

Aptera to Visit Westport

Aptera to Visit CT

This is still tentative but we think it will happen. This will be a cool event, so we thought we'd tease it.

[Aptera](#) is a 3-wheeled vehicle with integrated solar. Due to its lightweight design and low drag coefficient, the trim level with the largest available battery pack has a range of 1,000 miles for about \$46,000. The solar array can charge 44 miles on a sunny day.

The event is anticipated to occur in mid-2021. It is a test drive event so it will be outdoors. Masking and social distancing requirements will probably still be in force at that point, but it worked out well for the Polestar event a couple of months ago.

Further information will be posted when available.

CHEAPR – Nov Update and Prolonged Limbo

CHEAPR Remains in a Limbo Which Might End Soon

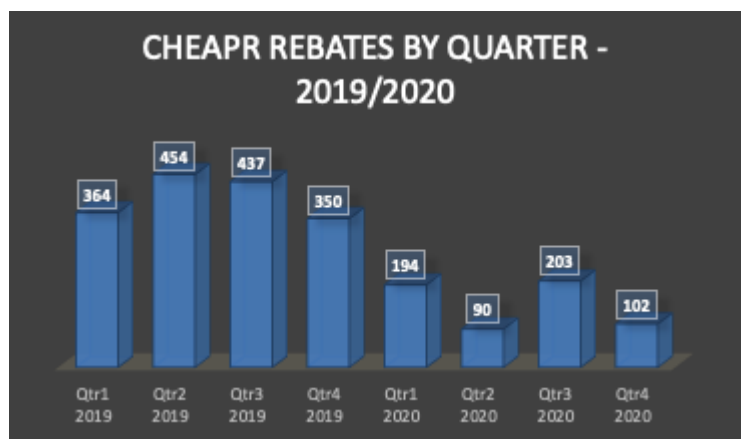
The combination of the 2019 legislation authorizing a modest, but steady funding stream, along with new program elements,

and changes made by DEEP to the program in October 2019 that were more financially conservative have left the program in limbo. There has been a notice that “CHEAPR is EVolving” on its website for a year that there will be revisions but these have not been finalized.

The immediate impact of the October 2019 changes has been a dramatic underspending relative to the budget. Through November, the program awarded 589 rebates with a value of \$629,500 against a budget of \$3 million. The program incurs some other costs aside from consumer rebates, namely dealer incentives and admin charges paid to the program administrator, the Center for Sustainable Energy. DEEP has projected a final underspending of \$2.2 million. Fortunately, these funds will roll over into 2021.

Program Parameter Changes and COVID-19

The downturn in rebates was made even more severe by the pandemic and recessionary economy, and this perfect storm led



to the extremely low numbers we have been seeing through all reported data for 2020. November continued the pattern with only 40 rebates awarded. This chart of rebates by quarter for 2019 and 2020

illustrates this clearly. The downturn began in Q4, 2019 (the changes were made mid-October of that year), declined further in Q1, 2020, when the economy was still strong for the first 10 weeks, and then really tanked in Q2, 2020 during the lockdown. There has been a modest recovery since then (keep in mind that Q4, 2020 includes only 2 months of data).

New CHEAPR Structure and Forthcoming Vote

Responsibility for CHEAPR transitioned from DEEP to a board that was authorized by the legislation and had a quorum by the beginning of the year. DEEP still retains a presence on the board and administratively the board lives within DEEP. The board has been divided and no fewer than 9 scenarios have been modeled and recently presented to the board. These represent different levels of incentives, where to place the MSRP cap, the newly authorized income-limited incentives for used EVs, and a supplemental incentive for new EVs, as well as a possible temporary increase in incentive levels as a stimulus.

We expect a vote to occur sometime in the next few weeks.

This is the position of the EV Club of CT and the broader [CT EV Coalition](#):

- Raise the MSRP cap and incentive levels to where they were before being lowered in October 2019.
- Implement an income-limited used EV incentive.
- Implement an income-limited supplemental incentive.

We feel the finances, especially given the rollover funds, are adequate to support this model in 2021. The EV Coalition plans to seek additional funding for the program for 2022. There is the possibility that funds may be forthcoming from the Transportation Climate Initiative beginning in 2023. Finally, we want to thank everyone who submitted public comments when they were solicited by DEEP over the summer.

At such time as the program revisions are finalized, the updates will be posted to the [incentives](#) page on this website.

Dr. Roger Kuhns to Discuss a Carbon Tax Proposal at Next Meeting

Proposed Carbon Tax with Consumer Dividend

Join us on January 14th at 7 PM for a presentation by Dr. Roger Kuhns about a carbon tax proposal and dividend being advocated by Citizens Climate Lobby.

Dr. Roger Kuhns, CT State Coordinator for the Citizens Climate Lobby, is president of SustainAudit, LLC, and founder of the publishing/film company musicT0ears Press. He has over 40 years of professional experience in geology, sustainable practices and environmental science, renewable energy, sustainable urban agriculture, and is a writer, award-winning filmmaker, and monologist performer. He has integrated the environmental sciences, engineering, natural resources, community enrichment and economics into sustainable development work and strategic planning for changing and learning organizations.

A Zoom link will be sent to our email list. If you would like to join the list, please use the contact form on the website.

2020 Wraps With a Bang

2 Environmental Wins Conclude the Year

2020 is a year most of us will be happy to see in the rearview mirror. But the last couple of weeks have brought two wins that deserve to be celebrated.

Transportation Climate Initiative

Governor Lamont signed the Transportation Climate Initiative Memorandum of Understanding today, December 21. TCI is a cap and invest program that will place a tax on fossil fuel at the wholesale level that will yield funds for the state to invest in clean transportation. It is anticipated that \$89 million could flow to the state in 2023, rising to \$117 million in 2032 with a reduction in greenhouse gas emissions of 26%. The program is similar in overall design to the RGGI cap and invest program that has been in place for power plants. The TCI iteration is more complex in that there are many more point sources of pollution. The reason the funds are not anticipated until 2023 is that there is still a considerable amount of rulemaking that has yet to occur. For a thorough piece of reporting on this, see [this article](#) in the CT Mirror.

Monetizable Credits for EV Charging Stations



The second piece of good news is that the CT Green Bank has established a carbon credit monetization program for the owners of EV charging stations. This is not for residential owners. It is for businesses or other entities that control dozens or hundreds of charging stations. Details [here](#).

CHEAPR

We have been closely following the [CHEAPR](#) saga, the year-long and still unresolved effort to revise program parameters, and have been publishing monthly program status from the CHEAPR dataset. It is anticipated that the board will vote on this reasonably soon.



CHEAPR Rebate History

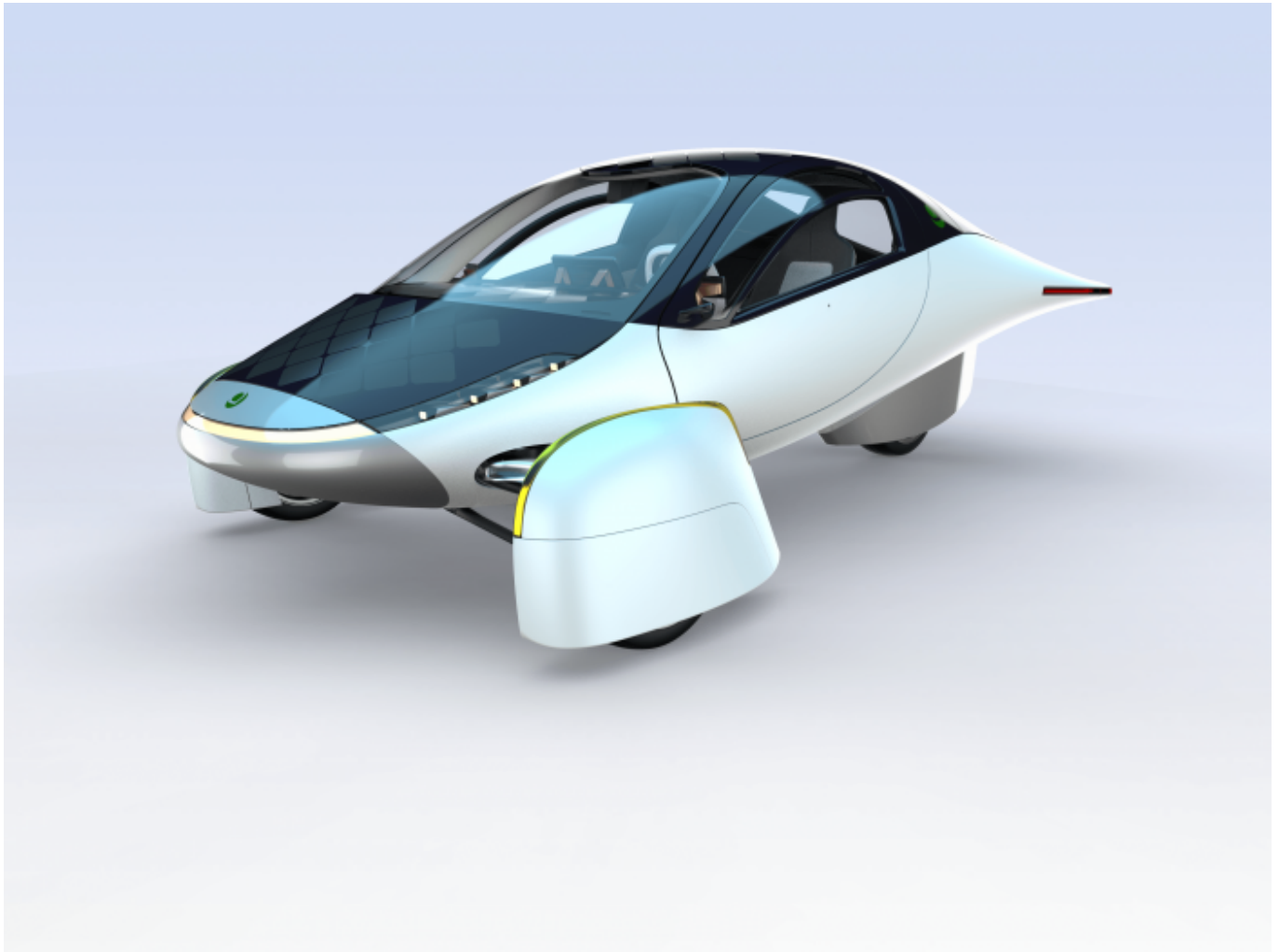
Events



2020 started off with one of the best-attended events in the club's history when Westport Police Chief, Foti Koskinas, brought the fully customized [Tesla Model 3 cruiser](#) to a club meeting in February. After that, the pandemic lockdown threw sand in the gears of our event planning, though we still managed to hold 2 socially distanced outdoor events. The first was a fully-subscribed [EV parade](#), held in partnership with Sustainable Fairfield, during National Drive Electric Week. The second was a test-drive event of the [Polestar 2](#) BEV and the Polestar 1 PHEV.

There are a number of new EV introductions anticipated for 2021 and we hope to preview some of these for members. One thing that we can tease is a tentatively scheduled mid-year test-drive event for the new Aptera EV, a 3-wheeled vehicle





with fully integrated solar and the lowest drag coefficient of any vehicle, the top trim level has an electric range of 1,000 miles for about \$46,000.

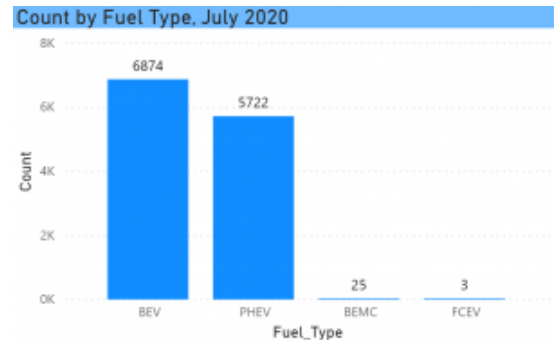


FreeWire Charger

As we were forced to move into Zoom mode to hold events, we lined up several speakers. We had Gabe Shenhar from Consumer Reports give us a detailed, early preview of his Tesla Model Y test-drive. Peter Millman spoke to us about [Community Choice Aggregation](#), and John Erdman of [FreeWire](#) spoke about their

charging solution with a self-contained battery that allows DCFC high-speed charging while avoiding demand charges.

Data



EVs by Fuel Type July 2020

We continued with our tracking of EV adoption levels in the state, which is published to the website via the [Interactive EV Dashboard](#). This is the only publicly available, free-of-charge, resource for this level of detail that we are aware of. We also submitted an information request to obtain [CHEAPR rebates by dealership](#). We have had numerous requests for dealership recommendations and this was our way of responding to this using quantifiable data that applies statewide.

Opinion Leadership

The club continues to present to interested organizations, participate on panels, respond to media requests, and publish opinion pieces, in the latter case with Op-Eds in The Hartford Courant, The Hartford Business Journal, and CT News Junkie.

As we gradually emerge from this pandemic cocoon, we look forward to a more active year in 2021. We have a speaker on January 14th who will be discussing a federal carbon tax proposal. You may ask how this intersects with TCI and that is one of our questions.

Best wishes for a safe and healthy holiday season!

2020 – A Lost Year for CHEAPR

48% Month Over Month Drop in October Rebates

Newly released data, updated with transactions through October 31, show a decline from September to October from 97 to 59 rebates. (The September number was restated and is slightly higher than the initial reporting.) The expenditure for consumer rebates for the 10 months of the year to date is \$587,000. The annual budget (including admin and dealer incentives) is \$3 million. (The consolation is that the unspent funds will be rolled over into 2021.) There have been 62% fewer rebates issued year over year, Jan. through Oct. (546 vs 1435).

The Tesla Model 3 (15 rebates) and the Toyota Prius Prime (13) were the only vehicles in double digits for the month.

2020 has been a lost year in many ways that are more important than CHEAPR. But in our EV world, this incentive program has been in need of revamping and it hasn't happened. We will discuss our take on why in a moment.

In another 6 -8 weeks or, we expect we'll have the data to see if this was a lost year for EVs in general in CT.

We have blogged in the past about how we feel that CHEAPR has been a meaningful program, having given out over 6,000 rebates

since inception. But rebate numbers, which had been steadily building, have reversed course since the changes in October 2019 that lowered the incentive levels and the MSRP cap, which was then further exacerbated by the recession.

Revisions to the program that were promised for 2020 are still pending. The most recent board meeting was on October 9th. There is no meeting posted on its website as of this writing. The CHEAPR board apparently remains divided as we await a vote on revised parameters. (This is our reading of the situation. The EV Club is not represented on the board, something we have requested.)

The legislation passed in May 2019 authorized a used EV incentive. A [revised program](#) plan was submitted to the board in July that included an income-limited used EV incentive and an income-limited supplemental incentive for new EVs. There has also been discussion of a time-limited “stimulus” incentive adder.

From our perspective, the impasse stems from whether to restore the base incentive and MSRP cap to the levels of before Oct 2019. (The used and supplemental incentives haven't been areas of controversy.) DEEP is concerned that doing that and adding the new incentives risks depleting funds that could result in a temporary interruption in the program. They rely on modeling from their program consultant to assess this. (Though there was another round of modeling requested in October that has not been publicly disclosed to this point).

There was a second reason articulated by DEEP, which is that for the more expensive vehicles, consumers will buy them anyway, rebate or no. We don't see it that way but won't get further into that here.

Time to Restore the Prior Incentive Levels

The EV Club, along with the broader CT EV Coalition, believes there is a strong case for restoring the pre-October 2019 incentive levels and MSRP cap, along with introducing the used and supplemental incentives.

- The program is clearly failing this year.
- As of the most recently published EV registration data by the DMV in July, the state is losing ground relative to the commitments made in the Multi-state Zero Emission Vehicle Action Plan.
- There will be \$4.9 million in available funds in 2021 due to this year's underspending and some unused bridge funds from 2019, a 63% increase relative to budget.
- The recessionary economy is likely to persist for another 6 months. Let's hope it is only that long. (It also makes for a difficult environment in which to model.)
- Due to the income-limitation aspect of the used and supplemental incentives, software development is required for implementation. They are thus unlikely to be ready for launch on January 1.
- The take rate for the used EV incentive is likely to be low in the short-term.
 - The incentive is income-limited.
 - The dealership representation on the board stated that the current market for used EVs is small. Our [analysis](#) of DMV registration files is consistent with this perspective.
 - As noted, the start date is unknown at this time.
 - There is still a shortage of charging infrastructure in the urban communities that this is intended to most benefit. This applies to the supplemental incentive as well. Over time, this

will improve, but it will still be an issue in 2021.

- For BEVs, which, as noted in DEEP's EV Roadmap, have a greater impact in lowering greenhouse gas emissions, there just aren't a lot of them available under the current \$42,000 cap. As EV introductions move more toward larger battery packs, SUVs, crossovers, and other popular (and larger) form-factors, this is likely to be even more the case.
- Even at the old (higher) levels, the CT plan is less generous than what is offered in other, nearby states.
- Finally, the EV Coalition intends to lobby for a larger share of the clean-air fee to be devoted to CHEAPR. If successful, the budget issue will be ameliorated. If not, there will be plenty of runway to make adjustments, not to mention empirical data as a basis on which to do so.

Mustang goes Electric with Mach-E

The Ford Motor Company bets the Mustang brand on the battery-electric Mustang Mach-E!

Post by Larry Thompson



The original Mustang was launched in 1964 at the World's Fair in New York (pictured). It had a 6 cylinder gasoline engine producing 101 horsepower and could go from 0-60 mph in 8.2 seconds. It cost \$2,400 and sold 22,000 cars on the first day, more than 400,000 cars in 1965, and more than 10 million to date.

Times change, and the 2021 Mach-E is a battery-electric SUV with a 75 – 98 kWh battery located between the wheels for maximum cornering performance. The performance (GT) model has 459 horsepower and can go from 0-60 mph in less than 4 seconds. The Mach-E has a range of 210 – 300 miles and can be charged at home or any EV charging station with Combined Charging Systems (CCS) connectors.

Ford tells us the car can charge from 10% to 80% capacity in 38 to 45 minutes using public Level 3 charging stations. Compatible charging providers include EVGO, Blink Charging, and Chargepoint. Every Mach-E also comes with 250 kilowatt-hours of free charging at more than 400 Electrify America fast-charging stations. Additionally, the FordPass Charging Network consists of more than 13,500 charging stations in North America.

Because the Mach-E is a battery-electric vehicle, it produces no tailpipe emissions or greenhouse gases which helps reduce the effects of climate change.

Mach-E Arriving in Showrooms Later This Month

The Mach-E will be in showrooms in late November and vehicle shipments are expected by the end of the year. Pricing ranges from \$42,895 to \$61,600. As of this writing (November 2020), the Mach-E qualifies for a Federal incentive of \$7,500. However, there is no incentive in Connecticut as the CHEAPR program currently only provides incentives for EVs with a maximum MSRP of \$42,000.



Thanks to the folks at Stevens Ford and Lincoln in Milford, Connecticut for providing the opportunity to photograph the Mach-E.

Community Choice Aggregation to be Subject of Dec 2 Meeting

Community Choice Aggregation Can Provide a Cleaner Grid and Lower Electric Rates

EVs enable us to drive with zero emissions. But EVs can be an even cleaner choice when the electricity used to charge the battery comes from a clean grid.

On December 2, at 7:00 PM, the club will host a Zoom meeting where the featured speaker will be Peter Millman of People's Action for Clean Energy (PACE). He will be speaking to us about Community Choice Aggregation (CCA) and how we can go about making this an option for CT residents.

CCA involves communities controlling power procurement and offering modern energy products and services. These include programs that encourage more rooftop solar, battery storage, energy efficiency, demand response, and EV infrastructure. The goals of CC are to reduce energy costs, lower GHG emissions, and increase resilience. The utility still owns, operates, and maintains the distribution infrastructure.

This is on the docket of the Public Utilities Regulatory Agency (PURA), but it requires action by the legislature as well. Peter will explain the details, the next steps, and what citizens can do to support this initiative.

CCA is operational in a number of other states where it has successfully enabled a cleaner energy mix and lower electric rates.

CCA can happen. This is not tilting at wind turbines!

Polestar Visits Westport

Polestar Test Drive Event

A picture-perfect Indian summer day set the scene for an EV Club event sponsored by Manhattan Motors, the regional dealer for the new Polestar brand. Polestar is Volvo's racing brand but has now been spun off as a standalone brand selling high-

end EVs.

Polestar vehicles are manufactured by Geely, the parent company of Volvo. There are two Polestar vehicles, the Polestar 1, a plug-in hybrid, and the Polestar 2, a battery-electric vehicle with 233 miles of range and a 0 to 60 MPH sprint in under 5 seconds.

The Polestar 2 starts at about \$60,000 with a performance version that sneaks past \$70,000. The Polestar 1 starts at \$155,000 and there are a few interior options that can add another \$5000.

Both of the Polestar models have all-wheel drive. Delivery of these vehicles will begin within a month.

The Polestar distribution model is different than a traditional automobile company and different from Tesla. It sells through dealerships but only has 4 licensed dealerships in the country, 2 in the San Francisco metro area, 1 in Los Angeles, and one in New York City. The company has a "concierge"-style service model and the vehicle is delivered to the consumer's residence. Unlike with Tesla, they can deliver a vehicle to a CT address because they are a dealership, meaning that Manhattan Motors buys the vehicles from Polestar. For servicing, Polestar's sister company is brought into the process. Volvo dealers will be able to service these vehicles. The concierge model extends to service. The car is retrieved from and returned to the customer, and a loaner is provided.

Polestar advises that there will be a subsequent version of the Polestar 2 with a smaller battery pack and without all-wheel drive at a lower price point. No ETA at this time.



Electric Vehicles are Bipartisan

EV Incidence and Political Party Registrations by City

As this is being written on Election Day, and with an enormous chasm between the environmental/climate change plans of the two presidential candidates, we thought it a good time to look at how EVs fit into the CT political landscape based on voter registration in Connecticut.

I do not have data at the individual person level. I am working with counts at the city level – of EVs, median household income, and voter registration.

The most highly-correlated factor with respect to EVs is income. With Tesla the dominant, and pricey, make, EVs still carrying a higher cost than ICE generally, and limited supply of affordable used EVs, that isn't surprising. Also, there is still a significant lack of access to charging in our more urban areas with many people living in multiple unit dwellings. For that reason, in the charts below, I have filtered out the roughly one-third of cities with a median household income of <\$75K in order to obtain a sharper focus on the political registrations.

The chart at the top shows EV incidence and voter registration counts by party by city. The bars are all the same size because they total back to 100%. The variations in proportions by each color are driven by the proportion of voter registrations, which come from CT.gov, by party. Red and blue are obvious. The gold represents both independents and minor party registrations. Minor parties are a very small part of that grouping. The line shows EVs as a percentage of all vehicles within each city.

This screengrab is an excerpt. The full chart has been added to the [EV Dashboard](#).

Bipartisan presence of EVs

There is not a significant correlation between voter registration profile and EV incidence. The two top EV cities, Westport and Weston, are Democratic redoubts. The next two cities are New Canaan, where registered Republicans outnumber Democrats by 2:1, and Greenwich which also has a Republican skew. This is followed by Wilton, which is evenly divided, and then Darien, which has a similar profile to New Canaan. We regard this bipartisan profile to be encouraging and feel that

this, and the environment in general, shouldn't be a partisan issue.

2016 Election Profile

CT is a blue state and voted for Clinton in 2016. The two charts below filter the chart by which cities voted for Clinton vs. Trump. The hypothesis was that the profiles might be more extreme than overall registration, and that turns out to be the case. (The income filter remains in these two charts.)

Looking at the data this way, as presumably, Trump won the most conservative cities, a clear difference emerges with much higher EV incidence in Clinton cities, including Republican-dominant cities that voted for Clinton.

Clinton Cities 2016

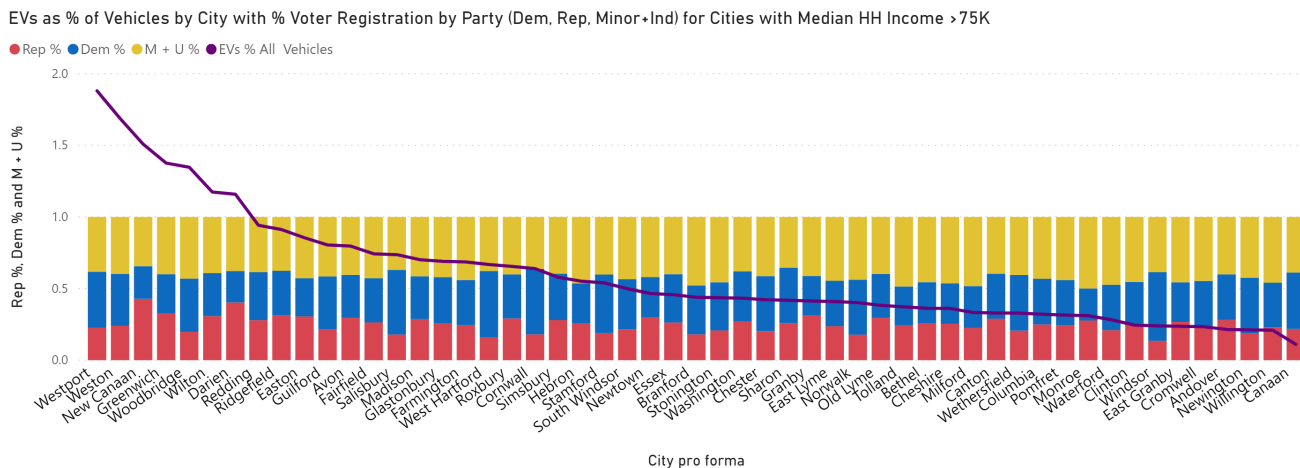


Chart: Barry Kresch

Trump Cities 2016

Rep % Dem % M + U % EVs % All Vehicles

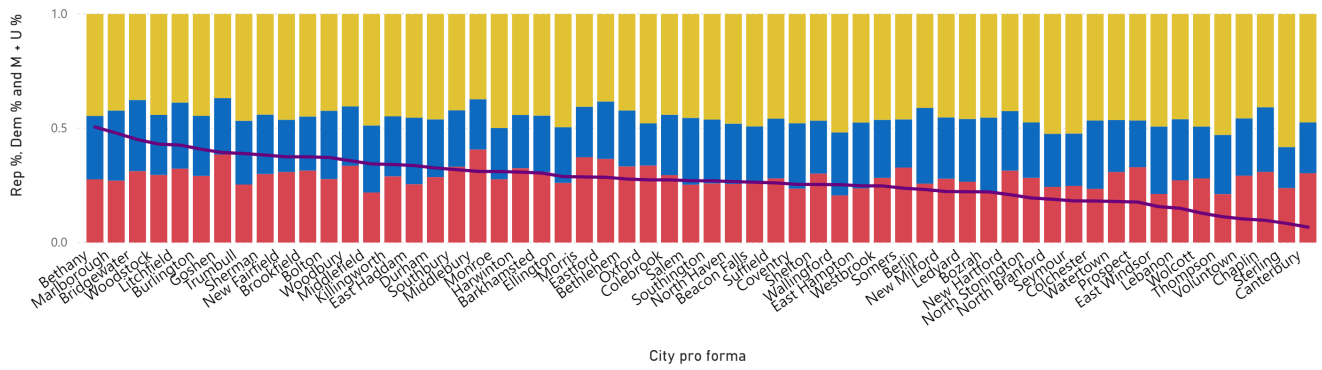


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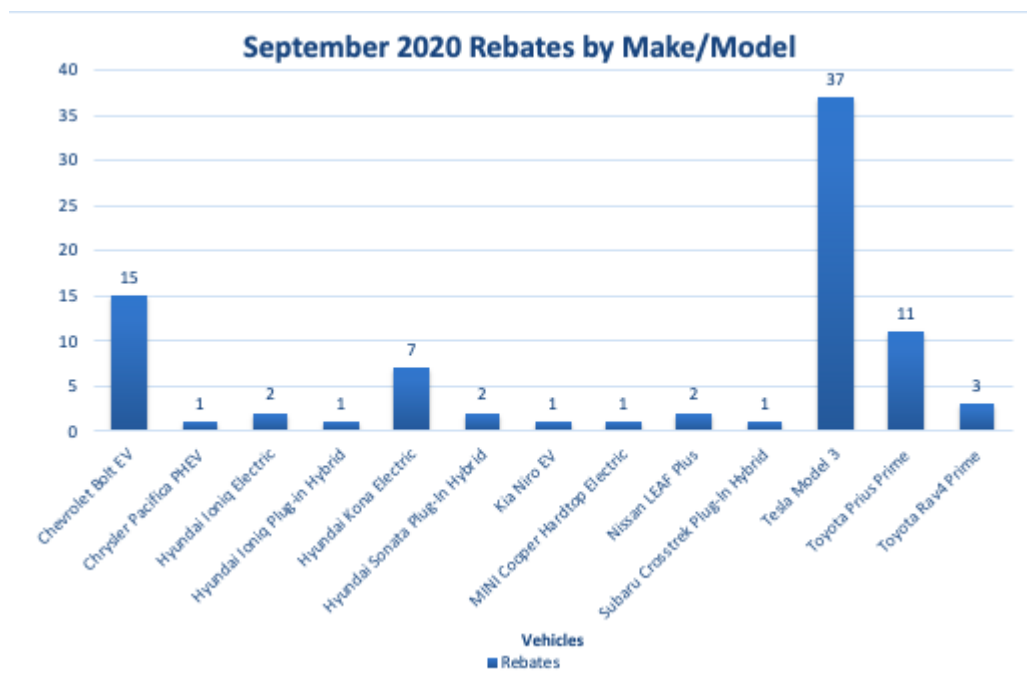
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September CHEAPR Stats Update and Pending Vote

Spike in Model 3 Rebates leads to Slightly Stronger Rebate Activity in September

The September data were published on Friday, Oct. 30th, and show 84 rebates awarded with a \$104,000 spend. Also, August was restated with rebates increasing from 40 to 44. A restatement of the prior month is common with these data releases.

The base-level trim of the Model 3 can still qualify for a rebate, even under the lowered \$42,000 MSRP cap, and when those numbers are up, it raises the overall level. There were 37 Model 3 rebates, followed by 15 from the Chevy Bolt, possibly driven by some significant discounting. The spend level was \$104,000, still pacing well under the allocated budget.



Rebate awards total \$402,000 for all of 2020 through September against an annual budget of \$3,000,000 (less admin and dealer incentives).

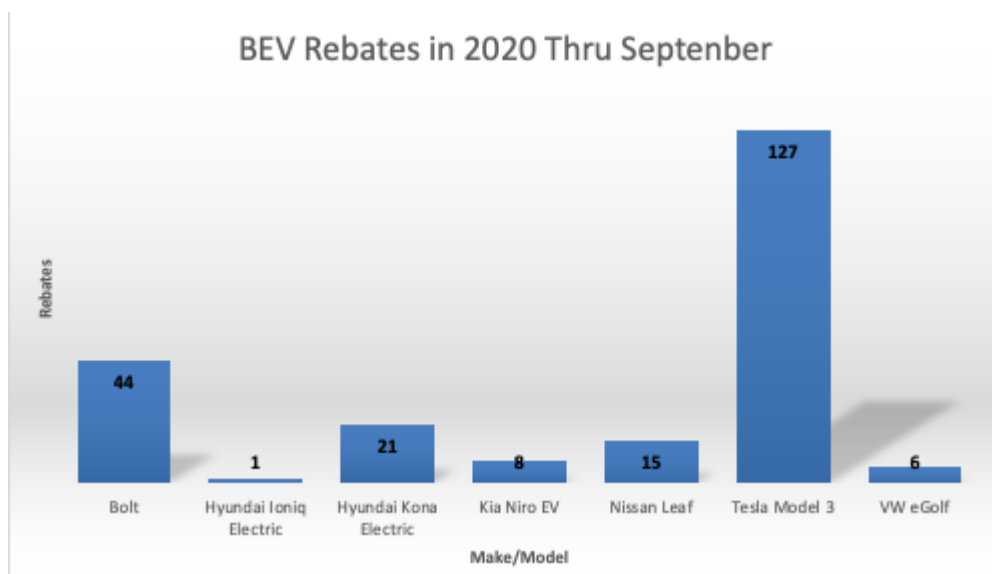
Pending Vote

CHEAPR changed the size of the rebates and the MSRP eligibility cap in 2019, which led to a large drop in the number of rebates awarded and the dollar amount spent. This was done at the time out of concern for the possibility of funds running dry late last year. Ever since then, there has been an announcement on the CHEAPR home page that revised rules will be coming in 2020. New rules were finally proposed in July. There was much disagreement about the proposal. Subsequent meetings in August, September, and October failed

to resolve differences. No proposal has yet to be brought up for a vote. No meeting date is posted as of Nov 1. The CT EV Coalition does not like the incentive structure as originally proposed.

DEEP has asked their consultant, the CSE to go back and model additional scenarios. There are a number of variables in play, including an income-limited used EV incentive, an income-limited supplemental incentive, temporary stimulus incentive during this period of a weak economy, size of the rebate, and MSRP budget cap. We have blogged about a number of these issues before – [here](#) and [here](#) most recently.

The biggest sticking point, in my opinion, is the MSRP cap. At \$42K, it is lower than neighboring states – NJ (\$55K), MA (\$50K), NY (\$60K). More to the point, there just aren't many BEVs that qualify. Below is the count of rebates by BEV model for 2020 to date.



There are only 7 models receiving rebates and just 4 that received more than single digits. If we exclude the Model 3 as our estimates are that ~75-80% of them are not eligible, and the eGolf, which is being discontinued, that leaves only 5 that are eligible, 3 with more than single digits. The eGolf

is being replaced with the ID4, which will be ineligible. A loaded Bolt or Leaf Plus will exceed the threshold. The new Ford Mach-E begins at \$43K. And, of course, the base trim level of the Tesla Model Y is over \$42K. We feel CHEAPR needs to support the new generation of EVs, which include popular SUV or crossover form factors. Let consumer choice dictate where the rebates go and not put a thumb on the scale.