

Charged Up



ELECTRIC VEHICLE ASSOCIATION OF SAN DIEGO (EVAOSD)

An affiliate of the Electric Auto Association (EAA)

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Regular Meetings: Our meetings times are changing. For this summer we are on the 4th monday of the month.

Location: California Center for Sustainable Energy
8690 Balboa Ave., Suite 100 · San Diego, CA 92123

Place: Main Conference Room

Next Meeting: Monday, Aug. 23, 2010 @ 7:00 p.m.

Program: General Meeting

This month is at the CCSE.

THE DATE FOR THIS MONTH! MONDAY, Aug. 23, 7:00PM

From the President:

We just had the kick off meeting for the grant that studies the second life application of lithium batteries. I sat in a room with enough brain power to build a time machine. The group of people involved are brilliant folks from every discipline that will determine the pioneering beginnings of making the second life of cells a reality.

The concept is that once a battery is used for its first life, say an electric car, it will be placed into some kind of home appliance that will help offset home energy costs and reduce grid demand. Just because the batteries are below where the vehicle manufacturer deems it bad, doesn't mean they don't have a lot of life and energy left.

Just as the meeting got rolling, we quickly realized there are a TON of questions that have to be addressed. Simple things like how do you chop a battery pack out of a car and expect to integrate it into a box that might hang on the wall of your garage. That battery pack was specifically designed by 200 engineers to work in one particular application. So figuring out how to make it work in a different application is tough. Other questions like when will the power inside be used? Does the power company turn it on when they need it or does it turn itself on to help balance when your A/C first turns on? etc...

It's going to be an interesting adventure and large amounts of knowledge is going to be gained. Now if I can just plug my used lithium battery into a magic box and see how much life it has left!

Inside this issue:

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Clean Transportation: Green Meets Greenblatt

There is a rumor going around Century Park these days that the beginning is near. That is, the beginning of the transportation revolution! This July, we are slated to hit the three-year anniversary of SDG&E's Plug-In Hybrid Demonstration project. As the Clean Transportation program approaches this significant milestone, its team members look upon new frontiers in the rapidly changing world of transportation innovation. SDG&E's Clean Transportation Specialist (and a member of YES), Jason Greenblatt, presents the facts about our changing automobile industry.



Jason Greenblatt sets his sights on charging with the newly standardized EV Plug

To date, SDG&E has roamed over 70,000 miles on our own PEVs. Though we've yet to adopt fully electric vehicles in our own homes, the program has proven to our company, community and employees that electricity has a rightful place on the road along with gasoline and diesel. Now, we're all engineers – so let's do some numbers. In brief, a full 5-kWh charge saves roughly half a gallon of gas during a normal commute. The Energy Information Administration (eia.doe.gov) estimates that there is roughly 36-kWh of energy content per gallon of gas. Now let's pick up our favorite tool, not the slide rule but the back-of-an-envelope calculation. Take 18-kWh (for a half gallon of gas) and substitute 5-kWh of electricity. That's nearly a 75% conservation of energy by using a different fuel and technology. The design of current hybrid vehicle conversions makes for less than an "apples to apples" comparison so let us talk All Electric Vehicles: Modern EV's will use about 1-kWh to drive 4 miles on average. An equivalent gas gallon amount of electric energy, 36-kWh, will drive about 145 miles. In a modern gas car, that 36-kWh gallon of gas would go 20-30 miles. Which would you choose if you had a choice?

The numbers have clearly made a good argument. In the winter of 2010, SDG&E and select individuals will

begin receiving their Plug-In Electric Vehicles (PEV's) including the Nissan Leaf and the Chevrolet Volt. To the utility industry's interest, the arrival of these vehicles turns the key for a new industry in San Diego – the first public

push of electric vehicle charging stations. San Diego and a national project called www.TheEvProject.com will be making history by installing public charging stations for PEVs. Stations using 240 volts will be the backbone of the project with nearly 1500 sites and another 60 running on 480 volts. Moving away from hindrances of the 90's we will see standardized fueling infrastructure and connections for vehicles. Electric fueling will be soon become ubiquitous just like gasoline pumps.

Speaking of change, the electric vehicle industry has now ventured deeper into new frontiers of the transportation market. Jason Greenblatt recently test drove one of Balqon's concoctions, and found that their electric semi-truck packs quite a punch, pulling up to 60,000 pounds. Last year, Greenblatt helped lead a small demonstration which loaned this vehicle to one of our Commercial Industrial customers over three days. With additional positive feedback regarding the vehicle's performance, Greenblatt's passion for this grand feat of the transportation revolution led him to bringing Balqon Corporation and their semi-truck to this year's Energy Showcase Awards. This was the first year in quite some time that a vehicle manufacturer occupied a vendor spot in this energy-based show.



Heavy Metal! Jason drives an EV semi-truck

"People enjoy challenging me about the emissions of electricity generation compared to gasoline," says Greenblatt. "I urge you to look at the

EPA link below. When you input a zip code, you will see a region's emissions mix. Here in San Diego we are doing well – less than 0.75 lbs. of CO₂ per kWh of electricity marginally. When considering roughly 25 lbs. of CO₂ emissions per gasoline gallon, things get interesting. Is your back of the envelope turned on? Go ahead and pencil out the emissions per mile with the numbers I have given you."

Greenblatt has been involved with electric vehicle testing since he was very young. He was self-inspired at the age of 4 when he performed a water submersion test on a toy electric car. Nobody was injured. By the age of 25 and after graduating from Drexel University with a B.S. in Mechanical Engineering, Greenblatt moved to San

Diego and became fully energized by Electric Vehicle culture by helping friends convert their combustion engine vehicles into EVs. By age 27, the aspiring auto-tuner took his own advice and became a proud owner of his own highway-capable Volkswagen Rabbit electric car. At 20-miles-per-charge, Greenblatt has scored over 13,000 miles in the Rabbit to-date.

Visit Y.E.S. for more info: <http://home.sempranet.com/cop/YoungEngineerSociety/default.asp>

Solar Beetle Owner Kicks Gas

Thursday, 15 July 2010 14:46 Chuck Colgan



Sometimes it's hard to wait for corporate America to catch up to consumer desires, so people take things into their own hands by converting what's available into something they really want. Such was the case for Vickie Randle, who just couldn't get by without the electric vehicle (EV) of her dreams, so she decided to build her own "solar Beetle," a 2000 Volkswagen converted from gas to all electric. And it deserves the name solar, because Vickie charges up at home with 20 photovoltaic panels that power her home.

Vickie is a member of San Diego's Kick Gas Club, a small group of EV enthusiasts who conduct conversion workshops and, in their spare time and weekends, take on club member's conversion projects one at a time. Her solar Beetle has a range of 15-20 miles, which fits into her daily commute of only

five miles from home to work, and plugs into a standard 110- Volt outlet.

"I wanted to get an electric vehicle no matter what the range, as I think it is important to show the world EVs are a priority," Vickie said. "I'm voting with my dollars and not supporting an energy system I disagree with."

The cost to convert a car varies widely, but Vickie reports spending about \$13,000, saying, "It can be more or less than that, because there are so many variables one needs to consider: their range of travel, weight of the car they want to convert, if you want to pay someone to do the conversion and if you go with used or new parts."

Leading by example, Vickie is proud of her bright yellow and silver solar Beetle, adorning it with stickers and information sheets and taking it to community events

where she promotes EV technology. CCSE salutes Vickie's dedication to sustainability in our community.

For information about the Kick Gas Club, visit their website. You can see what others have done nationwide at EValbum.com where owners post their photos, performance data, expenses and parts used.



From the DIY Electric car blog: Prius battery re-build

Posted by: "Mike.B" koibuff@yahoo.com koibuff

No need to purchase a "How to Guide" - There plenty of folk at www.priuschat.com , who will help you with any questions regarding your Prius battery. Here's a link to a DIY replacement: <http://birdbird.org/cars/prius/battery-swap.html>

Our project car had two bad battery modules, we replaced them ourselves and now the car is running perfectly. We've also been experimenting with add on items to the Hybrid Battery as well after that initial repair. Photos of the Prius Project are at: www.flickr.com/photos/mbarkley/sets/72157623998008161/

If anyone here has questions about a 2001 to 2003 Prius Battery, feel free to ask, or join up with the priuschat forums.

What we've learned so far with the 2001 Prius:

1. Copper buss bars like to corrode, therefore we cleaned each one with a wire brush bench grinder and coated them with No-Ox-ID A, and no longer have corrosion issues. Some copper buss bars we put on a separate pack of Prius modules as an experiment, corroded again just after a few months without the No-Ox-ID A coating.
2. Battery modules go bad (dry out from heat/overcharging) in the pack, but usually only a few seem to get sacrificed for the sake of the others. We had to replace 2 modules out of the 38.
3. Heat is your enemy - During the summer months, park your car in shade.
4. Install a solar panel to trickle charge/assist your aux 12volt battery. The less the HV Battery has to work to keep it charged the easier it is on your HV Battery.

Changing Your Registration to Electric

by Gerald Sullivan

You just finished converting your late model gasoline car to electric and have been enjoying the quiet, no gas, smog-free motoring. You figure that your troubles are over. Just wait until you get a notice from the DMV that your registration is due and it requires a smog test. No Worries, you figure. It can't possible fail as the car does not pollute. Well you will fail not because you are no longer a gross polluter, but you don't have all of the necessary equipment. Remember, you removed the gas tank along with the leak-proof cap, and the charcoal recovery tank. Strike one. You also removed the engine along with the EGR valve. Strike two. Also removed was the exhaust system with the oxygen sensors, catalytic converters, and the all important tail pipe. Where else can the examiner stick his sensor? Strike three.

To eliminate your requirement for the bi-annual smog test you must get your registration changed from G (for gasoline) to E (for electric). This used to be accomplished with a simple visit to your friendly (?) DMV. It seems that too many smoggers were circumventing the rules by changing to 'E' that the ARB has changed to new rules. You now need to have your vehicle inspected by a Bureau of Automotive Repair referee. A Google search for 'VIN 2020-006 Changing the Engine/Fuel' will direct you to a document with the necessary phone numbers, etc.



Basically you need to call for an appointment at 1-800-622-7733. In the San Diego area you may choose from locations at three Community Colleges. They are Cuyamaca, Southwest, and Mira Mesa. Obviously pick one within your EV range. Make a preliminary trip in you gas guzzler as the location on campus might be hard to find. The referee was very cordial and the examination went quickly. Probably because I didn't have to be argumentative. After filling out paper work, and getting signatures, he disappeared for a short while and came back with a very official sticker that went on the driver side door post. He mentioned that I should verify this with the DMV. There was no cost!

Calling the DMV I found that no appointment was needed for the examination by the officer. After a little paper work, I was directed inside and took a number. After about a 90 minute wait I was called to a window and after a little typing on the keyboard, it was announced that everything had already been entered by the BAR referee.

What could I have done to make this a little easier? Well, the secondary visit to the DMV is probably a good idea. I would however have made an appointment, and arrived ahead of time for the physical vehicle examination. One of the biggest questions to ask the clerk is to clarify that the fuel type is no other than 'E'. For if it is still 'G' or has been changed to 'K' (hybrid), then you will still have to go for a smog test and it is guaranteed that you will fail.

Slightly Odd News:

Nissan Leaf's space-age sound to warn pedestrians

"The system actually only operates up to about 20 mph," says Nissan spokesman Brian Brockman in an email to Drive On. "After that, the car generates enough tire noise, etc. to create sound for pedestrians to hear. The two sounds...are actually a forward sound and a reversing sound. The forward sound has varied frequency based on acceleration/deceleration to make it easily identifiable as a vehicle to pedestrians. The backing sound is the intermittent tone, which is easily identifiable as a vehicle backing up."

Don't like the noise? Nissan installed a switch in the car that allows drivers to turn it off, but that feature is raising concerns from groups representing the blind.

[Consumer Reports says](#) the sound was four years in the making, and was developed with the help of acoustic psychology experts at Vanderbilt University, a Hollywood sound studio, and others. The sound had to be audible to a wide range of people, especially old people and the hearing impaired. Nissan says it went through 100 different sounds before settling on one.

Joseph's Comment: Awesome, this first thing I would do is change that sound to, well, let your imagination go. Banjo songs? Squeaky hamster wheel? Boss 302? Classic cartoon jalopee noises? Bubbles? Kazoo band? The list could go on forever!

EVENTS:

Street Smart San Diego at a Glance
 Sunday, Sept. 12, 2010
 10 a.m. to 4 p.m.



Location: CCSE, 8690 Balboa Ave., Suite 100
 San Diego, CA 92123

This free, high-profile public event features electric, hybrid and other alternative fuel vehicles. Street Smart San Diego attracts extensive media coverage each year that highlights your organization as an event partner and positions your business as a pioneer on the path to energy independence. Visitors to the 4th annual Street Smart San Diego event will have the opportunity to check out alternative fuel vehicles, learn from alternative fuel experts and meet with energy-savvy professionals. The day includes test drives, exhibitors, meet carbon free girl NASCAR driver Leilani Múnteras, and more! For more details about the event please visit [Sustainable Energy Week](#)



www.evvalleyrally.com

As part of the Coachella Valley's continuing efforts to position itself as a center for sustainability, a collaborative has formed to promote electric vehicle infrastructure and to prepare for the valley for the growing electric vehicle market. To kick off this effort a weekend of activities has been planned from October 15 – 16. An Electric and Alternative Fuel Vehicle Fair will be held on October 15th at the Palm Springs Convention Center. The following day the first Electric Vehicle Valley Rally has been scheduled for Saturday, October 16th. You are invited to participate in both events.

Electrifying Achievement!

-invitation-

ONE YEAR ANNIVERSARY

KICK GAS CLUB and CO-OP



RSVP: QUEVEDO@COX.NET

Party Location:

Kick Gas Club and Co-Op

815 University Avenue

San Diego, CA 92103

Sunday, August 29, 2010

12:00 noon to 5:00 p.m.

Food and EV workshop videos

Free rides in Co-Op EV conversions

Electric Auto Association (EAA) Membership Application Form

Fill out this form, attach a check, money order or use PayPal, in US funds only, payable to 'Electric Auto Association'. CE = Current EVents newsletter

e-CE [] \$35 USA & other Countries [] \$25 Student [] \$25 Senior (>65-USA/Canada only) birth year []

paper CE [] \$45 USA [] \$48 Canada [] \$52 World [] \$29 Student [] \$29 Senior (>65-USA/Canada only)

[] \$120 (supporting level-1) [] \$240 (supporting level-2) [] \$500 or more (high voltage) [] do not list my name

I support the _____ EAA Chapter (additional chapters, \$10 each) _____

[] (\$10each) Additional Chapters or Special interest group (other than the one that comes with the membership)

You can fold this form as indicated and mail it with your payment enclosed. Use tape to seal the form, on the sides, before you mail it or send an e-version of this form, through PayPal using http://electricauto.org/eaamembership.html

[] New Member [] Renewal

Name [] email []

Mailing address (Apt. #) [] Home phone []

Mailing City, State & Zip-8 [] Work phone []

[] Electronic version of Current EVents, paperless only, link sent by email, if your membership was for the e-version, that is what you will receive

[] Do you own or [] Lease an electric vehicle (plug-in) [] production [] conversion [] bicycle [] hybrid or [] None

please include miles driven and type of vehicle []

All information in this application is for the exclusive use of the EAA and not sold or given to any other organization.

Please identify your primary areas of interest relating to the EAA (check as many as your wish)

[] Owner/Driver [] Hobby/Builder [] Professional/Business [] Competition (Rallies, Races, Records [] Plug-in Hybrids

[] Environmental/Govt. Regs [] Social (Rallies, Shows, Events [] New Technology & Research [] Solar & Wind Power

[] Promotion & Public Awareness of EVs [] Student or General Interest [] Electrathon/Bicycle/Scooter/Other

The Electric Auto Association is a non-profit, 501(c)(3) for the promotion of electric vehicles. Your donations are tax deductible and with your membership you will receive the EAA publication, "Current EVents". All information and statistics in this application are for the exclusive use of the EAA and is not sold or given to any other organization or company. Your membership dues include a percentage goes to the EAA Chapter you support for public Electric Vehicle promotion EVents like rallies, shows and EV rides.

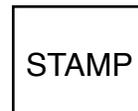
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Please make check or money order payable to: EAA and reference EVAOSD. Send this form and payment to: Lloyd Rose, EVAOSD Treasurer; 2755 Dos Aarons Way, Suite A, Vista, CA 92081

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