Northeast Electric Vehicle Symposium Recap

Photo at top taken under one of the solar canopies at the Hotel Marcel with the building in the background, from left to right: Daphne Dixon – Live Green CT, Paul Wessel – Greater New Haven Clean Cities, and Analiese Mione, Barry Kresch, Bruce Becker, and Paul Braren from the EV Club who organized the symposium.

"Sold-out" Conference

Well, it was free, but there was more interest than we were able to accommodate and we had to close registration. Early feedback has been extremely positive, such as this message:

"I attended the NEEVS yesterday and had a fantastic time. What a great lineup of speakers/presentations and lots of fun at the car show as well! I'm looking forward to future symposiums in the coming years. …. Again, I had a great time at the symposium (and the lunch was incredible)."

We would like to thank our sponsors: Live Green CT, Greater New Haven Clean Cities Coalition, EVConnect, Maxwell Vehicles, and ChargePoint, without whom we would have been munching on stale pretzels.

Of course, we also thank our attendees for joining us and being an engaged and interactive audience.

The Hotel Marcel provided excellent, eco-friendly hospitality. For anyone who may be nervous about switching from a gas to an induction cooktop, the quality of the food attested to how good induction cooking can be. Even the chafing dishes were induction.

We've had some comments about how a small committee was able

to put together a jam-packed agenda in a short period of time. If anything, the challenge is less about finding content than winnowing it down to fit within our time parameters. As it was, our 3-hour speaker agenda took 4 hours with too little time for Q&A.

We want to give a shout-out to **Rich Jordan**, president of the CT Tesla Owners Club, for his help with the car show, to the Westport Police Department and their Model Y patrol car, and to Tesla for bringing vehicles for test drives.

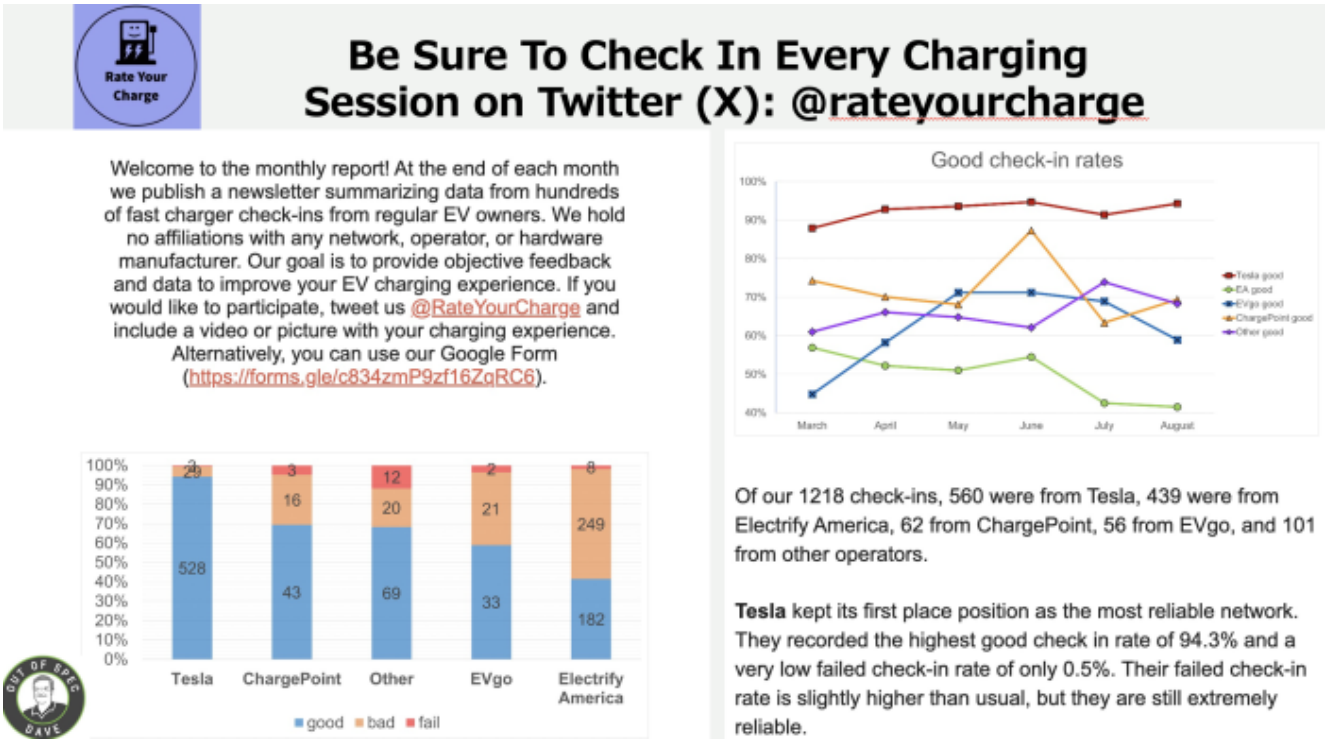
Converted EV Van

Hotel Marcel architect and developer, **Bruce Becker**, talked about how Maxwell Vehicles converted an ICE van to electric, using a salvaged Model 3 battery and drive train. This van gets a lot of use shuttling guests to downtown New Haven, Yale, Union Station, Tweed Airport, and other destinations.

Out of Spec Dave

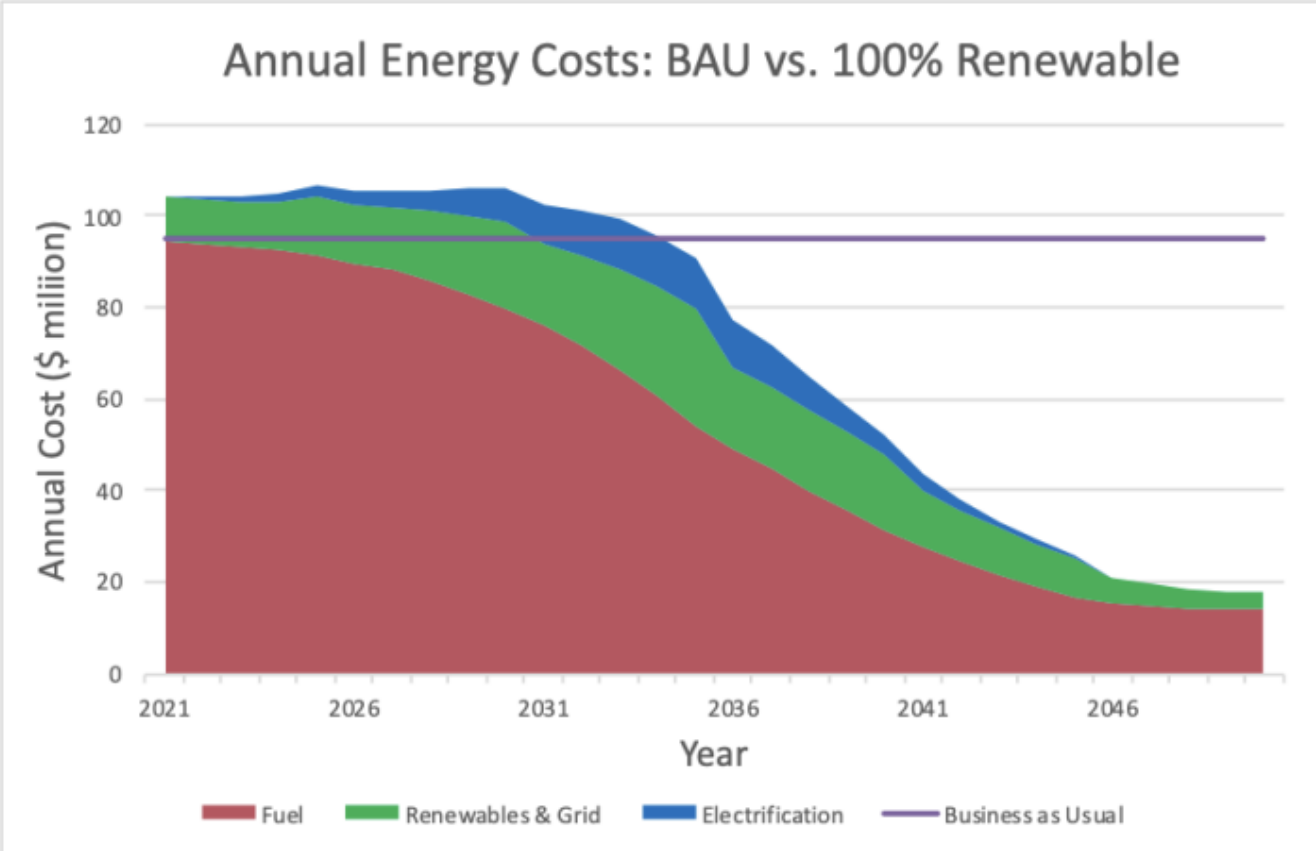
YouTube and X (Twitter) personality, **Out of Spec Dave** from Greenwich, CT, talked about his adventures as a road warrior, having driven lots of different EVs and experienced the many faces of public charging. Not all of them are happy faces. Part of the charging experience is knowing before you get to a charger whether the charger is in service and how fast it is charging. There is a gap in the eco-system here. He has launched the “Rate Your Charge” newsletter. Take a video or photo of your charge, describe your experience, and tag @outofspecdave on Twitter. These are being compiled in a weekly report posted to Twitter. For those not on Twitter, use this Google Doc:

https://docs.google.com/forms/d/e/1FAIpQLSd9nE1JOulqidJNacpL230TdswfnnaWBTjdGIaky3ffkHF6EA/viewform?pli=1



PACE

Mark Scully from People's Action for Clean Energy (PACE) spoke about their program to help municipalities decarbonize and save money in the process. This slide illustrates the cost savings projected in a transition to renewables.

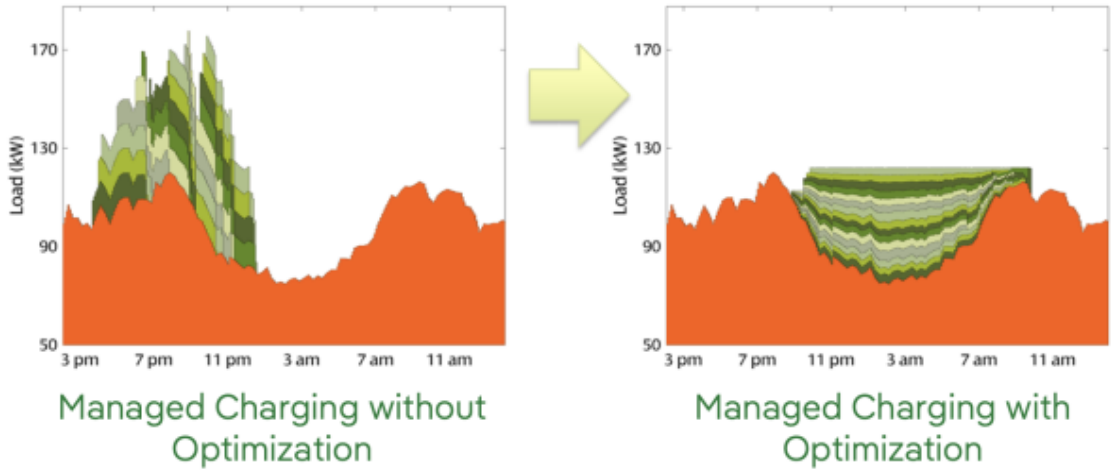


United Illuminating

We get many questions regarding whether widespread EV adoption will crash the grid. While the grid does need to be modernized (and the Public Utilities Regulatory Authority has a grid modernization docket), **Rick Rosa** from Avangrid/UI discussed using EVs to optimize the grid. This slide is an example of optimization vs curtailment. EVs will be beneficial to the grid for the foreseeable future and, as such, there are incentives for EV owners to participate. See our incentives page for a more detailed description of the program with links to sign up for the residential or commercial incentives. This program is also offered by Eversource and it can offset the costs of buying and installing a 240 volt charger, as well as pay an ongoing incentive to participate in their managed charging programs.

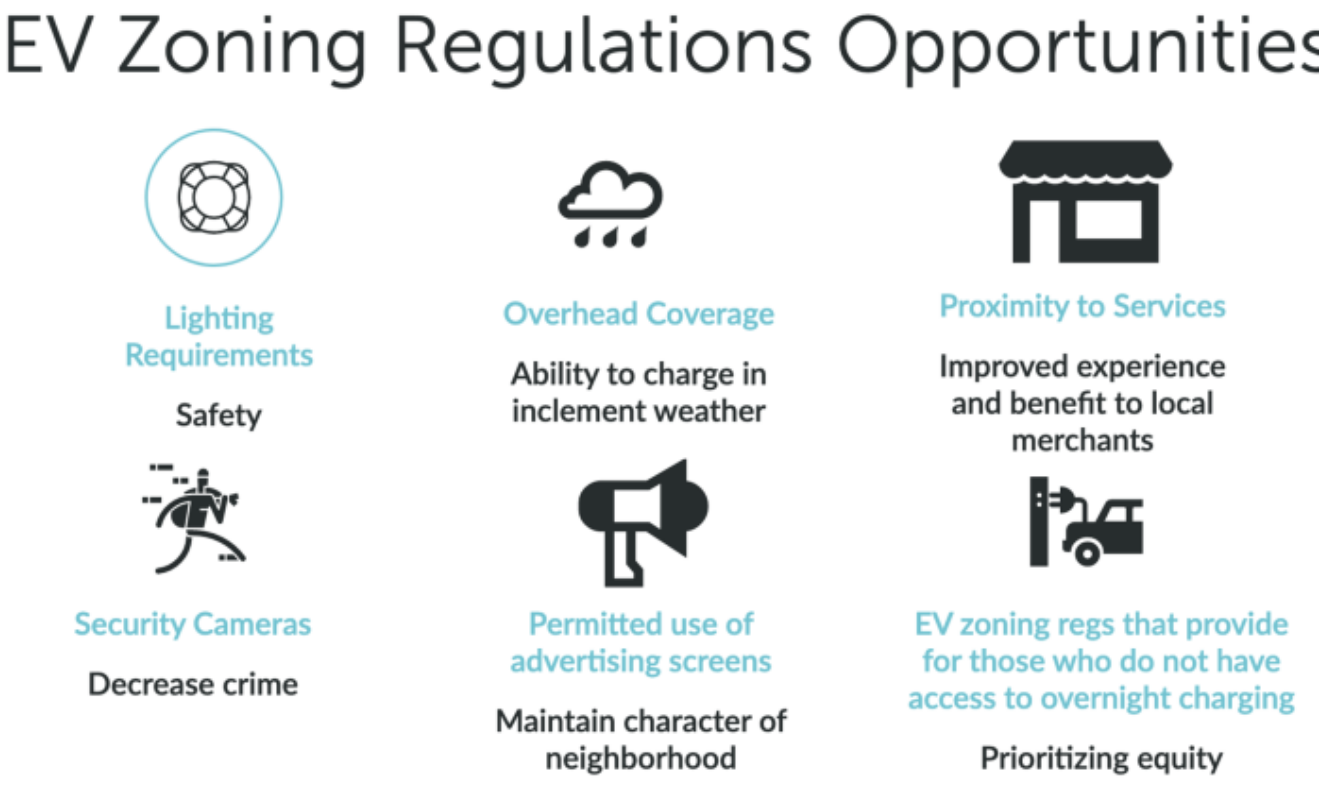
Managed Charging

Load Optimization



Zoning for EV Readiness

Daphne Dixon of Live Green CT, who has done a lot of work with municipalities, gave a presentation that illustrated the complexity of zoning for EVs but also highlighted the significant benefits as noted in the example below.

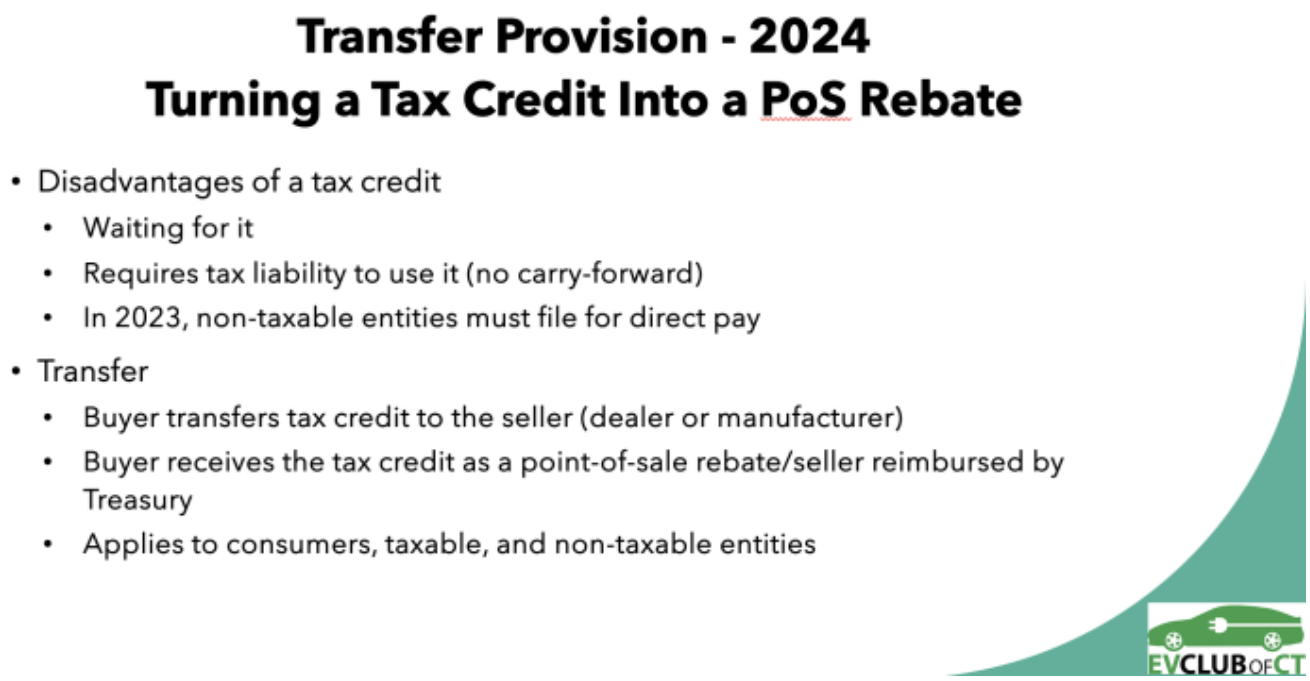


All Electric, Zero Emission Home

Paul Braren provided a detailed description of his journey to create an all-electric home (solar roof seen in the photo, powerwall/VPP, 2 EVs, insulation for home and windows, heat pumps, smart panel, electric garden tools) and capture the available incentives. It has been a complicated road. This links to his full presentation.

IRA Transfer Provision

In his update on incentives, EV Club President, **Barry Kresch**, discussed the implementation of the transfer provision in 2024, and how it changes a tax credit into a point of sale rebate.



Advanced Clean Cars II

CT is a participant in the California Air Resources Board emissions requirements. It is now in the process of implementing the second phase of these regulations, commencing in 2027 through 2035. The rules require manufacturers to sell increasing amounts of zero emission light-duty vehicles, reaching 100% in 2035. There is a separate set of regulations that would significantly lower emissions for medium and heavy-duty vehicles during this same period. **Charles Rothenberger**, Climate Attorney for Save the Sound, explained these regulations. The legislature has authorized CT DEEP to proceed with the required multi-step process. The slide below shows where we are and the remaining steps.

Approval Process

- Agency Issues Notice of Intent and Proposed Regulations (July 21, 2023)
- Public Comment Period (July 21, 2023 – August 30, 2023)
- Public Hearing (optional) (August 22, 2023)
- Agency Prepares Comment Response Document (In Process)
- Agency Issues Notice of Decision
- Proposed Regulations Sent to Attorney General for Review
- Proposed Regulations Sent to Legislative Regulations Review Committee for Approval
- Approved Regulations Sent to the Secretary of State for Publishing and Codification

There is some concern that when the rules go back to the legislature, in which a bi-partisan review committee is supposed to examine them for legal sufficiency, that there may be an effort by opponents to short-circuit the approvals process. More on that to come.

We hope you see you next time!!!

Demand Charges – The Silent Killer

Utility Demand Charges Keep

Level 3 Charging Stations Dark

We have quite a few posts addressing range-anxiety in its various forms. Even though most EVs have enough range to get you through your typical day, we all have occasions where we drive to a destination that exceeds the range of the vehicle. Without the certainty of being able to charge en-route, there is the danger of the battery turning into a very heavy brick. This possible low frequency, but high impact, event is enough to give pause for many folks considering an EV purchase.

A particular CT flavor of this can be found at rest areas on I-95 and the Merritt Parkway. For example, the I-95 southbound rest area in Darien and the Merritt Parkway northbound rest area in Greenwich have CCS and CHAdeMo level 3 chargers that aren't working. (Presumably, this is the case at other rest areas that we haven't been to). These charging stations are not broken. They are just turned off.

The reason is simple: demand charges.

What are demand charges

Utilities build out their infrastructure to handle anticipated peak demand. Demand charges are what pay for that. For non-residential classes of clients, the utility imposes demand charges based on their peak power usage and they are substantial. Whereas a residential user pays a cost per kilowatt-hour charge typically of approximately 17 – 20 cents, demand charges could be over $13 per kWh, plus a higher distribution fee. If you would like to see for yourself, here is the (complicated) rate structure used by Eversource.

Demand charges have been around for around 100 years, since the early expansion of electric service throughout the

country. Aside from paying for infrastructure expansion, they are intended to spread demand into non-peak usage times in order to lessen the need for that expensive infrastructure.

Electric vehicle charging stations obviously draw current, especially the level 3 DC fast chargers that are needed along the Interstates to facilitate a long drive. The power-draw required to obtain an 80% charge in 15 – 30 minutes is sufficiently high (especially if multiple chargers are in simultaneous use) that the threshold for demand charges may kick-in. Our information is that the companies that run the food and gas service at the rest areas did not install the chargers, and it was a shock (electricity makes for way too easy puns) to them when they saw what demand charges were doing to their electric bill. So they turned them off.

Why Demand Charges for EVs Require Rethinking

While demand charges have served a purpose, it is time to rethink how these are handled with respect to EVs for a few reasons.

- Lack of charging infrastructure is a major barrier to EV adoption, and EVs are an important factor in mitigating climate change. In this sense, an inability to charge undercuts a social good.
- Utilities are the new fuel stations. They stand to reap a tremendous amount of business with widespread EV adoption. With EV charger demand charges, they are working against themselves.
- EVs will stimulate use in off-peak hours. Most charging, over 80%, is done at home, and most of this is done at night. In other words, EVs bring load-management benefits to the utilities. If there were a more robust time-of-use rate card available in CT, this would be even more true. Also, at a presentation done at DEEP in

January 2019, Dana Lowell of M.J. Bradley Associates stated that the excessive (for want of a better term) net revenue resulting from EVs in this heavily regulated industry would be returned to the ratepayers. In the EV nirvana of 2 million EVs registered in the state, he estimated it would amount to $150 annually per household.

- This is speculative at this point, and a little off-topic, but it is technically possible for EV batteries to be bi-directional, also

Electric school bus funded by Con Ed that is part of a test of vehicle-to-grid charging protocols.

referred to as V2G (vehicle to grid). At times of peak demand, the energy residing in charged EV batteries could be tapped to fulfill demand, and then be recharged when demand subsides. The part of this that is on point is that there needs to be a lot of battery capacity out there to make this a viable strategy. A pilot study intended to test the bi-directional technology, underwritten by Con-Edison, is being run in Westchester County with electric school buses.

The bottom line is that EVs come with more ramifications with respect to the grid, and more opportunities for society as a whole, than a factory or commercial building. Other states are

further along than CT in bringing innovation to approaching this dilemma.

To be sure, demand charges are just a single piece of the larger EV policy puzzle. It is a subset of what is referred to as "rate-design." DEEP produced a 71-page "Draft EV Roadmap" that does a good job of covering the waterfront in terms of all related policy areas, though the language in this document, released in October 2019, is worded in terms of evaluation or investigation. In other words, there is still a long way to go. The section on demand charges is on page 44.

Tesla Chargers

There are Tesla chargers on the Interstates and these do work. That is because Tesla takes responsibility for them. They may be carrying a contingent liability, but their forward-thinking decision to install their own charging network and not wait for the rest of the world to catch up means that Tesla drivers have a wider array of charging options.

Waiver

There is an Eversource program to grant a demand charge waiver for independently metered charging stations that are open to the public, but that the waiver is temporary. It substitutes average per kWh charges. We don't have a sense that this has been promoted aggressively. The waiver was for 3 years, but the clock has been ticking and it is currently closer to 2 years. A temporary waiver doesn't really accomplish much unless there is something in place to address the underlying problem when it expires.

There are options other than an outright waiver to address this. We reached out to Eversource and were advised that the Public Utility Regulatory Authority will review the rate after the 3 year period ends and decide if changes are needed to the rate structure.

Free of Charge

As in charging your EV for free!

As reported in Elecktrek, the charging station company, Volta, announced the upcoming installation of 150 level 3 DC fast-charging stations nationally with no fee-charging for the first 30 minutes (equates to roughly 175 miles). The first of these will be local, in Norwalk, CT, at the new mall that we've all seen under construction near as we're sitting in traffic near exit 15 of I-95.

The mall is called The SoNo Collection and the scheduled opening is October 9th. So by the time you see this blog post, it should be ready to go.

Volta uses the CCS standard.

The article that we've linked to has all of the details, but we think it's pretty cool that free EV charging is being used by businesses to attract customers. Also, the charging stations carry advertisements, and from their website, we see that media sales revenue is part of the company's business model.

Their slogan, as can be seen in the photo above, is "Fast is Now Free."