

NORTH BAY CHAPTER



Electric Auto Association
Promoting Electric Vehicles Since 1967

NOVEMBER 2015 EDITION

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THIS MONTH'S NBEAA MEETING

November 14th: A review of the current status of public charging. This will include what it costs to charge at various types of public chargers as well as a review of the different types of chargers in the Bay Area and beyond. Plus, I'll give a quick overview of the status of EVs and charging in China (I am there , now).

FUTURE NBEAA MEETINGS

FUTURE MEETINGS:

December 12th: An open discussion of what the NBEAA should concentrate on in 2016. This would include the current status of EVs in Sonoma County and what should be done to accelerate their adoption. Some Sonoma County environmental groups have requested that we provide information to them regarding the adoption of EVs.

January 9th: To be determined in the December meeting.

UPCOMING EV EVENTS:

November 19th: Business For Energy Breakfast

The Center For Climate Protect is organizing a breakfast for Sonoma County business leaders at Sonoma Mountain Village. The focus of the meeting is to encourage businesses to promote driving EVs. CCP has requested volunteers from the NBEAA to do a Show & Tell at this meeting. We are trying to get an EV from each of the families of EV dealers in Santa Rosa. I have received a great response from my recent email request but still lack a LEAF. If any LEAF drivers can volunteer, please contact Doron at CCP (doron@climateprotection.org).

EV NEWS:

Approximate number of DC Fast Chargers Currently in the U.S.:

As of today, the U.S. Department of Energy's Alternative Fuels Data Center shows 170 U.S. locations offering CCS fast charging (also known as "SAE Combo"), at a total of 296 outlets. For the CHAdeMO standard used by the Leaf, Soul EV, and i - MiEV, the numbers are 975 locations with 1,293 outlets. The comparable figures for the Tesla Supercharger network are 230 U.S. locations with 1,496 outlets. It is interesting to note that there are approximately 1.5 chaDEMO and CCS chargers per location and about 6.5 Tesla Superchargers per location.

California's New Emissions Law Mandates Fuel Switch for Vehicles

Senate Bill 350, which Governor Jerry Brown recently signed into law, originally included a mandate to cut the state's petroleum consumption 50 percent by 2030. However, Democrats from oil-producing parts of the state succeeded in getting that provision removed. Lobbyists for Big Oil were jubilant until they realized that the new law, which envisions cutting greenhouse gas emissions to 40 percent below 1990 levels by 2030 and 80 percent by 2050, contains provisions encouraging drivers to choose EVs. Electric utilities will be required to submit proposals for "multiyear programs and investments to accelerate widespread transportation electrification to reduce dependence on petroleum." This is what precipitated the PG&E request for installing charging stations. The utilities now seem to be squarely behind the adoption of EVs but still resisting the widespread installation of solar.

Chargemaster New DCFCs Can Read License Plates

Progress is being made in making charging more convenient. British charging station manufacturer Chargemaster (<http://www.chargemasterplc.com/blog/cat/news/post/UltraCharger/>) has revealed its new UltraCharger DC fast charger. EV owners can access the UltraCharger using an RFID card or a contactless debit or credit card. Another nifty feature is Automatic Number Plate Recognition – the unit can recognize a vehicle's license plate number and automatically start charging.

Ev-Friendly Countries And States Join To Form The International Zev Alliance

Plug-in vehicles hit a milestone this month, there are now a million on the world's roads, according to an estimate by the International Council on Clean Transportation (ICCT). However, that's still a tiny fraction of the two-billion-strong global vehicle fleet. EV adoption will have to ramp up quickly to have an impact on the environmental and geopolitical crises of the dying oil age. Leaders around the world recognize that to accelerate global adoption of zero-emission vehicles (ZEVs), governments must cooperate to share ideas for EV adoption. To this end, governments of several EV hotspots have formed a new organization called the International ZEV Alliance to set targets for ZEV deployment, and to share data and best practice policies. The new group's agenda is outlined in a report published by the ICCT, "Transition to a Global Zero-Emission Vehicle Fleet: A Collaborative Agenda for Governments." The founding members of the International ZEV Alliance are Norway, the Netherlands and the UK; the US states: **California**, Connecticut, Maryland, Massachusetts, Oregon, Rhode Island and Vermont; and the Canadian province of Québec. These regions account for only 7 percent of global car sales, but represent 38 percent of plug-in sales, thanks in large part to progressive government policies and investments.

UPDATE ON NEW CHARGING STATIONS IN THE NORTH BAY

Sorry, I have been in China for 2 weeks, now, and haven't been able to access any of the charging station locator websites to determine what new charging stations have opened in the North Bay. However, the reason for my trip to China is to work with the organizer of the 80eDays event and the Chinese team that will be participating in the event to acquire approval to drive our personal cars in China and to analyze what we will have to do to charge in China and the rest of the countries where we will be driving.

To summarize what I have learned in one sentence: Charging around the world is a mess.

Let's start with Level 1 charging: Level 1 charging is the most universal of the three levels of charging. It is single phase and either 115 or 230 volts and up to 32 amps. Most mobile charging connectors can handle these wattages. The problem is this is a maximum of 7 kW which isn't very fast and very few of the single phase charging stations have 32 amps. So the majority are 3.3 kW. This means that if you want to take your EV outside of the U.S. without having to get special adapters, then you will be charging at 3.3 kW.

Level 2: Everywhere except the U.S., EVs can charge with 3-phase power and 3-phase charging stations are common in Europe and China. Also, Europe and China are using the Mennekes-type of charging connector. Here, in the U.S., our power is single phase and we use the J1772 connector. This means that if you want a Level 2 charge in China or Europe, you have to make an adapter for the Mennekes connector and make it so that it only uses one of the three phases. The 3-phase charging stations will work with such an adapter. The disappointing aspect of this is that with 3-phase power, you get 1.73 times as much charging power. Thus, with the same voltage and amperage, European EVs charge 1.73 times faster than American EVs. If you are European and you want to charge in the U.S., then you have to have an adapter to go from the J1772 to the Mennekes connectors and you can't take advantage of being able to charge with 3-phase. Oh, and if you are going to drive your EV in Europe or China, most Level 2 charging stations require that you carry your own cord with you-i.e. the charging stations do not have cords.

DC Fast Charging: This is the most disappointing level. To start with there are 6 different connectors for DCFC in the 15 countries where we will be driving: chaDEMO, Tesla America, Tesla Europe and China, Mennekes, CCS and one for the Denza which is being made by a joint venture between Mercedes and BYD. The good news is that, as far as I can tell, the communications protocol for all of these types of DCFC are the same. It is just the connectors that are different. Not considering Tesla America or Tesla Europe/China because they are exclusive to Teslas, this means that if you want to charge at any public DCFC in these 15 countries, you will have to have three DCFC adapters unless you use a station that has two, different, built-in connectors like some stations in the U.S. have, chaDEMO and CCS. If you are driving an American Tesla then you cannot use the Tesla Superchargers in China or Europe because the charging port on European and Chinese Teslas is a modified Mennekes style and Tesla does not offer adapters to go from one to the other. Apparently, one European Tesla owner thought that it would be nice to order his Tesla to be picked up at the Fremont plant so he has the American style charging port and cannot use any public charging without an adapter. And he cannot use the Superchargers in Europe.

You can get a sense of how ridiculous this is. And I haven't described the payment situation. The EV manufacturers are shooting themselves in their feet by continuing with this situation.