



Office of The Ulster County Comptroller

Electric Car Chargers: The Who, What, and Where of Usage

May 4, 2016

Introduction and Background

In 2015, Ulster County (“County”) installed nine electric car charging stations at the following properties owned by the County: (1) Ulster County Courthouse, Kingston; (2) Ulster County Office Building, Kingston; (3) Ulster County Public Works Complex, Kingston; (4) Ulster County Health Department, Kingston; (5) Ulster Avenue Office Complex, Kingston; (6) SUNY Ulster Extension Center, Kingston; (7) Ulster County Probation Department, Kingston; (8) Ulster County Law Enforcement Center, Kingston; and (9) Trudy Resnick Farber Center for Human Development, Ellenville. The charging stations, equipment, and software were funded through grants from the New York State Energy Research and Development Authority as part of the Governor’s ChargeNY program, amounting to a total of \$94,950 or \$10,550 per station; however, installation, labor, and related costs were attributed to the County for a total of \$53,033.70.¹

The County established this initiative with the stated goals of reducing our local carbon footprint and promoting clean energy practices, supporting the County’s Sustainable Green Fleet policy, and furthering opportunities for tourism.² In September

¹ See “Leviton New York Station Award Agreement,” executed February 20, 2015 (detailing the terms and costs applicable to the nine charging stations installed on County properties in 2015).

² See *gen* “Ulster County has installed 9 electric car-charging stations, and they can be used for free” by Patricia Doxsey (Daily Freeman, August, 9, 2015), as well as “Opinion – Electric Charging Station” by the

of 2015, the Ulster County Legislature adopted a general policy for the stations, which in part regulated the use of designated parking spaces, provided for penalties to unauthorized vehicles, and required a usage report be presented to the Legislature and Executive.³ In December of 2015, at the behest of the Office of the Comptroller and Legislative Counsel, the Legislature passed an amended policy that would have required a reasonable fee for usage in order to cure any potential violation of the New York State Constitution’s Gift and Loan provision; however, it was subsequently vetoed by the County Executive, as it was declared to serve a permissible public purpose.⁴

Charging: By the Numbers

As of March 2016, 534 separate charging sessions, accounting for 3477.7 kWh in electricity, were

Office of the County Attorney (addressed to the Office of the Comptroller on October 5, 2015).

³ See “Resolution No. 332: Establishing A Policy For Use Of Electric Vehicle Charging Stations on Ulster County Property” by the Ulster County Legislature (September 15, 2015), available at http://ulstercountyny.gov/sites/default/files/Res.%20No.%20332%20-%20Exhibit%20A-%20Electric%20Vehicle%20Charging%20Stations%20Policy_0.pdf.

⁴ See “Resolution No. 446: Amending The Electric Vehicle Charging Station Policy To Require A Fee For Use” by the Ulster County Legislature (December 15, 2015), available at <http://ulstercountyny.gov/sites/default/files/Res.%20No.%20446%20-%20Exhibit%20A-%20Electric%20Vehicle%20Charging%20Stations%20Policy.pdf>; as well as the veto message signed by the County Executive on December 23, 2015, available at <http://ulstercountyny.gov/sites/default/files/Charging%20Station%20VETO.pdf>.



recorded across the nine stations.⁵ The following chart provides a breakdown of usage per station, including the average total duration of charges (i.e. how long a vehicle sits in a parking space) vs. the average charging time (i.e. actively charging a vehicle's battery).

Charging Station Location	Sessions ⁶	Energy (kWh)	Average Total Duration (h:m:s)	Average Charge Time (h:m:s)
<i>UC Courthouse</i>	163	1173	1:48:22	1:30:05
<i>UC Office Building</i>	126	448	1:55:38	1:11:03
<i>Trudy Resnick Farber Center</i>	100	948	5:20:21	3:17:49
<i>UC Public Works Complex</i>	29	387	3:47:39	2:47:20
<i>Ulster Avenue Office Complex</i>	26	141	1:07:16	1:01:17
<i>UC Probation Department</i>	23	136	1:40:17	1:20:07
<i>SUNY Extension</i>	22	76	1:30:24	1:17:59
<i>UC Health Department</i>	7	17	0:24:41	0:24:23
<i>UC Law Enforcement Center</i>	1	0	0:02:23	0:02:03

⁵ All data was received from ChargePoint, Inc., which operates and maintains the network of software and services used to monitor the charging stations and their applications, and is current as of March 2016 beginning from the inception of the program in mid-2015.

⁶ It should be noted that the figures from this chart (i.e. charging locations) were received approximately one week before the statistics in the second chart (i.e. driver residences), which is why sessions and energy consumption is shown to have slightly increased over that period. However, all information is current as of the date that the UC Dept. of Environment was required to issue a usage report to the Executive and Legislature in accordance with Resolution No. 332 of 2015.

While the Ulster County Courthouse enjoyed the greatest volume of energy consumption and usage frequency, the Ulster County Law Enforcement Center was at the bottom with only one session and zero kilowatt hours. Additionally, the Ulster County Health Department and Law Enforcement Center saw the lowest average charging times, but the Trudy Resnick Farber Center for Human Development and Public Works Complex had the highest.

The next chart summarizes usage patterns based on the zip codes registered to each vehicle. These figures are useful, as they allow for a comparison between resident and "out-of-town" drivers.

Driver Zip Code/Municipality	Sessions	Energy (kWh)
<i>12401 – Kingston, NY</i>	200	1243.45
<i>12449 – Lake Katrine, NY</i>	105	989.71
<i>12419 – Cottekill, NY</i>	47	109.63
<i>12572 – Rhinebeck, NY</i>	41	256.03
<i>Miscellaneous⁷</i>	40	209.61
<i>12477 – Saugerties, NY</i>	15	47.83
<i>12440 – High Falls, NY</i>	14	72.57
<i>12446 – Kerhonkson, NY</i>	12	39.17
<i>10514 – Chappaqua, NY</i>	9	268.19
<i>12018 – Averill Park, NY</i>	8	3.68
<i>12498 – Woodstock, NY</i>	6	11.04
<i>20850 – Rockville, MD</i>	5	51.39
<i>12534 – Hudson, NY</i>	4	9.25
<i>06883 – Weston, CT</i>	3	14.18
<i>12020 – Ballston Spa, NY</i>	3	22.94
<i>12525 – Gardiner, NY</i>	3	12.87
<i>18940 – Newtown, PA</i>	3	21.31

⁷ Drivers do not have ChargePoint accounts or have missing information.



10954 – Nanuet, NY	2	9.00
12561 – New Paltz, NY	2	13.93
14020 – Batavia, NY	2	14.92
14221 – Buffalo, NY	2	13.62
06033 – Glastonbury, CT	1	20.90
07945 – Mendham, NJ	1	5.81
12528 – Highland, NY	1	2.60
12571 – Red Hook, NY	1	4.35
12580 – Staatsburg, NY	1	1.16
90069 – West Hollywood, CA	1	7.81
10704 – Yonkers, NY	1	.71
10003 – NY, NY	1	0

originating from Kingston, Lake Katrine, and Cottekill – shows that they are responsible for about 55% of all charges. Therefore, keeping with the spirit of the initiative as far as being a catalyst for tourism, perhaps the service should remain free for the significantly small number of out-of-town users while implementing a low-cost permitting program for at least the few Ulster County residents availing themselves of this free offering. Further, more in the way of advertising and media exposure should be explored.

Although users have been identified from as far away as California, Maryland, Pennsylvania, and Connecticut, the bulk of charging sessions can be tied to locally based drivers. By looking at individual driver consumption figures, the predominant users of these stations have been out of Kingston, Lake Katrine, Cottekill, Rhinebeck, and Saugerties – accounting for over 76% of total charges from these locations alone. It should also come as no surprise that Kingston drivers overwhelmingly frequent the stations, as eight out of nine chargers are found within the City.

Findings and Recommendations

1) Primary usage has been from local drivers

While this fact is not by itself a negative, it undermines the program’s presumed appeal to tourists and non-residents. Based on the second chart listed above, only approximately 24% of drivers utilizing this service can be attributed to vehicles registered outside of Ulster County. Further, while this information is not presented in the above charts, user specific data from only the top four drivers who utilize this service –

2) Charging duration limits have been exceeded

According to Resolution No. 332 of 2015, which established a policy for usage, no vehicle may remain in a designated electric car charging station parking space for more than two hours. However, two locations have experienced average total durations and charging times well in excess of this limitation: Trudy Resnick Farber Center for Human Development (5 hours 20 minutes and 3 hours 17 minutes, respectively) and Public Works Complex (3 hours 47 minutes and 2 hours 47 minutes, respectively). Thus, a heightened monitoring standard should be implemented by grounds keeping or other staff in order to ensure that current protocols set by the Legislature are being followed. Otherwise, potential users may be dissuaded from actively engaging in this service if they see that certain parking spots are habitually occupied longer than allowed.

3) Locations are being under utilized

The charging stations at the Ulster County Health Department and Law Enforcement Center are simply going unused. Together, they account for



well under 1% of the total charging sessions for every station, as listed in the first chart. As these locations are somewhat off the beaten path for traveling purposes, perhaps the public would be better served by having access to more convenient destinations. Ulster County has the unique privilege of having three exits along the New York State Thruway, which is why we suggest moving these facilities closer to those areas in order to maximize potential tourist attractions, albeit at a separate cost to the County. Additionally, as County and taxpayer funds ultimately helped pay for the chargers' installation, the public has a right to realize a meaningful return on their investment.

4) Usage report is *past due*

In accordance with Resolution No. 332 of 2015, the Department of Environment was required to submit a detailed usage report to the County Executive and Legislature by March 1st, as well as every subsequent year. As far as our office is aware, this report has neither been created nor presented. In order to foster a transparent and accountable program, we strongly suggest that the appropriate department issue such report immediately so that a clear picture of the initiative may be taken into consideration by County leaders and administrators.