Regular Meeting, Electric Vehicle Charging Stations Infrastructure Commission

February 22, 2019

Meeting presentations and minutes are available at
https://www.des.nh.gov/organization/divisions/air/tsb/tps/msp/sb517.htm

Senator Watters opened the meeting at 11:03 a.m.

Introductions

Commission members present: Senator David Watters, Representative George Sykes, Representative Steven Smith, Rebecca Ohler (NHDES), Peter King (BIA), Richard Bailey, Jr. (NHDOS), Carleton Simpson (Unitil), Gary Lemay (Drive Electric NH), Matthew Mailloux (OSI), David Rodrigue (NHDOT), Kevin Arritt (Eversource filling in for Charlotte Ancel), Chris Nihan (ChargePoint in for Kevin Miller via teleconference)and Dan Bennett (NHADA).

Public present: James Penfold (EV LaunchPad); Tom Irwin (CLF); Barry Woods (Revision Energy);; Peter O'Connor (Plug-in America); Tara Merrifield (NHDAS); Liz Nixon (PUC); Tim White (NHDES); Jessica Wilcox (NHDES); Elizabeth Strachan (NHDES); Brianna Brand (Clean Energy NH); Jon Shaer (NECSEMA); Donna Gamache (Eversource); Marc Brown (Alliance of Automobile Manufacturers and New England Ratepayers Association); Brad Pernaw (Granite State Hospitality); Alex Ray (Granite State Hospitality); Simon Thompson (Sheehan Phinney Capitol Group); Tristen Bianco (OSI); Liz Nixon (PUC)

Approval of Minutes from January 25, 2019 – Dave Rodrigue moved to approve the minutes from December 7, 2018; seconded by Carleton Simpson. Motion passed with all in favor.

Presentation: Chris Nihan, ChargePoint – DC Fast Charging in New Hampshire: Capital and Operating Cost Barriers and Opportunities

Chris gave an overview of typical costs associated with installation of direct current fast charging (DCFC) equipment, providing figures for the installation of two 50 kW fast chargers and figures for the installation of two 150 kW fast chargers. He provided ranges for capital costs for:

- Site acquisition - agreement between site host and EVSE owner/operator; legal fees; feasibility studies. Cost: $0 – 25,000
- Hardware (DCFC equipment) – varies based on the amount of power, level of modularity and level of future-proofing. Cost: $60-80,000 (50 kW) $90-150,000 (150 kW)
- Electrical panels and switchgear – usually need to install new equipment, cost varies by amount of power needed. Cost: $4-20,000 (50 kW) $12-26,000 (150 kW)
- Engineering, design and permitting – the more future-proofing the higher the cost. Cost: $3,500 – 12,000 (50 kW) $7-16,000 (150 kW)
- Utility upgrade Cost: $2-5,000 (50 kW) $35-100,000 (150 kW)
- Project management Cost: $3-10,000 (50kW) $5-15,000 (150 kW)
- Construction – varies depending on length of conduit run, breaking pavement, easements and other factors. Cost: $35-90,000 (50kW) $70-120,000 (150 kW)

Construction costs were highlighted as a key deciding factor in siting EVSE. Networking and maintenance are not included in the above costs.

Chris then discussed energy use versus demand charges and why demand charges present a barrier to DC fast charging as a business opportunity during the beginning of electric vehicle adoption. The rate electric customers pay is based on the highest point of electrical flow at any given point in time within a billing period. It is a set charge per billing period, not an increase in the per kW rate. Because DCFC, particularly the 150 kW chargers, draw a lot of power in a short amount of time they create a high electrical flow that sets the rate for that period. For Eversource the demand charge for a spike over 150 kW is $2,100. If there are a lot of vehicles charging during a billing period those costs can be spread out over a lot of customers, but if you are only charging a couple of cars a day then the cost per charge must be very high to cover costs/make a profit.

Demand charges are necessary to ensure that the correct entity is paying the cost of the system they use. In Connecticut Eversource have temporarily set aside demand charges for EVSE as a means of spurring EVSE investment.

Energy storage, such as battery banks, can help alleviate demand charges, but if this becomes widely used then utilities will ultimately wind up under-collecting from the high energy users and this avoidance of demand charges could impact the rates for all customers. It was also noted that avoiding demand charges through battery installation would be an additional capital cost.

It was asked what happens to the cost when the number of chargers is increased. Chris stated that he hasn't been involved in larger installations; however, the majority of the cost is in installation/land acquisition and not the actual charger units. He also stated that operationally speaking that a station with a greater number of chargers could have an even greater issue with demand charges if multiple vehicles charge at the same time.

General comments on this topic:
OSI will want to make sure that any early investment in EVSE is future proofed.

Investment into a gas station is as much if not more than installing EVSE. The fuel tanks alone could cost $20,000. In addition, with the cars getting better range, the spacing can be further apart with fewer needed.

Senate Bill 275 (passed in 2018) directs PUC to look at rates and demand charges relative to EVSE.

Most cars will be charging at home overnight and the grid is likely to be able to handle it. Not all vehicles need DCFC all the time. It was also noted that many EVs have "demand response capability" that can respond to grid conditions.

A request was made to hear from someone who has installed DCFC in NH.

- Invite Tesla to come talk to the Commission as well as NH owner/operators of other DCFC in NH.
- EVGo was also mentioned, though it was noted that most of their installations are funded by Nissan's "no charge to charge" program.

Jon Shaer – New England Convenience Stores and Energy Marketers Association (NECSEMA)

Jon Shaer, Executive Director of NECSEMA, shared the perspective of convenience stores and transportation fuels distributors. Jon complimented the committee and New Hampshire in how they are going about this process with the public participation. He stated that six months ago his members saw this as a threat, but in large part through the relationships he's developed with many in the room they now see this as an evolving opportunity. He stated that there are three questions when looking at potential business ideas:

1. Is there a market and/or is a developing market a certainty?
2. When will it be appropriate to invest into that market?
3. What will be the sustainable economic model justifying said investment

He understands the excitement over electric vehicles and the momentum that excitement is generating, and agrees that they will play a part in sustainable mobility. However, his members have felt left out of discussions among regional and state groups talking about the future of transportation as evidenced by the TCI and NH DES websites omitting their locations as viable site hots.

Jon stated five thoughts on the topic:

1. The EV market is in its infancy and still a niche market. Public policy is way ahead of demand. Supported by the sales data. The number of people and cars is increasing and there is a mosaic of alternative fuels available. EVs and PHEVs are still only 2.2% of all new vehicle sales, .89% of NH sales, 1.3% of MA sales. Tesla represents 53% of EV/PHEV sales. Who are we spending all this infrastructure money on, and what is the rush?
2. What happens to the market when the subsidies are reduced or disappear? Edmunds has stated that the loss of the federal tax credit will make the electric vehicle market crash. In MA, the percent growth of electric vehicles decreased when the $2,500 tax credit was restricted to vehicles under $50,000.
3. The technology is evolving rapidly, and auto manufacturers are investing heavily. At today's recharge rates, retail gas stations are not the best options for charging infrastructure. However, once those rates approach the time it takes to fill a car with gas, c-stores and gas station sites become the best place to charge as they still hold the best real estate on the highest trafficked roads in the most densely populated areas. Think internet connection… wasn't that long ago we were all dialing in with AOL. Average download speed 2008: 2.35 megabits per second. 2018: 46.2 megabits per second.
4. Currently no great business model. Jon added some of his members are investing out of fear the infrastructure will build out around them. There is also a fear of backwards compatibility:

will the infrastructure of today be able to charge the cars of tomorrow? Will the infrastructure of tomorrow be able to charge the cars of today?

5. Jon said he is worried that the playing field will not be level for all members of the private sector. Around the country, utilities are using risk-free, rate payer money to build out infrastructure creating a de-facto monopoly in a nascent industry. Will suppress the development of a competitive market.

Jon concluded that where people go and where they live will not change. The retail gas and convenience stores are already in those locations. Jon suggests that New Hampshire wait before spending any of the Volkswagen funds until the technology evolves. Convenience and gas stations will become good options; demand charges will be figured out; business models will evolve and allow for a larger match making the funds go further.

Jon submitted a written position paper following the meeting that can be found on the SB 517 Commission web page at: https://www.des.nh.gov/organization/divisions/air/tsb/tps/msp/sb517.htm

Discussion:
Asst. Commissioner Bailey said that based on the business model currently used by convenience stores and gas stations they must have to calculated x number of cars or x number of gallons needed to be sold to make a viable location. Based on that assumption, he asked if they had developed something for the electric model. Jon Shaer stated that the business model for the convenience stores and gas stations has been developed based on a market that has been around for a long time, the electric vehicle market is too young and it would be difficult to create an accurate model at this time.

Senator Watters asked Dan Bennett if he agreed with the adoption rates referenced. Dan stated that it is still rather small and he agrees that the incentives are driving the adoption. Senator Watters asked about dealers investing in chargers. Dan stated that the dealers who install chargers are doing so based on original equipment manufacturer (OEM) requirements and are typically funded by those OEMs as well.

Senator Watters stated that there are many known unknowns that will impact this market, including the development of a cap and trade program for the transportation sector by the Transportation and Climate Initiative (TCI) states (12 Northeast and Mid-Atlantic states), scheduled to be completed by December, as well as possible Federal action

Jon Shaer asked why there is a rush. Why not sit back and let some of it evolve. Senator Watters agreed that NH needs to be cautious and can't mandate consumers to adopt electric vehicles. However, the corridors are a cautious and needed investment. Additionally, this Commission will likely also make a recommendation to help businesses with the investment.

Matthew Mailloux stated that it is likely that many homes have two cars, and will have one gas and one electric. The electric vehicle will be charged at home as much as possible and used for every day, but at least in the beginning, the gas vehicle will be used for longer trips.

Gary Lemay, NH Electric Coop - utility role in development of EVSE; barriers to utility investment; how utilities can help reduce barriers (see presentation on Commission web page)

Gary Lemay discussed some of the barriers to electric utility investment in electric vehicle charging, including: high infrastructure costs; lack of experience/knowledge operating EVSE; and lack of knowledge regarding location of EVs. New Hampshire Electric Cooperative is currently working to reduce the barriers via incentives, return on investment analyses, working with customers to provide infrastructure, and expanding time of use rates. Gary indicated that publically available registration data on electric vehicles in New Hampshire would be a big help in developing the electric vehicle market.

Discussion:
The Coop does get some data on location of EVs when customers apply for a rebate for home charging, but not all inquire about the rebate.

There was a discussion among Senator Watters, Becky Ohler, and Rick Bailey about potentially coming up with legislative language to make registration data by zip code (no personal identifying information) available to the industry.

Legislative Update

Senator Watters led a brief discussion of SB 275 and the fiscal note for the bill. Becky Ohler asked if the $28 million in the fiscal note was in addition to current costs or a total amount to replace the fleet. Tara Merrifield stated that it is in addition to what would typically be spent on the fleet for replacement and was based on a 33% increase in the costs currently seen on the difference between the light duty vehicles in the contract. Senator Watters stated that since the fiscal note does not include fuel and maintenance, that there will likely be some expenses prior to 2024 due to installation of charging infrastructure to prepare for fleet turn over. Tara said that was likely.

Senator Watters thanked the public and asked if there was any additional public comment, there was none. The meeting was then adjourned at 1:01.

The next meeting will be March 22, 2019 at starting at 11:00 a.m.