

Fox Valley Electric Auto Association

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May 2013 FVEAA Newsletter

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

Note: Meeting Date and Place This Month

Next Meeting

May 17, 2013

Community Christian Church

1635 Emerson Lane, Naperville, Illinois 60540

at the intersection of Ogden and Rickert Drive in Naperville

Also called the "Yellow Box." We'll meet in the little theater west side, 1st floor

DOORS OPEN 6:30 p.m. MEETING STARTS 7:00 p.m. ENDS 9:15 p.m. Directions:

[Community Christian Church](#)

Agenda

- 6:30 Doors Open
 - Ford Ride n Drive starts
 - Wheego Ride n Drive starts
- 7:00 Call to order - Welcome
- Committee Reports
- Old business / New Business
- BUY OR BUILD?
 - The "Ford Go Further Tour" Presentation
 - Green Wheels USA - presentation of the Wheego, and DBT EVSEs
 - Break - Ride n Drives
 - How the FVEAA converted a Porsche 944 to Electric
- Close

- FVEAA Board Meeting 9:15 p.m. - 9:45 p.m. Officers and Board Members Only

Hi EVeryone,

LAST MONTH

Last month we presented a great combination of alternative fuel technologies.

In the FUTURE OF TRANSPORTATION I showed how the mixture of fuels will change through the year 2050. Electrics rule! Including a brief overview of the plug-in vehicle market, news, and the recent Department of Energy projections on how Light Duty Vehicles will be powered through 2050,

Wallter Knake, VP of Fleet Development with NGV RePower

Presented on how his company converts diesel engines to run on compressed or liquefied natural gas.

Dana Myers - President of Myers Motors

Then Dana Myers, President of Myers Motors in Tallmadge Ohio held a discussion on "Chicago's 200 MPGe, Affordable, Electric Car Opportunity." He and the guests who attended were very impressed with the FVEAA's electric vehicle brainpower in the room and they enjoyed the excellent dialog with the audience on the potential for building a new electric vehicle industry here in the Chicago area. We really appreciate Dana making it all the way from Ohio, and Bob McKee from Lake Zurich, and Cynthia and Alex from Des Plaines despite the rainy weather and regional flooding.

BUY or BUILD?

This is the question we'll tackle at the upcoming meeting on May 17. For many years before 2010 the only way to drive an electric vehicle was to dig deep and build it yourself, or pay to have someone build it for you. And today despite having well over a dozen electric vehicles on the market, there are still many technically savvy folks who want to build an electric vehicle from the ground up. So at this meeting we'll look at **both** approaches - Buy or Build.

BUY

Wheego Ride 'n Drive and DBT

We have two companies bringing electric vehicles to the meeting for quick presentations and ride 'n drives: The first one is Wheego. Few people have ever heard of the Wheego electric vehicle, and DBT charging stations, but the DBT is the second largest charging station manufacturer, behind ChargePoint. Dennis Snower of Green Wheels USA <http://www.greenwheelsusa.com/> will be here to talk about the charging stations, as well as show off a Wheego.

Ford ride 'n Drive

Representatives from Ford Motor Company will be arriving at 6:15 from their "Ford Go Further Tour" highlighting plug-in models of their eco-friendly vehicles- including,

· Focus Electric · C-MAX Energi · Fusion Energi

Ford also has their C-MAX Hybrid, Fusion Hybrid and Escape with EcoBoost but we'll only be "focusing" on the three plug-in hybrid electrics listed above.

BUILD

The Porsche 944 Conversion

Back in 2007 the FVEAA tore down a fully functioning Porsche 944 and converted it to electric for then-owner Eric Schoenfeld. Ted Lowe was the project manager on the conversion which took about 6 months to complete. Members worked on the car every weekend from June to January which was a truly monumental effort, but it generated excellent results. Steve Kaufman now owns the Porsche and due to health issues, is looking to sell it. But we'll cover the basic conversion process, as the first in a series of monthly presentations on build-it-yourself electric vehicle projects.

Converted 1984 Porsche 944 Electric



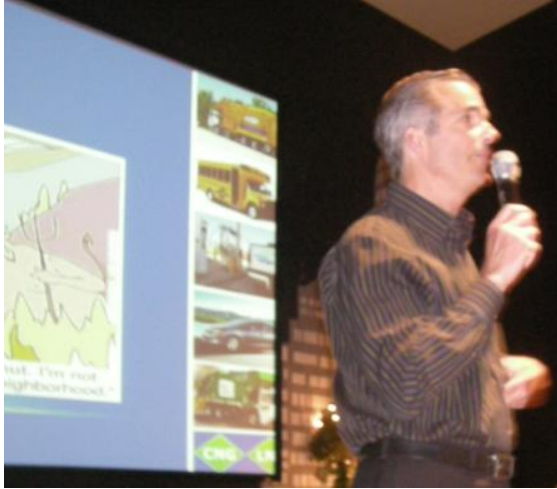
So come and drive some commercially available electric vehicles on the market or listen to a presentation on converting the Porsche 944 to electric. Something for everyone.

See you Friday May 17 at CCC.

Sincerely

Bruce

Photos from Last Month



Walter Knake VP of Business Development for RePower



Dana Myers, President of Myers Motors



Bob McKee of McKee Engineering and Bil Becker of Aerotecture in the audience



Myers Motors Concept Car



RePower - Converted Diesel to Natural Gas Vehicles

Game Changers

There seems to always be some news in the world about EV's and other alternative fuel vehicles, but seldom could individual news pieces be thought of as "Game Changers." I am referring to single decisions or single actions which will very substantially change the alt-energy world. In the past month I have run into three such possible game changers.

1) J-CESR

I was fortunate to be invited to a really stellar overview of the J-CESR program at Argonne National Labs. George Crabtree and Jeff Chamberlain discussed the new Argonne initiative which is commonly pronounced "J-Caesar". The primary focus of the Joint Center for Energy Storage Research is to accelerate battery research and development for vehicles and power grid applications. The new, state-of-the art facility will be formed from the previous Battery and Energy Storage Hub. Most of the funding is from a 120 million dollar US grant, although the State of Illinois has also promised 5 million dollars to help this research.

George Crabtree is a Senior Scientist at Argonne, an Argonne Distinguished Fellow, and Associate Division Director in the Materials Science Division. A well known scientific author of more than 350 articles, he has won the University of Chicago Award for Distinguished Performance at Argonne twice, and the U.S. Department of Energy's Award for Outstanding Scientific Accomplishment in Solid State Physics four times. He will function as Director for JCESR.

Jeff Chamberlain will be the Deputy Director, also a widely known research scientist at Argonne, also with a broad knowledge in the field of energy storage.

The planned outcome of the JCESR program is fairly easy to describe in a few goals. The primary program is the **5-5-5 program**, designed to:

- Produce batteries in vehicles that go five times farther than current Li-ion technology
- Batteries should have a 5 times greater energy density
- Batteries should have 1/5 of the cost of current batteries.

And, you likely guessed the timeline. Within 5 years.

Argonne is in a unique position to develop this project due to three legacy issues:

- A comprehensive library of fundamental knowledge
- The existence of pre-commercial prototypes for transportation and electric grid
- A new paradigm of battery development to build from the bottom up, a system centric solution, with end-to-end integration.

It should not surprise you that five major universities, and five national laboratories have signed onto this program, along with four private sector partners.

Few details of the program have been released, but what did get mentioned is stunning:

- A move from a single valent Li+ basis to multivalent ionic base. Mg⁺⁺ or Y⁺⁺⁺ were mentioned. Such multivalent cation intercalation has much promise as a more energy dense substrate.
- Some chemical transformation, LiO₂, LiS, and Na-S batteries have promise, among others.
- Getting rid of battery electrodes, and simply using a liquid solution or suspension.

As an economic impact of Argonne leading the JCESR research, several spin-offs were discussed.

- A 35 million dollar Illinois Funded lab building
- Several Energy Frontier Research Centers
- Energy Innovation Hubs
- ARPA-E

This one hour program was a real eye opener. If the 5-5-5 program is even partially successful, it will definitely be a game changer in the alternative energy world as BEV vehicles become much less expensive and have much longer ranges. You can read more about J-CESR at:

<http://www.icesr.org/press-room/news-coverage/>

2) Compressed Natural Gas

The second game changer in the world of alternative energy is, or will be, the emergence of Compressed Natural Gas (CNG) delivery. In the past, few CNG filling stations existed, and was best suited for the world of local delivery vehicles, both cars and trucks. Slow fill times meant overnight refueling, expensive stations meant only fleet owners with specific needs, and poor bi-fuel compatibility meant poor acceptance. With multiple major distributors poised to offer CNG filling in areas near interstate highways, perhaps that will change. The fact that CNG is the cleanest of all the vehicle powerplants is not lost on corporate boardrooms, and with increased availability of filling, this will perhaps again tip the balance between the alternative power choices.

<<Think of how convenient it would be to fill your vehicle with CNG in your garage and also power your house with solar panels on the roof, and electricity from natural gas fuel cell technology. The utilities and oil companies however would not be very happy!>>

3) Fracking

The third game changer is the fracking issue. Fracking, or hydraulic fracturing, is the pumping of fluids deep into the earth to break rock layers with the hydraulic fluid. Breaking the rock layers allows natural gas, petroleum, and other substances to be extracted by a well with greater ease.

While fracking has gone on on a small scale for some years, what is proposed is a much greater scale. Many thorny issues need to be decided, including:

- Who would regulate fracking, individual states or federal oversight?
- Would our neighbor to the north, Canada, be a greater force than it is now.
- What hydraulic fluids can be used for this purpose.
- What controls need to be placed, and what are the long term effects on soil and water.

I attended a program put on by the Chicago Area Green Cities Coalition in collaboration with SCARCE (*School & Community Assistance for Recycling & Composting Education*) A large number of industry executives, and a number of very knowledgeable people were present. Our own Rich Hirschberg presented on electric vehicles. I had the good fortune to sit down for lunch with a gentleman I did not recognize, but turned out to be Ira Siegel, the the Automotive Correspondent for the Chicago Sun-Times and Program Coordinator for Automotive Technology at Moraine Valley Comm. College. We had a very interesting talk about several points, but he seemed to also feel that the three points were all very significant points that could very significantly affect the balance of the alternative energy sources available

Stay tuned, this is starting to get, as Arte Johnson used to say, "VEEEERRRY Interesting."

Welcome

President Bruce Jones opened the meeting at 7:05 p.m. and had guests, investors, entrepreneurs and inventors introduce themselves.

Old Business - None

New Business - None

Committee Reports - None

Mr. Jones then presented results of the electric car competition on 4/13/2013 that FVEAA's Rich Carroll helped organize for the National Science Bowl Regional Run-Offs at CNH Burr Ridge, Sponsored by DOE / Argonne National Laboratories

He covered PEV News, including Tesla's profitable first quarter 2013 results, Tesla news, other milestones that have occurred in the industry over the last month, including Fiat and BMW offering limited loaner rental cars with the purchase of an electric vehicle, a novel idea to overcome charging limitations of EVs on occasional long trips.

PEV sales and trends in North America have had steady overall increases in sales, per energy trends and forecasts according to the Department of Energy, NREL and Argonne, in their new Transportation Energy Futures study which provides an assessment of ways to reach deep cuts in petroleum in the transportation sector.

Assuming the most favorable conditions and infrastructure buildouts, by 2050 Plug-in Hybrid Electric and Battery Electric Vehicles will represent 57% of light duty vehicles (LDVs) The LDV's share of the overall market will grow from 55% today to 75% of all vehicles by 2050, therefore $(.75 \times .57) = 42\%$ of **all vehicles sold are projected to be electric by 2050**. And 84% of LDVs and 64% of all cars will be electrified if Fuel Cells are included in the projection.

RePower - Converting Diesel Engines to Natural Gas

Walter Knake, VP of Fleet Development at NGV RePower, discussed the marketing and sales of conversion of fleet diesel engines to natural gas. Their company does the conversions in Missouri. Walter covered the following topics

- Conversion Basics
- Mixed Fuel vs. Dedicated Conversions

- EPA Regulations
- Market Offerings
- Economic Payback
- Price Risk
- Case Studies

Thanks Walter for an informative presentation!

Break

Myers Motors

After the break Dana Myers, President of Myers Motors presented “Chicago's 200 MPGe, Affordable, Electric Car Opportunity.” This outstanding presentation and the ensuing discussion generated a lot of feedback from the audience. Dana said the two most wasteful habits affecting the world’s consumption of transportation energy are

- 1) overweight and oversize cars and
 - 2) chronic underutilization of vehicles
- of which about 95 percent comes from petroleum. Using vehicles that fit driving patterns would greatly improve vehicle utilization and significantly reduce the energy intensity of personal transportation.”

The discussion then revolved around the production of a three or four wheeled electric vehicle in regional manufacturing plants, like in the Chicago area. Such low cost, regional centers could produce high quality, 200 MPGe vehicles that people could afford. Stats show 80 % of the people need a single car that can run 80 Miles top range.

The meeting was extended for another 45 minutes to handle all of the questions and feedback from the audience, in a truly interactive presentation

Thanks Dana!

The meeting ended at 9:55 p.m. Whoa!

Membership Form

Ted Lowe

FVEAA Membership Application Form

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 ? _____

Member Types and Annual Dues (Please circle one)	Newsletter Delivery Types (Please circle one)
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Individual	\$15	No Newsletter	\$0
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Charter Business	\$500		

Total Due from Both Columns:

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

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Attn: Membership

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NetGain Motors, Inc.

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