January 2013

Charged Up

ELECTRIC VEHICLE ASSOCIATION OF SAN DIEGO (EVAOSD)

An affiliate of the Electric Auto Association (EAA) 2755 Dos Aarons Way, Suite A, Vista, CA 92081

Ph: (760) 670-3388 Fax: (760) 266-9505 Email: <u>EVAOSD.Newsletter@DriveGasFree.com</u> Website: <u>www.evaosd.com</u>

Officers:

President: Joseph S. Gottlieb

Vice President: Lloyd Rose

Treasurer: Richard Rodriguez

Secretary: David Crow

Program Chairman: Staff

Newsletter Editor: Tom Dulaney

Webmaster: Russ Lemon

Librarian & AV: Lloyd Rose

Regular Meetings: Our meetings are on a different schedule, please check date below (No Meeting in December).

Location: SDG&E Innovation Center 4760 Clairemont Mesa Blvd. San Diego, CA 92117

Next Meeting: January 23rd, 7 PM (WEDNESDAY)

Program: New Location, New People

Inside this issue:

- 1 Presidents Message
- 2 From the VP
- 6 Subscription

Presidents Message:

We are at the SDG&E Innovation center!

Happy new year everyone! I am tapering down my work with the EVAOSD so those who are next in line are going to be stepping up to really make stuff happen this year.

Special thanks to all that participated in the San Diego International Auto Show. I saw Bob Van Gorder on PBS in the morning and it was a great interview. There is still a lot of interest in conversions and many people want to know how to do it. Also, the manufacturers are out in full force! It's a great time to be at the re-re-re-beginning of the EV revolution.

EVgo is coming!

eVgo (ee-vee-go) is creating the nation's first privately funded, comprehensive electric vehicle (EV) ecosystem. eVgo provides charging solutions directly to electric car owners as well as businesses looking to serve the EV charging needs of their residents, tenants, employees or customers.

They are starting the plan to deploy rapid charging stations all over San Diego!



From the Vice President

Lloyd Rose

I thought the attached article would be appropriate considering Joseph and my continuing "discussion" of Fast Charging versus Battery Swapping ! Pretty big investments are being made by both sides and probably a lot of Big EGO's are involved also. Either way, I look forward to the day when Electric Vehicles can remove this "hurdle" of EV acceptance and we all can enjoy the similar conveniences of gas/diesel vehicles. Joseph is actually starting to sway me a little....but you should read the article and decide for yourself who might come out on Top ! (Also some of the comments are worth reading, but again, you have to decide for yourself !)

How Two Billionaires Are Supercharging The Electric Car To Upend Big Oil

This story appears in the December 10, 2012 issue of Forbes.



A roadhouse off Interstate 5 near Coalinga is the last place you'd expect to see an electric car pull in to refuel. A speck of nowhere surrounded by the endless farmland of California's Central Valley, it's almost exactly 200 miles from both San Francisco andLos Angeles-the kind of place unreachable by most electric cars. Until now. The roadhouse is one of only six locations in the world outfitted with Tesla "Superchargers." One of these 6-foot-tall white slabs sits away from the gas pumps as if it wants no part of them.

Plugging in my sleek, silver \$85,000 Tesla Motors Model S for a half-hour charge that will get me another 150 miles of range, a guy filling up his SUV ambles over. "How much is that costing you?"

"It's free," I reply.

He shakes his head and returns to a gas pump, ringing up a three-figure sale. A few hours and another Supercharger visit later, I arrive in Los Angeles from San Francisco, a journey that would have been impossible even a week earlier, covering 400 miles in six hours without emitting a molecule of carbon or spending a penny on fuel.

Volume 23, Issue 1

EVAOSD Newsletter

January 2013

"A key reservation people have about electric cars is whether they'll have the same sense of freedom they have with a gasoline car," says Elon Musk, the 41-year-old billionaire cofounder of Tesla Motors. Musk plans to eliminate that fear next year through a solar-powered Supercharger network-and the electrons are on him (as long as you own a Model S). "The clearest way to convey the message that electric cars are actually better than gasoline cars is to say charging is free."





<u>RIP Larry Hagman: "Dallas" Oilman J.R. Ewing Had A Passion For Solar Energy</u> On the other side of the world another billionaire, 57-year-old Idan Ofer, is offering a competing vision. His startup, Better Place, has built networks of service stations in Israel and Denmark where drivers of Renault Fluence Z.E. sedans pull in and have robots swap the car's depleted battery pack for a fresh one in minutes. "I want to scale as fast as possible, and I want to be all over Europe," says Ofer, who FORBES estimates is worth \$6.2 billion, making him Israel's richest person.

They both can't be right. The electric car market already appears a dubious proposition right now-the Chevy Volt, Nissan Leaf and all-electric Ford Focus will sell only a bit more than 30,000 cars in America this year, versus 155,242 Toyotas sold in the U.S. in October alone. For the electric car business to be viable, it needs an industry standard. Which makes this car war-battery-supercharging versus battery-swapping-the next great technology platform battle, in the same league as AC and DC power, VHS and Betamax, Blu-ray and HD DVD, with the winner positioned to eventually take a shot at the \$1.6 trillion gasoline-powered paradigm.

To raise the stakes still higher, two major wild cards are at play. The first is China, the world's biggest car market and one unabashedly interested, given its oil import dependency, in

Volume 23, Issue 1

EVAOSD Newsletter

January 2013

electric vehicles. The Chinese government has decreed that 5 million of them should be on the road by 2020 but has yet to decide on fixed or swappable batteries as the standard. China's scale can decide the winner. "Whoever is successful in this race in China will get the government to sanction and say, 'This is the way to go,' " says Ofer, an old China hand who has spent the past few years giving Better Place an inside track with Chinese policymakers, party bosses and automakers. " They're going to experiment for a while," he adds. "And that's why we need to move as fast as possible there." Advantage, Ofer.

The second wild card: Warren Buffett. Berkshire Hathaway owns a 10% stake in BYD, a Chinese automaker that makes electric cars on Musk's standard: nonswappablebatteries. Ofer and Better Place have made overtures to BYD to build battery-switchable models, but BYD and Berkshire have so far resisted. BYD aims to export its electric car to the U.S. and other overseas markets. Advantage, Musk.

The problem with the U.S. electric car market can be boiled down to a chicken-and-egg scenario. High prices and limited range–about 75 miles on a charge for the Leaf and Focus–have kept sales of electric cars depressed. And with few cars on the road, automakers are wary of the investments needed to lower the price and increase the range.

Five years ago Better Place founder Shai Agassi thought he could crack this conundrum globally. Agassi, a former top executive at software giant SAP, wanted to treat miles on the road the way telecommunication executives treat cellphone minutes, billing customers via that metric and letting them juice up either at a home charging station, included in the car's cost, or at a switch station out on the road. Drivers would buy the car, but Better Place would own the battery, the vehicle's most expensive component.

In 2007 Agassi returned to his native Israel to pitch potential backers and landed in the office of Idan Ofer, an unlikely investor given that his family's fortune derived from shipping, oil and chemicals. But Ofer was intrigued. Agassi's model complemented a burgeoning interest. After eight years living in Hong Kong, Ofer understood that China's middle-class automobile lust was hampered by the country's abundant air pollution and lack of oil. "This is perfect for China, India or any emerging economy where people are able to switch from nothing to cars," Ofer said during an interview at his airy, art-decked duplex overlooking Central Park in Manhattan.

Months before meeting with Agassi, Ofer's Israel Corp. had agreed to invest more than \$200 million in a joint venture called Qoros with Chinese automaker Chery Automobile to build high-quality, export-worthy cars that would appeal to the country's increasingly affluent consumers. Following the Agassi meeting, Ofer and his partners decided Qoros would go electric (with swappable batteries) and Israel Corp. would eventually invest another \$200 million-plus in Better Place, giving it nearly a one-third stake in the company after Agassi raised a total of \$750 million from investors that include General Electric, Morgan Stanley and HSBC. Two geographically compact, oil-dependent countries, Israel and Denmark, were earmarked as Better Place's first markets.

But Better Place has had only one car to offer potential customers—the electric sedan that Renault had agreed to make compatible with the company's battery-swapping stations. (Other automakers have so far balked at ceding control of their battery packs by making them swappable.) An innovative billing system alone couldn't solve the chicken-egg problem—China standardizing around swappable batteries would. Ofer and Better Place executives in 2009 quietly began frequenting Beijing, meeting with bureaucrats and regional party bosses who have invested in auto companies and battery makers. "You need to tread carefully and build confidence over time," says Ofer, who chooses his words with deliberation, particularly when

EVAOSD Newsletter

January 2013

the topic is China. "They need to build a consensus, watching that they don't alienate anybody, as it has consequences on their career within the Communist Party system." In 2010 Better Place collaborated with state-owned Beijing Automotive to build prototypes of a battery-switchable car based on Saab models the Chinese company had acquired from GM's former Swedish subsidiary. Better Place also built battery-switchable prototypes with stateowned Chery. These projects are still in their early phases. But one key Chinese automaker has resisted Better Place's efforts: BYD, the Buffett investment that makes both electric vehicles and batteries. "BYD was very focused on the fixed-battery approach," says Better Place executive Dan Cohen. Ofer says that in 2010 Better Place approached BerkshireHathaway directly about collaborating in the U.S., to no avail. Chinese state-owned utilities have proven far more accommodating. Battery-switching would avoid having all those electric cars on the grid and offer a new market to dominate. In April of last year, immediately after China decreed its goal of 5 million electric cars on the road by 2020, Better Place inked a deal with China Southern Power Grid, one of the country's two giant utilities, to build a demonstration switch station in Guangzhou. Officials in Guangzhou also signed an agreement with Better Place, pledging to help the company develop an electric car infrastructure supply chain and to encourage regional Chinese automakers to make battery-switchable cars. Ofer then began inviting Chinese officials to Israel for a firsthand look at Better Place's first network, which launched this summer. It's unclear if they were swayed. Since launching its Israeli and Danish networks Better Place has signed up a mere 800 customers. In July China's State Council, the country's top administrative authority, released a report that seemed to favor fixed charging over battery swapping. But then in September a white paper issued by one of the government's research institutes advocated battery swapping as a viable electric car strategy for China. Kevin See, an analyst with Lux Research who follows the Chinese electric car industry, says he believes the government is leaning toward conventional charging but adds, "I would caution at this point in saying that anything is gospel, because things can change extremely quickly in China." Ofer is clearly antsy: Amid criticism over Better Place's slow pace and mounting losses-it has bled \$490 million since its inception-Ofer ousted founder Shai Agassi as chief executive in October, citing "a natural point in the company's evolution."

Elon Musk is as brash as Ofer is deliberate. He argues, with irony, that he actually gave his rival the battery-swapping concept. "Before starting Better Place, Shai Agassi was visiting Tesla, and we were talking to him about the future," he says, "which included high-speed charging and battery swap." (A Better Place spokesman disputes that, saying that Agassi was merely inspired by the Tesla visit to cook up his own idea.)

Either way, Tesla's cofounder and chief technical officer, JB Straubel, says that soon after that, Tesla decided to bet on its Supercharger technology, which can replenish a battery in 30 minutes, versus 6 hours for a standard charger. It's a natural evolution. At its sprawling headquarters in a former Hewlett-Packard research lab in the hills above Stanford University, workers in a brightly lit, white-walled area already assemble huge lithium-ion battery packs and drive trains for the Model S and the Toyota RAV4 electric sport utility vehicle. These same components are simply adapted for the faster chargers. Tesla, which is producing 200 vehicles a week, says its economies of scale allow it to make a Supercharger for \$15,000. "This doesn't have to be some trillion-dollar collaboration with government," says Straubel. "We can do it ourselves."

Volume 23, Issue 1	EVAOSD Newsletter	January 2013
Fill out this form, attach a check, money order or use PayPa	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	CE = Current EVents newsletter
e-CE \square \$35 USA & other Countries \square paper CE \square \$45 USA \square \$48 Canada		-
\$120 (supporting level-1) \$240 (supporting	g level-2) S500 or more (high voltage)	do not list my name
	EAA Chapter (addional chapters, rest group (other than the one that comes with the	
You can fold this form as indicated and mail it wi or send an e-version of this form, through PayPal		
Name	ema	ail
Mailing address (Apt. #)		Home phone
Mailing City, State & Zip-8		Work phone
Electronic version of Current EVents, paperless only, lin	k sent by email, if your membership was for the e-version, th	at is what you will receive
Do you own or Lease an electric vehicle	(plug-in) production conversion bicy	cle 🔲 hybrid or 📄 None
please include miles driven and type of vehicle		
All information in this application is for the exclu	sive use of the EAA and not sold or given to any o	other organization.
Please identify your primary areas of interest	relating to the EAA (check as many as your wi	sh
Owner/Driver Hobby/Builder Professional/Bus	iness Competition (Rallies, Races, Records Plug-in	Hybrids
Environmental/Govt. Regs Social (Rallies, Shows, Eve	ents 📄 New Technology & Research 📄 Solar & Wind Pow	er
Promotion & Public Awareness of EVs Student or Ge	eneral 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 2755 Dos Aarons Way, Suite A Vista, CA 92081

STAMP

First Last Other Street Other City, Other State Other ZIP

Address Correction Requested