  - c. Invitations to EV businesses, media outlets, and of course our club
  - d. 5 categories for scoring
  - e. Winners determined by FVEAA member voting
  - f. 1 year cycle for submission, voting, and prizes
  - g. Ted - table a vote on acceptance of this contest until the November meeting
- H. New Business - Ted Lowe
  - a. 2nd annual renewable energy fair at waubensee college - Chris Sharp - 10/18/08
  - b. Special thanks for help with the 'Electric Bug' conversion - Todd Dore
- I. Break at 8:15pm to view the 5 EVs at the meeting - Electric Bug, Ted's Truck, Ryan Brandy's electric DeLorean, a NEV OEM from China, George Gladic's PHEV Prius, and some more.
- J. Raffle - 9pm - many prizes awarded. Thanks to Chuck Carrington for running this and raising \$53 for the cause.
- K. Presentation - Adam Snyder from Lawrence Tech U (Michigan) - Fuel Cell and Ultra Caps Go-Kart
- L. Meeting Adjourned at 10pm

**Membership Update**

*James Zukowski*

We're **255 members strong**, 19 new since last month! **BIG WELCOME** to:

Jerry Anderson, Downers Grove, IL  
 John Biernack, Glendale Heights, IL  
 Romas Blazys, Westmont, IL  
 Gene Buza, Bensenville, IL

Robert Belluomini, South Elgin, IL  
 Raymond Blazys, Naperville, IL  
 Edmund Bolda, Calumet City, IL  
 Electric Vehicle Solutions Inc., Sterling, IL

Harris Robert, (Business), Chicago Ridge, IL  
Bob Hoeszle, New Salem, IL  
Glenn Reed, Prospect Heights, IL  
Maureen Stillman, Naperville, IL  
Keith Harkleroad, Chicago, IL  
Alex Rodriguez, Oswego, IL

Mark Heaton, Naperville, IL  
Allan Hostert, Channahon, IL  
Kevin Reemes, New Berlin, WI  
Roger Valter, Ridgway, IL  
Michael Willuweit, Batavia, IL

## Renew Your Memberships !!!

*James Zukowski*

87 FVEAAer's memberships were due for renewal on Halloween and could have saved us all some time and nagging. Many of you have done so (THANKS), but there are 38 who haven't -- yet. For those of you who haven't figured it out yet, if your name is on this list, your membership is officially expired:-)

**Aarvold, Dave**  
**Adomaitis, Ken**  
**Aguilar, Mike**  
**Ancona, John**  
**Ashner, Harry**  
**Attig, John**  
**Attig, David**  
**Baker, Jon**  
**Bannes, John**  
**Barounis, Peter**  
**Bendig, Charles**  
**Berglind, Kenneth**  
**Brinkmeyer, Alfred**

**Brunka, Tom**  
**Byrne, Jennifer**  
**DeLong, Rick**  
**Ewert, Chris**  
**Hallenbeck, Jim**  
**Harris, Ed**  
**Hirschberg, Rich**  
**Jeide, John**  
**Lanzerotti, Bruce**  
**Lencioni, Andy**  
**Lepage, Gill**  
**Merian, Samuel**  
**Mosler, Frank**

**Pozorski, Nat**  
**Rathburn, Danny**  
**Reddick, Rose**  
**Roman, Eddie**  
**Schoonveld, Eric**  
**Sheridan, Charlie**  
**Shumate-Pierre, Loretta**  
**Strange, Dave**  
**Talley, Tracy**  
**Vitek, Laddie**  
**Williams, Mark**  
**Zanis, Greg**

To avoid further embarrassment, you can renew online at [www.fveaa.org/renew](http://www.fveaa.org/renew), pay at the meeting, or send a check to FVEAA, PO Box 214, Wheaton, IL 60187-0214.

## Proposed Bylaws Changes

*Ted Lowe*

These proposed changes are announced here and will be voted on at the November meeting.

### Remove Reference to Special Meeting

The concept of 'Special Meetings' was removed by the previous amendments, but a reference was not removed.

### Newsletter Publishing Schedule Change

Current wording : Article III - C. NOTIFICATION All current members shall be notified by mail of each Annual, Regular and Special Meeting by the Secretary, or the Secretary's agent, at least one week prior to the meeting.

Proposed wording: Current members shall be notified of meetings no less than 4 days before the meeting.

Rationale: The FVEAA Newsletter is our vehicle to notify members of upcoming meetings. Try as we might, we have consistently not met the 'at least one week' bylaw. This would require publishing the newsletter by Friday 7pm on the 2nd Friday of each month. This is a reasonable schedule for a retired person, but is very difficult for people with regular jobs. Changing to the schedule to 'no less than 4 days' will allow publishing after a weekend of production and still allow time for the (diminishing number of) postal mailed newsletters to arrive in member's mailboxes before the meeting. The overwhelming majority of newsletters are distributed electronically now (210 to 48) which are instantly distributed.

### Rewording Article II: Committees

Current wording: A. STANDING COMMITTEES This Corporation shall not have standing committees.  
B. SPECIAL COMMITTEES The President shall appoint special committees and their chairmen as needs arise.

C. COMMITTEE VACANCIES Vacancies on shall be filled immediately by presidential appointment.

Proposed wording: A. COMMITTEES This Corporation has committees as required to organize and perform FVEAA activities.

B. COMMITTEE MANAGEMENT The President shall create and dissolve committees as necessary and apoint their chairmen.

C. COMMITTEE VACANCIES Chairmen vacancies shall be filled promptly by presidential appointment.

Rationale: We do have committees now which are making progress in distributing responsibility and activities to a wider group of members increasing our ability to perform our mission. There is no longer a distinction between a special or standing committee.

### **Support Our Sponsors That Support Us!**

Visit our Sponsors page to view their details: [www.fveaa.org/sponsors](http://www.fveaa.org/sponsors)

Pay their support forward by visiting their websites and seeing what services and products they offer!

### **Learn from the Hypermilers**

*Rich Carroll*

I recently acquired an S-10 pickup, and while thinking about the conversion, I ran across the a [newer calculator for EV range](#). This seems to build on the older calculators by UVE and others. I had no problem with the older calculators, but the data used for motors and controllers was not updated. I started by noticing the factors which can be modified to increase range, and started with the low rolling resistance tires (LRR), and found that it makes a difference in range. I also acquired an S-10 adapter plate and a couple of ADC motors used, and compared the ADC to the WarP 9 to find out how much the advanced timing on the WarP motor was worth (significant).

I started thinking wondering how much a solid pickup cover would be worth, and found that information on one of the forums dedicated to improving the gas mileage of small cars and trucks. Many of the tips they use to increase their gas mileage will directly translate to an EV using less energy per mile, and therefore increased range.

After only one pass through the forums, I found I had clipped and saved the following information as a good starting point. Just like changing to the WarP motor (which is good for 10-18% range improvement) I found many things that will each contribute to a few percentage points. Here are the interesting items I found.

#### **The starting places**

- Lower the car – This has two benefits. With less tire and wheel showing, the frontal area is less. With less air going under the vehicle, the turbulence is less.
- There will be an ideal ride height for each car. A ground hight of around 3 inches seems to be ideal. According to Mercedes, "Lowering the ride height at speed results in a 3-percent improvement in drag."
- When removing gasoline tank and exhaust under the car, pay attention to how clean you can make the aerodynamics. A body pan is not that difficult to create, it is more labor intensive than cost intensive. Remember, the bottom surface of the car is almost as important aerodynamically as the top.
- If a body pan is too difficult or too expensive, an air dam add benefit. It will redirect air that will normally enter the turbulent underpanel of the car, and significantly decrease drag.
- Covering the rear wheel wells, called "fairing." This will dramatically reduce the turbulent air flow around the rear wheel opening. While the front wheel can not easily be completely faired due to clearances needed for turning, a partial fairing can be made. Any mud flaps, or mud flap like structures should be removed. Many of the newer cars have vestigial mud flaps to keep the body clean if the car is driven on a mud or dirt road, and these are integral to the body structure. While a good body shop can remove them, this is expensive. If they are bolt on, remove them.

- Clean up the front of the car. Any large openings originally designed to allow air flow to cool the gasoline motor can be covered, and you should remember to cover them aerodynamically. If you can completely cover the opening, you can make a panel that is aerodynamic from plastic or composite.
- Evaluate the side view mirrors. Consider smaller mirrors or instead use a remote camera system.
- Replace large whip antennas with smaller powered antennas.
- A small "tail cone" can be affixed to the rear bumper to help transition the air from under the car.
- Side fairings can be used to clean up the lower half of the body between the tires. [More...](#)

**Additional mods for trucks:**

If you need the utility of a truck, there are things that can be done to improve their efficiency. In addition to the items noted above, most notably, cover the bed! A flat hard cover will help some, but a custom aero cover is much more efficient. Experimentation has shown that simple removal of the truck tailgate does not provide better mileage.

**Turbulators, etc:**

In areas where the body transitions at a rate of more than 12 degrees, turbulator strips, vortex generators, diffusers, very short fairings or other devices can be used to "trip the airflow". The idea is that areas like the transition between the roof and rear window on the average car creates a large vortex. Any large vortices effectively grab the car and try to hold it back as it tries to slip through the air. If the air that makes up the vortex can be "tripped" before it leaves the back of the car, it will make smaller vortices, which will have a smaller effect on the overall aerodynamics of the vehicle. Measurement of the effects of these devices at highway speeds has been difficult to obtain.



**Tires:**

Tire rolling resistance (RR) also plays a large part in the mileage of a vehicle. Running your tire pressure at higher pressures will help somewhat (do not exceed rated pressures printed on the side of the tire), but specially designed low RR tires will help more. The typical 20% reduction in RR from a low RR tire can result in energy savings of 2% to 10%. Here are some of the Low Rolling Resistance tires on the market, but be aware that some testers find that these tires do not handle as well as normal "sport" tires. Some of the tires on the market are:

Maker	Model	Size	Rolling Resistance Coefficient
Bridgestone	B381	185/70R14	0.0062
Nokian	NRT2	185/70R14	0.0085
Sumitomo	HRT 200	185/70R14	0.0092
Dunlap	Graspic DS1	185/70R14	0.0092
Dunlap	Sp 40 A/S	185/70R14	0.0103
Bridgestone	WS 50 Blizzak	185/70R14	0.0103
Goodyear	Viva 2	185/70R14	0.0104

For comparison, we used identical tire sizes. Please consult your tire dealer for newer information in the size that is appropriate for your vehicle. Ask about the RRC (rolling resistance coefficient, your dealer should have this information).

### Wheel covers:

Unfortunately, the best way to make the surface of the wheel more aerodynamic is to use "moon hub caps," which are a slightly convex, completely smooth cover that fits flush with the tire. Not "baby moons" but the full wheel disks which are quite aerodynamic. These are usually made of spun aluminum, or stainless steel, and can be easily dented. Some use 10-32 self tapping screws designed not to go through into the tire bead. Some use spread clips to fasten. The spread clip ones are a little more prone to coming off if the wheel hits a curb or a pothole, but they have no likelihood of causing air leaks. Wheel disks are a little hard to find, but are worth it.



### Beaded seat covers as an alternative to air conditioning..

Last summer, with the over \$4 gasoline, most local cabbies did not run the air conditioning, but almost all cabbies had a beaded seat cover. These give good air flow if you sit for a while in the seat. They don't make the car cold, but they do make a summer day more comfortable.

### Other air conditioning alternatives:

Open the windows if your speed is under 30 MPH. If you run over 30 MPH, your energy savings will be considerably improved by closing the windows and using the fan or dash vents.

Add a fan to the cabin, generally angled toward the driver's trunk. A cool breeze feels best in your face, but little objects like bugs or dust can be picked up and sent toward your eyes.

### The Radiator opening.

The radiator opening in the gasoline engine car was needed to send air through the radiator to cool the gasoline engine. This opening will continue to gulp air in, forcing the air into a turbulent flow through the front compartment. Blocking off all or most of the front compartment opening is essential. Unfortunately, the easiest way to block the opening is with a flat panel. This is also inefficient, as the aerodynamics of a brick are poor. But covering the opening with a lightweight structure with a bullet nose produces a better way to break through the air. Starting with half round gutters from your favorite home store will be a better alternative. If the nose of your car is not flat, you may take the gutter material, and trim it to make a point in the material so that it more closely follows the contour of the body. You can add an inside miter cut at a few degrees of angle to cover the pointed nose of some designs. Gutters are available in aluminum or galvanized steel, either is suggested. Newer gutters are made of plastic, which is also suggested, but more difficult to find in the half round shape. Most plastics are very easy to cut and to join, so working in plastics is likely the best.

So, I suspect a quick trip to the pages of J.C. Whitney will net some beaded seats and moon disks, as starting points for improving the efficiency and range of the S-10.

### **Chrysler Announces Four Plug-in Electric Vehicles**

Chrysler has already produced over 38000 Gem NEVs (Neighborhood Electric Vehicles). The Gem is produced in six different models. They plan to produce one of the three following plug-in EVs by the end of 2010:

1. The Dodge EV which is an all electric drive with lithium batteries with a range of 150 to 200 miles. This is classified as a sports vehicle.
2. A four door Jeep extended range vehicle also using lithium batteries with the first 40 miles on electricity only and an extended range of 400 miles using a generator driven by an electric motor furnishing the power for the electric motor.
3. A Town and Country extended range EV with the same range as the Jeep EV.

Read more: <https://www.chryslerllc.com/en/innovation/envi/overview/>

### **ELPC Campaign for Illinois Clean Cars Act**

The Environmental Law & Policy Center of the Midwest (ELPC) is currently working on a campaign to bring Clean Cars to Illinois. Illinois has the opportunity to become the 15th state to pass legislation that will ensure all new passenger vehicle and light-duty trucks will be more efficient and emit lower levels of air pollutants. This change will improve public health, save Illinois consumers money at the gas pump and help in the fight against global warming. The Illinois Clean Cars Act is coming up for vote in the Illinois House of Representatives this November, as House Bill 3424. The Act will raise the average fuel efficiency standard for new vehicles sold in the state to 39.6 mpg. ELPC is asking constituents to contact their Illinois House Representative to tell them to vote YES for this bill. Clean Car Organizers was present at the September 19 monthly meeting and gave a presentation about the bill and got petitions signed in support of bringing clean cars to Illinois. ELPC is also seeking volunteers to assist in this effort. Please visit [cleancarsillinois.org](http://cleancarsillinois.org) or [www.elpc.org](http://www.elpc.org) for more information.

### **New Section in Our Newsletter: Book Review**

*James Zukowski*

There is a wide variety of books out there that are useful for EVerS, and for talking with others about our projects and the reasons we do what we do. Starting next month (December), we'll have a new section in our newsletter for the Monthly Book Review. If you have read a book that has some relation to EVs, hybrids, or other alternative energy sources, write a review for the rest of us. We'll include it in a future issue.

It can be a classic "How-To" guide, or something just released dealing with the politics of non-petroleum vehicles. You don't need to have a perfect description. We can help make it look and sound like you would really like it to; that's what editors are for. Also, it doesn't need to be long; two to four paragraphs (or more) would be fine. Send your reviews to: [editor@fveaa.org](mailto:editor@fveaa.org)

### **Help Get NEV Law Passed!**

*Bob Kopach*

There is the possibility that the Illinois Senate will have a chance to vote on making NEV's legal in Illinois during its November session. House Bill 5006 passed unanimously in the House in May. The bill is currently in the Senate Rules Committee and if it makes it out, there is a chance for a vote. Please contact your local State Senator and ask for their support to legalize NEV's. Enter your Zip Code at [www.congress.org](http://www.congress.org) to find your elected officials. HB 5006 is here: <http://tinyurl.com/6capmw>

### **Welcome New FVEAA Charter Business Member ComEd!**



# The future empowers us.

We live on earth together, sharing its resources.

From educating and encouraging our customers to conserve, to using cleaner electric vehicle technology in our own operations, ComEd is meeting the environmental needs of our communities, today and tomorrow.

ComEd is proud to sponsor FVEAA.



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[www.comed.com](http://www.comed.com)

## Upcoming Events

*Ted Lowe*

### Chicago Area Clean Cities Coalition (CACC) Holiday Meeting & Dinner

**Wednesday, December 3rd - 3:30 pm - 7:00 pm**

Mayslake Peabody Estate  
1717 W. 31st Street  
Oak Brook, IL 6052

There is no charge to attend, but you must RSVP by Nov. 26th to [sam@chicagocleancities.org](mailto:sam@chicagocleancities.org) or 312.744.8096. Tentative Agenda:

- 3:30 Welcome & Introductions - 2008 CACC Annual Report and Accomplishments
- 3:45 Illinois Clean Diesel Program Update - Darwin Burkhart, IEPA
- 4:00 Update on Vehicle Technologies - Matthew Stewart, Chicago Dept. of Fleet Management
- 4:45 Keynote Speaker - Congressman Peter Roskam from the 6th District will discuss details of his Energy VISION Act which aims to reduce oil consumption and expand the use of alternative energy sources.
- 5:00 Announcement of CACC Clean Fuel Champion Award
- 5:20 CACC Executive Board Member Election
- 5:30 Dinner

## FVEAA Premier Business Member





**Eco-conversions**

Kenneth Adomaitis  
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 312-924-3442

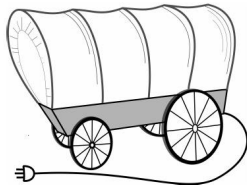
[info@eco-conversions.com](mailto:info@eco-conversions.com)  
[www.eco-conversions.com](http://www.eco-conversions.com)

Eco-conversions specializes in converting oil dependent vehicles to electric. Focusing specifically on luxury vehicles, our goal is to shatter the image of the traditional electric car.

Eco-conversions has partnered with eVionyx, an American company that has developed nickel-zinc rechargeable batteries which can handle over 2000 cycles at 90% DoD. The eVionyx nickel-zinc battery has superior performance as compared to other battery technologies available today. The nickel-zinc cells are superior to lead acid in total power and energy, specific power and energy, and recharge time. It is less expensive and also performs better than NiMH cells. NiZn batteries are particularly suited to high-power applications, such as use in electric vehicles and light transportation.

**FVEAA Business Members**

**Pioneer Conversions, L.L.C.**



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**Electric Vehicle Solutions Inc.**

Electric Vehicle Conversion Components



[www.ev-solutions.net](http://www.ev-solutions.net)

Electric Vehicle Solutions Inc. offers a growing product line of EV conversion adapter plates, motor couplers, and other custom manufactured EV conversion components. We also offer the complete line of ImPulse and WarP DC series wound motors from NetGain Motors.

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www.evautomall.com



**Larry Gray's S-10 EV For Sale**

*Ted Lowe*

Sadly, FVEAAer Larry Gray passed away last summer unexpectedly! His wife Donna wants someone else to enjoy Larry's "Pride and joy" so she has requested us to announce the availability of his S-10 EV to all FVEAAers. Please contact her directly if you are interested.

"Hi Ted,

I am sending this information on behalf of Donna Gray. Below are pictures she has of Larry's truck. Unfortunately, she could not find others of more detail, but I knew Larry and his truck and it is in excellent condition. If you had known Larry, you would know he would have had it no other way. That is Larry standing by the tree and Donna behind the wheel. This is a 1987 Chevy S 10 with a manual transmission. After he stripped it down for conversion prep, the body was completely repainted. The body is in excellent condition.

All (20) power plant batteries were replaced new in August of 2007. K & W battery charger line booster Model LB-20. This vehicle has always been garaged. Must see to appreciate. Please call Donna Gray at 765-471-2643 for more information.

Thanks,  
Steve Bell"



**Netgain Technologies hybrid system used in new Mercedes GLK**

*George Hamstra*

Here is a link to the NetGain Technologies, LLC patent pending hybrid system EAS/EMIS that is being used in the new Mercedes GLK

<http://microsites.mbusa.com/microsite/glk-class/index.do?src=4098&leadSubCat=#/main/sema/index>

RennTech is the company using the system and if you watch the videos you can capture a few images of the red motor made by Warfield Electric for this purpose! RennTech is also using an Alltrax controller, DualPro charger, Optima batteries, and SmartSpark battery equalizer!

Please help RennTech win the competition by voting for them (currently at 39% of the votes)! In my discussions with Jo Borrás he has indicated that you can really feel the extra electric boost (even though the gas engine delivers ~350 H.P.)!

### Charging in Aurora

Todd Martin

I recently had the opportunity to visit Aurora and took this photo of the Electric Vehicle (EV) parking spot at the Aurora Transportation Center (233 N. Broadway). There is a Metra train station and a Pace Bus station there. Next door, there is Walter Payton's Roundhouse restaurant, which looks very fancy. The parking spot features an AVCON rapid charging station as well as 4 regular electrical outlets (120VAC). FVEAAer Joe Downing relies on this space for his daily commute. Let's pass along a big THANK YOU to the city of Aurora for their support!

All our charging locations are listed on the Dept. of Energy's Alt. Fuel Station Locator page:  
[www.afdc.energy.gov/afdc/fuels/stations\\_locator.html](http://www.afdc.energy.gov/afdc/fuels/stations_locator.html)



### Coming Attractions (tentative)

Todd Martin

In December, Mr. "Wolf" from Wolftronix in Champaign IL will present his battery balancer prototype and his Solectria E10 renovation. I will demonstrate the installation of PowerCheq battery balancing modules in my Solectria Force.

In January, Daniel Gabel, from Commonwealth Edison, will speak regarding emerging EV charging station technologies.

**Fox Valley Electric Auto Association  
Membership Application Form**

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

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

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

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

Email: \_\_\_\_\_

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

Comments: \_\_\_\_\_

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

**Membership Types and Annual Dues**

The FVEAA offers these types of memberships (please circle your choice):

Individual	\$ 15
Family	\$ 20
Business	\$ 100
Premier Business	\$ 250
Charter Business	\$ 500

**Newsletter Delivery Types (please circle your choice):**

No Newsletter	\$0
Electronic Only	\$0
Postal Mailed Only	\$15
Postal Mailed and Electronic	\$15

**TOTAL DUE:** \_\_\_\_\_

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

**FVEAA**  
**PO Box 214**  
**Wheaton, IL 60187-0214**  
Attn: Membership