

Charged Up



ELECTRIC VEHICLE ASSOCIATION OF SAN DIEGO (EVAOSD)

An affiliate of the Electric Auto Association (EAA)

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Vice President: Wistar Rhoads

Treasurer: Lloyd Rose

Program Chairman: Joseph S. Gottlieb

Newsletter Editor: Staff

Webmaster: Russ Lemon

Librarian & AV: Lloyd Rose

Regular Meetings: Our meetings are on on the 4th monday of every month (except December).

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

Place: Main Conference Room

Next Meeting: Monday, Mar. 26, 2012 @ 7:00 p.m.

Program: Multiple Guests

Presidents Rant:

This is a quick one for the CAR2GO people. Let me first say, it was very cool to park my leaf at balboa park to charge up, hop in a car2go car and head to the san diego library. The car was small, the drive system isn't as refined as the mainstream builds (leaf, volt, tesla, etc), but it worked well. It topped out at 65MPH. It was peppy at highway speeds, had great acceleration from 0 to 30 MPH, and handled ok. Now, on to the issue! Before I went to the San Diego library, I went to Mission Bay. I stopped down by Hospitality point to meet a friend. I wanted to leave the car there so I would not be charged for anymore time. I would take the gamble that someone else might want to rent it.

According to the map on the car2go website, it says that area is in the operating area, but when I went to "check out" of the car, it told me I wasn't and I couldn't leave it there. I called car2go and during a quick heated discussion they informed me that the map on the website needs to be updated. I was frustrated, but one can expect a few growing pains. What made up for it was down in the city, once I parked and checked out of the car, I noticed there were a BUNCH of them all around the city. Even if someone rented mine before I was leaving the library, there were three others just a few blocks away. It was very cool. Thanks car2go!

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From the Treasurer

2013 NISSAN LEAF UPDATE MORE RANGE AND NEW HEATER

Opening up sales of the vehicle to all 50 states and increased vehicle improvements will probably increase the sales volume and popularity of an already successful "All Electric" vehicle. The following brief article by Sebastian Blanco tells the story.



Posted Mar 20th 2012 10:05AM

From what we know today, pretty much everything about the all-electric NISSAN LEAF is getting bigger and/or better in 2012. From availability in EUROPE to 50 – State Availability and [production](#) in the States, it's clear NISSAN is planning big things for its EV this year. Now, Nissan's Mark Perry has told the *The Detroit News* that the 2013 Leaf will get serious improvements when it launches later this year, including a better heater, a darker interior option and leather seats. The new Leaf will be made in Smyrna, TN.

The Leaf's new heater is going to help with range, even if it wasn't designed to beat the government's mileage test, as it were. Perry tells the Detroit newspaper, "You may not see much change on the EPA rating, but in cold-weather conditions you may see 20 to 25 miles of improvements."

This brings us to the big question: will Leaf sales also increase in 2012? In some months of 2011, Nissan sold over 1,000 Leafs. There are annual variations in sales patterns, and Perry tells *The Detroit News* that he expects Leaf sales to cross 2,000 a month in the U.S. some time this summer, a prediction that sounds reasonable given that the model will now be available in all 50 states.

Another one bites the dust!



Bright Automotive, a plug-in hybrid electric vehicle manufacturing start-up backed by GM, is giving up on securing an Energy Department loan and is shutting down operations, *The Detroit News* reports. In a letter, Bright

executives called the DOE loan program a "debacle" and "so outlandish that most rational and objective persons would likely conclude that your team was negotiating in bad faith." Chrysler also announced earlier this month it was abandoning its application for a \$3.5 billion loan.



Is this another pipe dream? Let's hope not!

Lithium battery startup company Envia Systems plans to announce tomorrow, at the ARPA-E conference, development of a high energy density lithium battery (400 watt-hours per kilogram) which could be the tipping point enabling long range affordable electric cars. Long range electric cars have been possible for quite awhile, Solectria built one in the 1990's, and Tesla Motors has been selling the Roadster and will soon be selling the Model S with battery packs sufficient for 200-300 miles of all electric driving range. What Envia brings to this is higher energy density and lower cost, a combination which would make for an affordable, long range, electric car with a 300-mile range and a price around \$25,000 to \$30,000.

The company is a Silicon Valley startup founded in 2007, headquartered in Newark CA, and with a prototyping and manufacturing plant in Jiaxing China. The company received a \$4 million ARPA-E award in the High Energy Density Lithium Batteries program, as well as significant amounts of private investment from GM Ventures and others.

Envia's technology is a new cathode design for lithium-ion batteries which the company calls the High Capacity Manganese Rich (HCMR) cathode. It's claimed the design has excellent stability, long lifetime in charge cycles, and a high per cell voltage. The company has also designed anode and electrolyte materials required to build complete batteries. Batteries have a positive terminal (the anode), a negative terminal (the cathode), and an electrolyte mix between the two. Electrons move between the anode and cathode through the electrolyte.

Envia's cathode design is due in part to technology the company licensed a year ago from Argonne National Labs.

The result is a battery that stores 400 watt-hours of electricity per kilogram, compared to the 100-200 watt-hours/kilogram for today's lithium-ion batteries. Envia says its battery cell costs could be as low as \$125 per kilowatt-hour. It's difficult to get accurate prices automakers pay for batteries, but it's thought to be in the neighborhood of \$5-600 per kilowatt-hour. Together this means Envia has achieved a breakthrough of over twice the energy density of today's batteries, at 1/4 or less the cost.

If Envia's battery development works out, and is commercialized, the dramatically higher energy density would mean a dramatic jump in electric car range without sacrificing vehicle weight, size or cargo capacity. It would also represent a dramatic decrease in battery pack cost, letting automakers reduce vehicle prices. However it's not quite as dramatic a jump in energy density as the [1000 watt-hours/kilogram announced hoped for by PolyPlus](#).

A clarification of the charging terminology (from Joel Pointon at SDG&E)

Proposed SAE Charging Configurations and Ratings Terminology

- ▶ **AC L1:** 120V AC single phase
 - Configuration current 12, 16 amp
 - Configuration power 1.44, 1.92kw
- ▶ **AC L2:** 240V AC single phase
 - Rated Current \leq 80 amp
 - Rated Power \leq 19.2kw
- ▶ **AC L3:** TBD
 - AC single or 3 ϕ ?
- ▶ **DC L1:** 200 – 450V DC
 - Rated Current \leq 80 amp
 - Rated Power \leq 36kw
- ▶ **DC L2:** 200 – 450V DC
 - Rated Current \leq 200 amp
 - Rated Power \leq 90kw
- ▶ **DC L3:** TBD
 - 200 – 600V DC ?
 - Rated Current \leq 400 amp?
 - Rated Power \leq 240kw?

**Voltages are nominal configuration operating voltages,
not coupler rating.**

**Rated power is at nominal configuration operating voltage
and coupler rated current.**

Upcoming of EVents

It's just the beginning. Earth month is coming! We are going to have tons of EVents to participate in:



My company is helping with the 2012 Eco Fair at La Jolla Country Day school, and we are looking for other companies/EV folks who are interested in having their own booth (no charge). Attached please find the flier for the event. Please let me know if you would be interested.

Thank you,

Melanie Enriquez - Administrator / Marketing Assistant - MA ENGINEERS - 5160 Carroll Canyon Road, Suite 200
San Diego, CA 92121 - P 858.200.0030 | F 858.200.0037 - menriquez@ma-engr.com - www.ma-engr.com



I wanted to let you and the San Diego chapter members know about an EV event we are hosting on Tuesday, March 27.

Please see attached for our poster and more information is also at our website --

<http://stellarsolar.net/san-diego-solar-events/electric-vehicle-hybrid-bbq.html>

Michael Powers - Stellar Solar - Phone: 619-778-8443 - Fax: 206-888-6474 - Web: www.stellarsolar.net



San Diego LEAF electric car meeting: Saturday, April 7, 2012, 9am-12pm

Hamburger Factory restaurant - 14122 Midland Road - Poway, CA 92064 - Phone: 858-486-4575

<http://hamburgerfactory.com/> - <http://www.poway.org/index.aspx?page=110>

8am-ish: The truly hard core LEAFers who want the best parking spot arrive. If you want one-on-one time with the most addicted EV aficionados, this is a great time. Plus, it should still be relatively cool.

9am - 10am: Arrivals, please park in the lot directly across Midland street from the train depot.

Breakfast in the back room reserved for us at Hamburger Factory restaurant.

10am - 10:55am: We're moving up to a bigger meeting room. General meeting will be at building across the courtyard near the windmill, called Templars Hall. It's the larger wooden building. We will pass the hat for \$3-\$5 typically to pay for the room rental from the city.

10:55am - 11:05am: Intermission

11:05am - 12pm: Second half of meeting, then picking up chairs and clean up.

After 12 noon: Lots of mulling around the cars that usually lasts through 1pm.

Guests:

I've invited Luigi Giubolini, President of Andromedapower.com to our meeting. He's producing an exciting line of DC quick chargers, and is located right here in sunny SoCal. More to follow on that.

Mike Cully of Car2Go has confirmed he will be returning (I think he's having too much fun at his job!). Come out and check out the Smart EV.

David Gatcha of Ecotality / Blink may be returning. One of these times he'll be telling about a DC charger!

Also invited are folks from California Center for Sustainable Energy (the folks who send you your \$2500 - \$5000 rebate check), SanDag (The San Diego Association of Governments is the San Diego region's primary public planning, transportation, and research agency) and the City of Poway.

Nearby charging locations:

Brand new L2 charger, no card required at:

1.2 miles away:

Walgreens

13390 Poway Road

Poway, CA 92064

Three L2 chargers, no card required at:

1.7 miles away:

Mossy Nissan

14100 Poway Road

Poway, CA 92064

Plus, we will have at least one DC charger operational and on site, courtesy of Andromeda Power. If you need a charge from this charger, please reserve a time

Power your EV Darth Vader style



The Aire Mask concept straps tiny wind turbines in front of your mouth to turn your heavy breathing into renewable electrical power. I figure we have enough members full of hot air to power half of socal! (kidding)

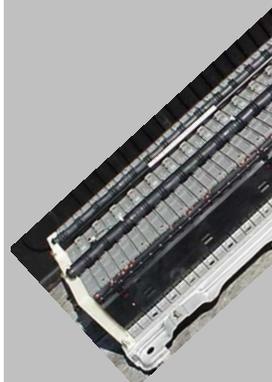
I got a note from the VP of NuVision Solar. I know nothing of the details. If someone wants to follow up, that would be appreciated:



We would like to do something for your club ... How's this ... \$500.00 for everyone that owns an EV in your club that takes advantage of our Sunpower lease program?

Warm Regards,
 Christopher Andrew Moss
 Founder / Vice President
 "Renewable Energy Solutions Everyone CAN Afford"

**PRIUS
 BATTERY PACK REPLACEMENT**



Does your **First Generation Prius** (2001-2003) need new batteries? Is your fuel economy (MPG) dropping? Why not let the **Kick Gas Car Club** guide you through a simple DIY battery replacement while you act as your own contractor? At \$2,500, the cost is a little over half of what most local Toyota dealerships charge for the installation of a new battery pack. The KGCC will be installing Re-inVolt remanufactured battery packs, and turnaround is fast. Re-inVolt battery packs contain the higher density energy cells found in the Second Generation Prius. These "Gen2" cells reliably last 225,000-250,000 miles with like-new performance and less corrosion. Re-inVolt replacement battery packs come with a 12-month, unlimited miles guarantee.

See <www.re-involt.com> and <www.kickgasclub.org>.

Please contact Mr. Q at <quevedo@cox.net> for any additional information you may require.

The Kick Gas Car Club is taking on a new way to raise funds. Let's help promote them by passing this flyer along to anyone you know that has a Prius.

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/eamembership.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

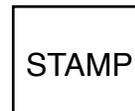
Promotion & Public Awareness of EVs Student or General Interest Electrathon/Bicycle/Scooter/Other

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.

Current subscribers have borrowing privileges for the association's video tape and publications library. Subscribing to the newsletter is optional and is not a requirement for membership. EVAOSD meetings are always open to any and all interested parties. New Subscribers, please use this form to register to receive the EVAOSD Newsletter. Current Subscribers, please use this form to send us any change in your details.

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

EVAoSD Newsletter
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