MISSOURI PUBLIC SERVICE COMMISSION

STAFF

REBUTTAL REPORT

EVERGY METRO, INC. d/b/a EVERGY MISSOURI METRO
AND EVERGY MISSOURI WEST, INC. d/b/a
EVERGY MISSOURI WEST

CASE NO. ET-2021-0151

Jefferson City, Missouri
August 16, 2021

** Denotes Confidential Information **

STAFF REBUTTAL REPORT

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Recommendation and Summary

Staff recommends the Commission enter an order rejecting the Applications (and supplemental request) of the Evergy Metro, Inc. d/b/a Evergy Missouri Metro and Evergy Missouri West, Inc. d/b/a Evergy Missouri West (collectively, "Evergy") for approval of a portfolio of transportation electrification programs, variance from Commission rules, authority to defer program costs to a regulatory asset and a finding on the prudence of expansion of its "Clean Charge Network," and the associated tariff sheets contained in YE-2021-0160 and JE-2021-0161. Staff does not oppose increasing the cap on Clean Charge Network stations for Evergy Missouri Metro to include 50 stations contemplated by the Streetlight Corridor pilot program, pending development and adoption of appropriate pilot metrics and learning objectives specific to Evergy. Additionally, Staff recommends the Commission order Evergy to file a report regarding the pilot after three years. The estimated budget for this pilot program is $800,000.

Staff recommends that the Commission reject the following requests, except as provided above,

1. "Evergy requests that the Commission authorize the Company to use a regulatory asset tracking mechanism to track and defer the pilot program costs which include rebate incentives and certain associated customer education and administrative costs." – Evergy Transportation Electrification Portfolio Filing Report,[1] ("Report") page 31.

[1] Evergy filed this Report as part of its *Application of Evergy Missouri Metro and Evergy Missouri West for an Order Related to the Approval of a Transportation Electrification Portfolio* ("Application").

2. "Evergy requests that the Commission find that the limited and targeted CCN expansion plans Evergy has announced in this filing are prudent from a decisional perspective" -Report page 32.
3. "Evergy requests a variance of subsections 4 CSR 240-14.020(1)(B), (1)(D), and (1)(E) only as those subsections are applied to the pilot programs as described in any approved compliance tariffs resulting from this case."

The budget requested by Evergy for these activities is summarized below; however, it does not include the cost of the supportive infrastructure, such as distribution and transmission capacity or additional cost of procurement of generation capacity:[2]

Table 1:

	Metro	West	Total
Expand Clean Charge Network	$ 1,200,000	$ 1,600,000	$ 2,800,000
Residential Customer EV Outlet Rebate	$ 650,000	$ 350,000	$ 1,000,000
Residential Developer EV Outlet Rebate	$ 30,000	$ 60,000	$ 90,000
Commercial EV Charger Rebate	$ 6,500,000	$ 3,500,000	$ 10,000,000
Customer Education and Program Administration	$ 1,100,000	$ 600,000	$ 1,700,000
	$ 9,480,000	$ 6,110,000	$ 15,590,000

Finally, while Evergy denotes these programs as "pilots," it fails to provide any draft learning objectives or program metrics that may justify "pilot" designation as an exception to the general prohibition against unreasonable discrimination in ratemaking.

Rate Tariff Sheets and Rate Freeze

As summarized below, Evergy proposed two sets of tariff sheets containing new rate schedules that are separate from Evergy's proposed electrification transportation programs.

- **Business EV Charging Service, Original Sheet No. 158 ("BEVCS"):** This tariff establishes a rate for the sale of electricity "[t]o any non-residential customer using electric

[2]The lighting portion of CCN expansion request does include distribution costs.

service for the exclusive use of charging electric vehicles." An option under this service includes a renewable energy credit ("REC") acquisition/retirement program.

- This tariff establishes a rate for the sale of electricity outside of a general rate case in apparent contravention of the rate freeze accepted by Evergy Missouri West and Evergy Missouri East in its election of PISA accounting treatment, as will be explained fully by Staff legal counsel in its post-hearing brief. The rate values contemplated, if lawful, require additional study and refinement, as do the terms of service including the REC acquisition/retirement program.
- **Electric Transit Service, Original Sheet No. 159 ("ETS"):** This tariff establishes a rate for the sale of electricity "[t]o any non-residential customer using electric service for the exclusive use of charging electric public transit vehicles." An option under this service includes a REC acquisition/retirement program.
- This tariff establishes a rate for the sale of electricity outside of a general rate case in apparent contravention of the rate freeze accepted by Evergy Missouri West and Evergy Missouri East in its election of PISA accounting treatment, as will be explained fully by Staff legal counsel in its post-hearing brief. . The rate values contemplated, if lawful, require additional study and refinement, as do the terms of service including the REC acquisition/retirement program.

Evergy asserts that the rates it proposed for the BEVCS and ETS tariffs are "revenue neutral," under an interpretation of those words. This interpretation means the addition of a customer on the new BEVCS and ETS rate tariffs would have approximately the same revenue impact as a new LGS customer coming onto the LGS rate schedule, assuming the LGS customer has a

class-average load factor.[3] However, these are not reasonable assumptions. The Company has calculated the rate values using the assumptions that an EV charging station is similar to that of an LGS customer and will cause no additional transmission and capacity costs, and seeks to implement these rate schedules outside of the context of a general rate proceeding and without evaluating all relevant factors. For example, the minimum demand to be served on the LGS rate schedule is 150 kW, yet as further mentioned below, an L2 EV charging station may be anywhere from 3.8 – 19.2 kW and DCFC station may be anywhere from 50-350 kW. Depending on the number and type of charging station installed, a customer may have the equivalent demand requirements of a Small General Service customer or a Large Power customer rather than a Large General Service customer. It is not reasonable to develop a rate schedule based on applying assumed revenue levels from a given size of customer to customers of significantly different sizes, let alone to do so in the absence of billing determinants, cost of service data, and other vital information determined only in the context of a general rate proceeding. The rate schedules proposed by Evergy in this matter are not only unreasonable, but also violate the prohibition on single-issue ratemaking.

The Company's proposed BEVCS and ETS rate schedules, do not prohibit separately metered EV charging stations from being served on one of Evergy's existing rate schedules and therefore, are not needed in order for EV charging stations to be served. Staff recommends the Commission reject the Company's proposed BEVCS and ETS rate schedules absent a general rate proceeding. As discussed in the March 29, 2021 "Staff Recommendation" pleading and will be further explained by Staff legal counsel in its post hearing briefs, Evergy's request to establish and modify

[3] "Revenue neutral" is more commonly used to refer to a redesign of rate elements across one or more rate schedules where all applicable determinants are known with a relatively high level of certainty. A truly "revenue neutral" adjustment or action is one that results in no increases or decreases to the revenue billed by the utility.

rates is contrary to 393.1655.2 RSMo, which prohibits rate modifications for a period of three years for utilities electing to use 393.1400's plant in service (PISA) deferral accounting.[4]

As noted above, Staff recommends rejecting the BEVCS and ETS rate schedules proposed by Evergy. However, if the Commission approves the Company's BEVCS and ETS rate schedules, Staff recommends the Company use the revenue received from the rate schedules to offset the costs Evergy is requesting to defer to a regulatory asset account.

Staff Expert/Witness: Robin Kliethermes

Residential-focused Rebate Programs[5]

Evergy is proposing two Residential programs. The first program is Evergy's Residential customer EV outlet rebate program, which provides a rebate to residential customers for the installation of a dedicated 240V, 40 amp or greater circuit. To be eligible for this rebate, customers must own or lease an EV and install the applicable outlet. The tariff does not require that customer receiving the rebate to purchase, install, or use an L2 charger. The other Residential program is Evergy's Residential developer EV outlet rebate program, which provides a rebate to a builder or developer of a new residential construction project to install a dedicated 240V, 40 amp or greater circuit. To be eligible for this rebate, the builder only has to provide proof the outlet was installed,

[4] The only exemptions are for rates promulgated under a statutory rider. There is no statutory rider for electrification or EV charging.

[5] **Rebate Portfolio, Original Sheet No. 160 et seq.:** "The purpose of the Transportation Electrification Pilot Program (Program) is to stimulate and support the development of infrastructure within the Company's service territory needed to accommodate widespread adoption of electric vehicles (EVs). This will be accomplished by providing targeted incentive offerings intended to overcome market barriers to deploying charging infrastructure in residential and commercial settings."
Residential Customer EV Outlet Rebate, Original Sheet 160.3: "The Program provides a rebate for the installation of a dedicated 240V, 40 amp or greater, circuit, including a NEMA 14-50 outlet for EV charging….Residential customers are eligible to receive a rebate for the lesser of 50% of eligible installation costs or $500 per outlet with a maximum incentive of (1) one per premise."
Residential Customer Developer Rebate, Original Sheet 160.4: "The Program provides a rebate for the installation of a dedicated 240V, 40 amp or greater, circuit, including a NEMA 14-50 outlet during new residential construction.…Builders and developers are eligible to receive $250 per outlet with a maximum incentive of (1) per premise."

with no restriction on the outlet's placement or use. For both programs, Evergy first assumes that if a 240 outlet is present, the participating customer/homeowner or future customer/homeowner will purchase a L2 charger. Next Evergy assumes, as described in more detail below, that these customers will charge their EV in a manner that would be beneficial to both Evergy's system and all of its customers, without a managed charging program or participation in the Company's Residential time of use rate schedule.

Through the technical conferences, Staff came to understand that Evergy's position for the proposed "Residential Customer EV Outlet Rebate" and "Residential Developer EV Outlet Rebate" programs is that there are currently customers who own EVs who do not use Level 2 charging, and that these customers are consuming approximately 10% more energy than is necessary and are not charging at times that are most beneficial to the grid and other Evergy customers. Further, Evergy's position is that the Residential programs proposed by Evergy will cause EV charging load to shift to times more beneficial to the grid and to other Evergy customers, and that the load will be reduced as an energy efficiency gain.[6] Evergy's position is that these benefits will be realized through an education campaign to the customer rather than a requirement to participate in a managed charging program with demand response requirements or even through requiring participation in Evergy's existing Residential time of use rate schedule. However, the

[6] See Appendix A, "Education Slides from MPSC Conference 3." Slide 15, "062121 Meeting Guide – MPSC Tech Conference 3.pdf".
"• The primary avoided cost benefits of the Residential Customer EV Outlet Rebate program are load shifting and efficiency gains.
• With level 2 charging, the vehicle owner can shift charging from the unmanaged home load profile to the smart charging managed load profile. This shift in load greatly reduces on peak usage and results in avoided capacity benefits.
• Level 2 charging is approximately 10% more efficient thus requiring less energy to charge the vehicle. This results in avoided energy benefits.
• The managed and unmanaged load profiles were provided by EPRI. The difference in the managed and unmanaged load profiles was isolated and modeled in DSMore software along with the program costs.
• Program costs include admin costs, rebates and infrastructure costs."

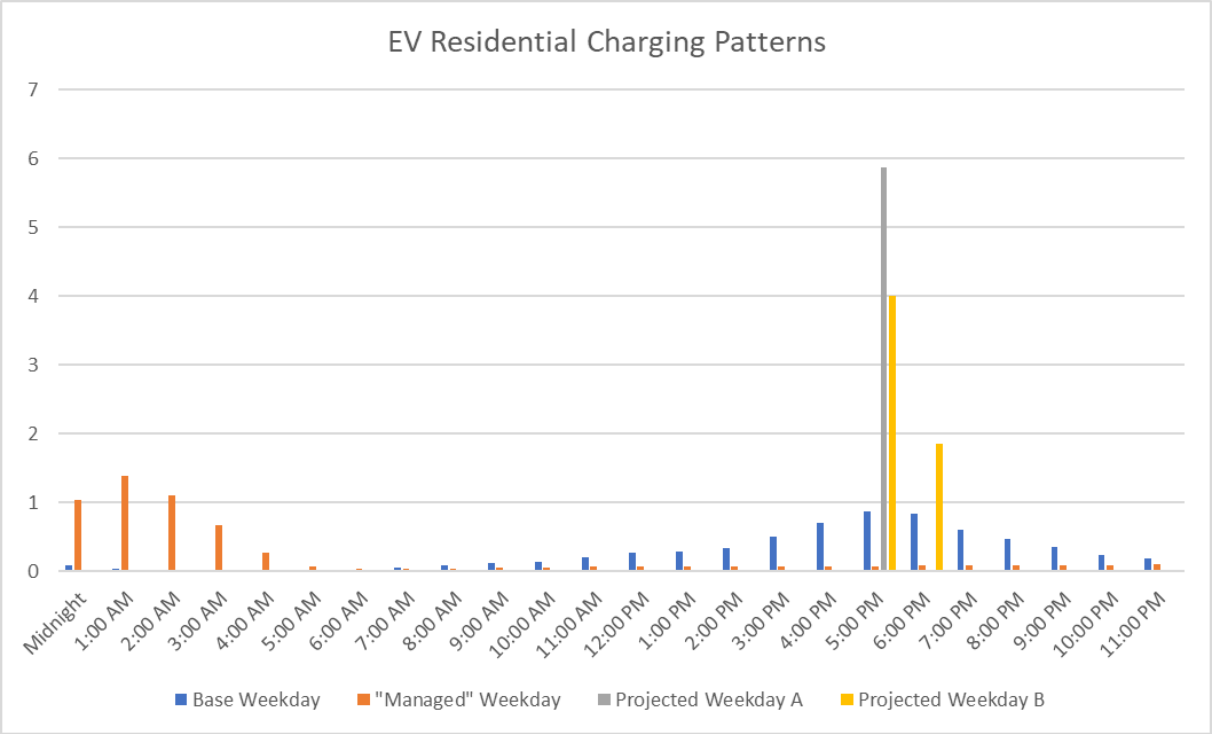
content, goal, and distribution methods of that "education," has not been developed as part of the Company's proposed Application, and the relationship between a customer's completion of the "education," and the receipt of the subsidy has not been established.[7] Staff understands from the technical conferences that this education component will constitute the bulk of the $1.7 million "Customer Education and Program Administration" budget, apparently more than doubling the requested $1.09 million budget for the combined Residential programs.

In the workpapers accompanying its July 16, 2021, *Notice of Filing Supplemental Information Relating to* Electrification *Transportation Portfolio Application*, Evergy provided EPRI loadshapes for "managed" and presumably "unmanaged" home charging ("Base"). Evergy applied these loadshapes to a daily consumption of 6.52 kWh for its view of unmanaged Level 1 home charging. Evergy reduced the kWh consumption by 10%, to 5.86 kWh, for its view of "managed" Level 2 charging, to account for its estimate of the improved efficiency of Level 2 devices over a Level 1 plug. Evergy fit this load requirement to the EPRI "managed" loadshape. To account for the lack of management of EV charging load in Evergy's proposed filing, Staff applied the 5.86 kWh for Level 2 charging to begin in the maximum hour of load provided in the EPRI Base Scenario, provided in the graph below as "Projected Weekday A." Notably, Evergy projected kWh daily consumption for home charging can be delivered in less than 1 hour by a Level 2 charger, which Evergy defines as capable of charging at a rate of 3.8 – 19.2 kW. However, Staff has relied on the cap of 6.6 or so kW that Evergy has reflected in its modeling but not in its tariff.[8] Staff also examined the charging that would occur for a charger set to 3.3 kW, provided as "Projected Weekday B." Finally, Staff slid the "Projected Weekday B" charging to 8 PM,

[7] See Appendix A, "Education Slides from MPSC Conference 3."
[8] The capacity requirements of charging in excess of 6.6 kW on both local distribution infrastructure and SPP capacity costs are prohibitive.

consistent with Evergy's "Wait 'til 8" time of use program and popular slogan, represented as "Projected Weekday C." Below are the results of Staff's calculation.

Figure 1:



As can be shown from the chart, if EV charging load is not managed it will likely occur during expensive peak hours.

From these basic load shapes,[9]

(1) assuming that recipients of the 240V subsidy DO INSTALL AND USE a Level 2 Charging Device,

and

(2) assuming that existing charging usage is approximately 6.52 kWh per day,

assuming in the case of the developer subsidy proposal, that purchasers of homes do own EVs and also fall under assumptions 1 & 2;

[9] "Load shape" refers to the pattern of electric consumption over a period of time. Here, the shape provides consumption by hour, for a 24-hour day.

one can analyze the potential impact of Evergy's proposal

(3) under a scenario of required participation in a program to manage charging, and

(4) under the requested program design contained in Evergy's proposed tariffs;

on:

a. Net revenues from kWh sales to EV home charging customers,

b. Costs to obtain energy through the SPP to be passed on through the FAC,

c. Capacity costs through the SPP.

As an initial matter, the assumptions relied-upon by Evergy are not reasonable. There are no realistic controls for free ridership, rendering the first and third assumptions above unreasonable. Staff does not have a better kWh level to suggest for use, so it will proceed with its analysis using the 6.52 kWh per day value relied on by Evergy, but it notes that a range of use levels is likely. To simplify its rebuttal of Evergy's modeling, Staff will use the 6.52 kWh per day value, ignore free ridership, and look only at the weekday charging profiles as representing 5/7ths of the charging.[10] To determine whether non-participating ratepayers will be harmed by Evergy's request to give $500 ratepayer provided dollars to select customers (and $250 to select developers) Staff performed an analysis to estimate the impacts to non-participants of Evergy's proposal.

a. Net revenues from kWh sales to EV home charging customers

First, novel to electric vehicle cases, Evergy's theory of the Residential Rebate subsidy is that customers will consume less energy if given monetary incentives towards the installation of an outlet compatible with an EV charger. Level 2 chargers do not lose as much energy to heat and sound during the charging process as a Level 1 plug, and Evergy asserts that charging via Level 2 consumes 10% less energy overall. Using existing Evergy Metro rates, the existing Evergy Metro

[10] Evergy's existing ToU rates exclude certain rate elements from weekends and holidays.

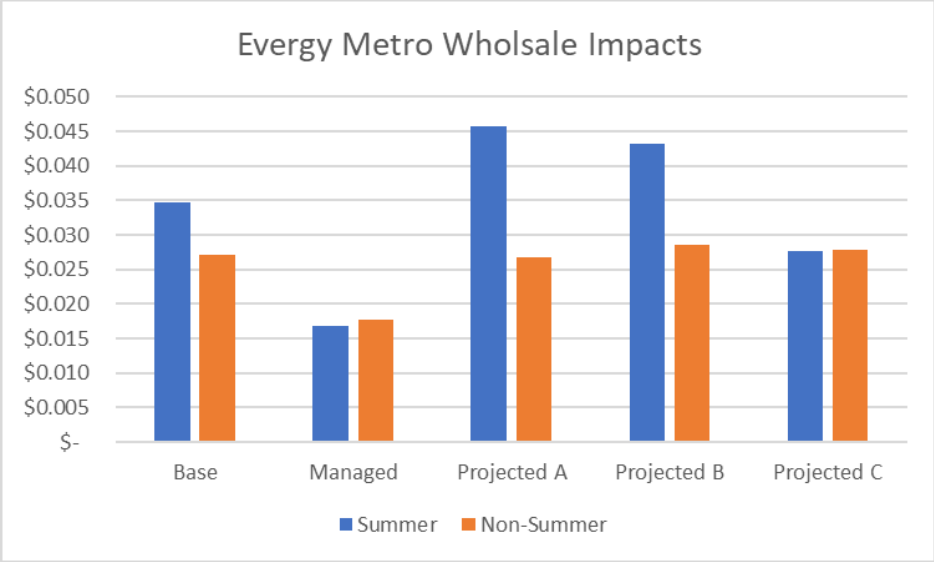
FAC Base Factor, and the energy-saving assumptions relied upon by Evergy, retail revenues from the customers eligible for this rebate will be reduced by $17.10 - $26.25 per year, net of the FAC Base factor.[11]

b. Costs to obtain energy through the SPP to be passed on through the FAC

Using the average weekday costs of energy in the SPP day ahead market for Evergy Metro, Staff has calculated the wholesale energy costs associated with providing the energy to decrease by approximately $22.87 per year for the "Managed" charging scenario relative to the Base scenario, inclusive of the 10% reduction in total consumption. However, for Projected Weekday Scenarios A & B, respectively, the move from Level 1 to Level 2 charging resulted in a net increase in wholesale energy costs of approximately $0.25 - $0.61 per year – inclusive of the 10% reduction in total consumption. In other words, if customers have the ability to charge at a higher level of demand, and continue to charge at the times they have found most convenient those customers will cause more wholesale energy costs, while consuming less energy (and paying a lower retail bill.). However, Projected Weekday Scenario C – based on the assumptions that customers would modify their charging behavior consistent with the design of the existing Evergy ToU rate schedule - resulted in wholesale energy cost savings of $7.74, inclusive of the 10% reduction in consumption. In summary, these results indicated that unless customers are dissuaded from continuing to begin charging their vehicles in the early evening or at other times of relatively high demand, the energy costs borne by all customers can be expected to increase, even when less energy is consumed. The results on a per-kWh basis are provided in the graph below:

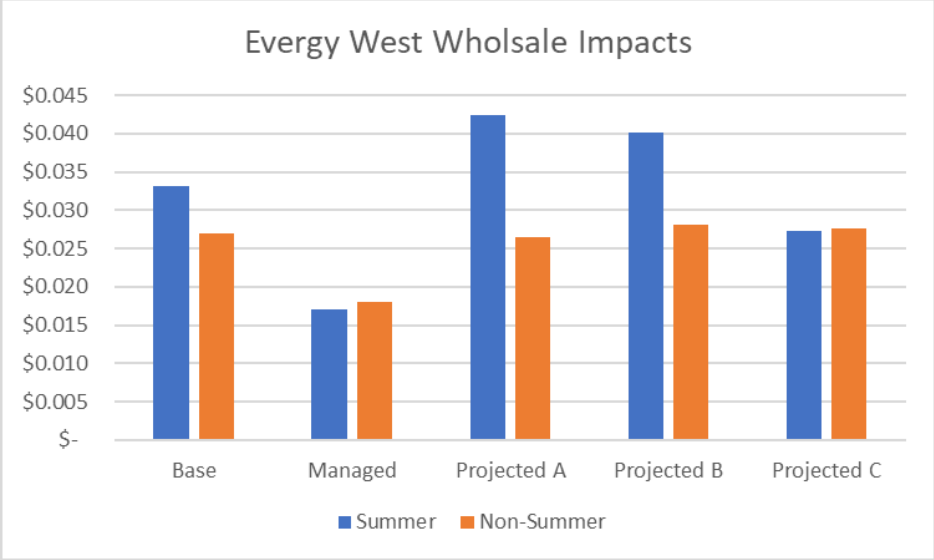
Figure 2:

[11] In its filing, Evergy failed to consider Time of Use rates as an option.



Similar results are produced by a review of the wholesale energy costs and retail rates associated with Evergy West. The results on a per-kWh basis were provided in the graph below:

Figure 3:



For Evergy West, the range of anticipated retail revenue losses, net of FAC base is $12.17 - $19.99. In summary, before even looking at potential capacity cost increases, and free-ridership impacts, Evergy is requesting to give certain customers $500, with the possibility of reducing revenue by around $20 a year, and in a best-case scenario, reducing the wholesale energy costs passed through the FAC by around $20, to maybe breakeven, but without any requirement that the customer takes

action to result in that wholesale cost decrease or that the customer absorbs the cost of that wholesale cost increase.

Staff Expert/Witness: Sarah L.K. Lange

c. **Capacity costs through the SPP[12]**

Evergy provided the cost of additional generation capacity utilized by Ambika Coletti (ICF) in the cost benefit analysis for the evaluation of EV adoption. According to the workpaper provided in support of Evergy's Report, ** [redacted] ** Incremental costs of capacity may not be equivalent to avoided capacity costs attributable to demand-side management programs (DSM). Each MW reduced by DSM implementation does not necessarily result in realized cost avoidance,[13] but substantial increases in load are much more likely to cause additional costs attributable to the incremental load in the form of a capacity need. ** [redacted]

[12] Note, under Evergy's analysis, the Residential programs are assumed to cause reductions in required SPP capacity, however this is not a reasonable assumption, as discussed above. It is reasonable to assume that both the residential and commercial programs would cause additional required SPP capacity, to the extent that either program does cause additional EV charging, or accelerates the level of demand associated with existing charging, absent significant program design modifications.

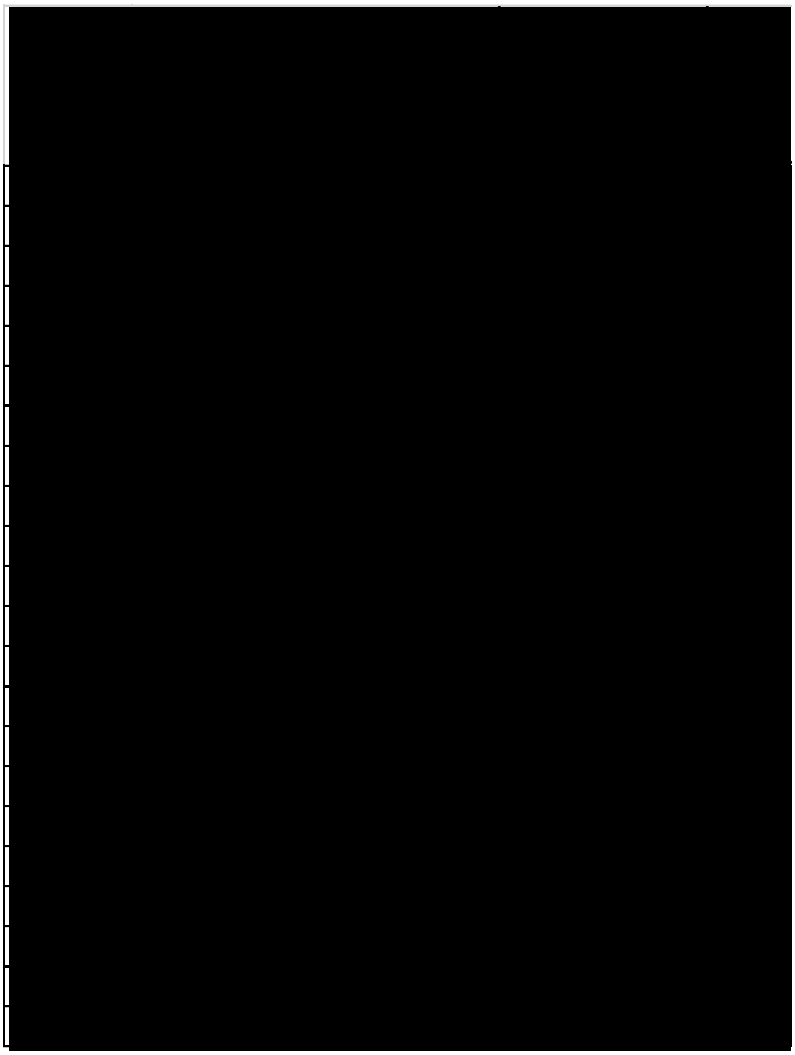
[13] Cost avoidance from DSM implementation is dependent on peak impacts, implementation timing, measure lives, and supply-side resource management among other factors.

[redacted] ** Furthermore, the impact of incremental costs of capacity on the estimated cost of additional EV charging is heavily influenced by the assumed load shape of the EV charging. The workpaper provided in support of Evergy's application utilizes hardcoded load shape assumptions, which were provided to ICF by Evergy.

The table below shows the cost of additional generation capacity provided by Evergy to ICF for the cost benefit analysis in this case,[14,15] Evergy's proposed avoided capacity costs in the initial MEEIA Cycle 3 application,[16] and the avoided capacity costs provided by Evergy to ICF for the Evergy 2019 DSM Potential Study Final report.[17]

[14] Updated testimony report and appendices were filed on May 7, 2021.
[15] It is unclear why Evergy began to adjust the costs for inflation beginning in 2028.
[16] Filed in November of 2018.
[17] Evergy filed the most recent triennial compliance filing on April 30, 2021 and the appended Demand Side Management Potential Study was dated October 2020.

*[redacted][18]



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The table above clearly demonstrates the vast differences between Evergy's approach to valuation of incremental costs of capacity to serve additional load attributable to its proposed electrification programs and demand reductions from demand-side resources. In this case, had Evergy assumed a higher cost of capacity in the cost benefit analysis conducted by ICF, the projected program benefits would be reduced. In other words, Evergy is overstating the benefits of its electrification programs. As shown in the table above, the capacity costs assumed in this case are lower than what

[18] The potential study for Case No. EO-2021-0035 did not include avoided capacity cost estimates for 2021 or 2022.

the Company proposed in its recent potential study *and* MEEIA 3 filing *and* triennial compliance filing despite the fact that incremental capacity costs from increased load from EV charging are more likely than actual cost avoidance from MEEIA cycle 3 implementation.

Evergy's selective valuation of incremental and avoided capacity costs depending on the desired outcome within a relatively short time period highlights the importance of accurate estimations of potential benefits and costs when developing cost benefit analyses of a given program. Changes or differences in incremental costs of capacity and the assumed load shape of EV charging can have a substantial effect on the projected cost effectiveness. The validity of a prospective cost benefit analysis is dependent on the accuracy, reliability, and support of the underlying assumptions that drive the output of a given estimation.

Staff Expert/Witness: J Luebbert

d. **Recommendation**

Staff cannot recommend approval of this program as a reasonable use of ratepayer funds. It has no protections against free ridership, and no requirement for participation in managed charging. Customers who receive the subsidy may or may not install a Level 2 Charger. Customers who install a Level 2 Charger may choose one capable of delivery of energy far in excess of the 6.6 kW cap assumed in Evergy's modeling. Customers may cause wholesale energy cost increases, and may cause capacity costs increases. Evergy has not provided any evidence of what education or marketing will cause customers to participate in "Managed" charging, nor have they shown how the $500 subsidy is necessary to deliver that education or marketing to customers who may participate in "Managed" charging. Evergy assumes participating customers will decrease their contributions to retail revenue.

The developer subsidy portion of the program is of even greater concern. Not only is it more attenuated to believe that a customer will voluntarily stumble into a "managed" charging pattern without requirement, it is not reasonable to assume the plug will ever be used for charging at all. Not only is there is no apparent way for Evergy's intended eventual "education" component to reach the future homeowners – who may or may not own an EV and who may or may not pursue installation of a Level 2 charger of any particular demand capability - there is no apparent way for the future homeowners nor Evergy to even know the plug was installed as a result of the subsidy.

Staff/Expert Witness: Sarah L.K. Lange

Commercial Rebate Programs[19]

Evergy's Commercial Rebate Programs proceed under a different theory than its Residential Proposal. Evergy's position is that the chargers subsidized under these programs will cause new load, and that the growth of load will exceed the value of the capacity and energy costs it causes.

However, in its analysis of the costs caused by the new load, Evergy failed to acknowledge and include in budget amounts the distribution facilities that will be required to support service to the enabled chargers. Evergy's facilities extension tariff provisions do require that customers requiring new or upgraded facilities pay for the portion of the cost of those facilities that exceeds what the customer's expected revenue will support, but Evergy's sizing of the proposed subsidies under the Commercial Rebate Programs ALSO relies on the assumption that the same revenue

[19] **Commercial EV Charger Rebate, Original Sheet 160.5:** "The Program provides a rebate to existing or potential commercial customers that commit to installing, owning, and operating qualifying EVSE at highway corridor, public, workplace, fleet, or multifamily sites. Both new construction projects and retrofit projects are eligible to apply…Qualified L2 EVSE are eligible for a flat rebate of $2,500 per port. Qualified DCFC EVSE are eligible for a rebate of $20,000 per unit."

stream will exceed the cost of the subsidy. Evergy's proposed tariffs define Level 2 Charging and DCFC Charging as follows:

> LEVEL 2 (L2) – A level of electric vehicle charging that supplies charging power (3.8-19.2 kW) at 208 or 240 V alternating current (AC) through a SAE Standard J1772 connector. L2 charging is commonly accomplished with a permanently mounted EVSE, though some manufacturer-provided cord-sets are 240V compatible.
>
> DIRECT CURRENT FAST CHARGING (DCFC) – A level of electric vehicle charging that supplies power (50-350 kW) at DC voltage (0-500 or 1,000 V) through CCS Combo and/or CHAdeMO connectors. DCFC is commonly provided by an EVSE with three phase 480 V (AC) input.

However, Evergy does not model Level 2 charging in excess of 6.6 kW and could not provide details concerning the kW assumptions for DCFC charging at technical conferences, including whether or not assumed demands reflected single DCFC chargers or paired chargers. The distribution facilities to accommodate 350 kW run in the tens of thousands to hundreds of thousands of dollars. These costs are not included in Evergy's stated budget or considered in its economic analysis.

The budgets proposed by Evergy Missouri West and Evergy Missouri East in this proceeding are not reasonable in size, and additional work is needed to refine the parameters of each program that may be authorized to – among other things – reduce free ridership, avoid load building, and optimize customer behaviors to avoid the need for additional distribution, transmission, or generation capacity or assets. A factor to consider in reviewing the budget proposed by Evergy versus those in place at Ameren Missouri and under consideration for Liberty is the existing saturation of the Evergy Clean Charge Network chargers within the service territory. As a point of reference, Evergy West and Evergy Metro combined have less than half the number of non-

residential customers as compared to Ameren Missouri; however, Evergy is requesting approximately $4 million more than Ameren Missouri's approved budget for Commercial EV charging rebates.

Evergy did address some clarifications sought by participants in the July 16, 2021 "Supplemental Appendix I" redlined tariff sheets. However, the program as proposed relies on unreasonable assumptions of the rate revenue to be provided by participating customers. For example, Evergy does not adjust its wholesale electric costs projections to the EPRI loadshapes it relies upon as the basis for its proposed Residential programs, and Evergy ignores the revenue impact of customers participating in ToU rates to achieve bill savings over the life of the program. Evergy assumes no additional transmission or distribution capacity costs will be incurred in conjunction with the programs. Evergy requests for itself unfettered discretion in budgeting among sub-programs, and does not include provisions countering against duplication of charger availability in areas already (or proposed to be) served by the Clean Charge Network.

Evergy's cost/benefit model is based on more-certain upfront costs being off-set by more-speculative eventual assumed benefits. Further, it fails to make any effort to account for rate case timing in assumptions regarding accrual of benefits from additional revenues. The Highly Confidential graph below illustrates these estimates for Evergy Metro over time, accounting for rate case timing. A rough analysis of the information provided by Evergy but reflecting reasonable assumptions concerning rate case timing indicates that the program would first be not detrimental to non-participating Evergy Metro ratepayers around the year 2030. This analysis relies on Evergy's assumed costs and benefits, and does not reflect PISA treatment, the impact of additional revenue requirement associated with distribution infrastructure not quantified by Evergy, or the immediate pass-through of certain costs to customers from Evergy Metro's FAC.

** **Figure 4:**

**

Lastly, Evergy proposed to include highway corridor charging under the Commercial Rebate program and in the expansion of the CCN. However, the Company's proposed tariffs do not differentiate the applicability of the programs for highway corridor installations nor do the tariffs coordinate installation under the programs to ensure the stations do not overlap or contribute to saturation.

Staff Expert/Witness: Sarah L.K. Lange

Clean Charge Network

The Clean Charge Network (CCN) tariffs that were approved in Evergy West's and Evergy Metro's last rate cases, ER-2018-0146 and ER-2018-0145, capped the number of stations served on the CCN tariff (Schedule CCN) to 250 stations for Evergy West and 400 stations for

Evergy Metro. Schedule CCN offers two options for billing; either the host customer pays the kWh energy charge plus applicable taxes and fees, or the EV charging station user pays the kWh energy plus applicable taxes and fees. The current energy charge is $0.2000 for Level 2 charging and $0.2500 for Level 3 charging.[20] In this case, Evergy seeks to increase the caps to expand the CCN in Missouri. Evergy further requests that the Commission find that its CCN expansion plans announced in this filing are prudent from a decisional perspective.[21]

As discussed in more detail below, Staff recommends the Commission revise the current cap only for Evergy Missouri Metro to 450 stations to support the KC Streetlight Corridor Pilot. As part of its review, Staff reviewed the current level of transactions and charging behavior on Evergy's current EV chargers under Scheduled CCN. Below are tables comparing the level of annual revenues received from Schedule CCN to the annual revenue requirement included in Evergy's last rate cases.[22]

Table 3:

Evergy Missouri West Clean Charge Network						
Year	Rate Revenue From CCN Tariff	kWh Usage	Plant Investment ER-2018-0146	AnnualO&M ER-2018-0146	Annual Cost of Service ER-2018-0146	Annual Cost of Service Shortfall
2016	$ 11,952	56,188	$ 5,400,000	$518,000	$765,000	$ (753,048)
2017	$ 35,284	165,875		$518,000	$765,000	$ (729,716)
2018	$ 36,109	171,521		$518,000	$765,000	$ (728,891)
2019	$ 39,412	188,508		$518,000	$765,000	$ (725,588)
2020	$ 30,829	147,877		$518,000	$765,000	$ (734,171)
2021	$ 9,564	46,152		$518,000	$765,000	$ (755,436)

[20] The energy charge is inclusive of all energy rate adjustment mechanisms, such as the: (1) Demand-Side Investment Mechanism Rider (DSIM); (2) Renewable Energy Standard Rate Adjustment Mechanism Rider (RESRAM); and (3) Fuel Adjustment Clause (FAC).
[21] Page 32 of Evergy's Report.
[22] Data for 2021 is not a full year.

Table 4:

Evergy Missouri Metro Clean Charge Network						
Year	Rate Revenue From CCN Tariff	kWh Usage	Plant Investment ER-2018-0145	AnnualO&M ER-2018-0145	Annual Cost of Service ER-2018-0145	Annual Cost of Service Shortfall
2016	$ 167,404	34,992	$8,700,000	$ 1,200,000	$ 1,500,000	$ (1,332,596)
2017	$ 488,245	100,742		$ 1,200,000	$ 1,500,000	$ (1,011,755)
2018	$ 446,241	91,122		$ 1,200,000	$ 1,500,000	$ (1,053,759)
2019	$ 580,167	117,481		$ 1,200,000	$ 1,500,000	$ (919,833)
2020	$ 379,063	76,653		$ 1,200,000	$ 1,500,000	$ (1,120,937)
2021	$ 99,040	20,067		$ 1,200,000	$ 1,500,000	$ (1,400,960)

As can be shown from the tables, over the existing 6 year program life, the EV chargers currently served under Schedule CCN are not generating revenues that are sufficient to cover the revenue requirement caused by Schedule CCN's infrastructure and related costs .[23] However, some stations are more utilized than others. For example, some stations will have hundreds of transactions in a year whereas other stations may have less than 5 charging transactions over an entire year. Staff is concerned that without tariff provisions limiting the installation of a new EV charger within close proximity to Evergy's current EV chargers, the utilization of existing stations may simply be diluted, with the same amount of charging revenue being derived from a greater level of investment causing additional revenue requirement.

Further based on charging sessions, it does appear that the majority of charging takes place during the afternoon and evening for both Evergy West and Evergy Metro, exacerbating the concerns with wholesale energy costs and capacity costs, described above.

[23] Staff used the cost of service filed in Staff's true-up direct CCOS workpapers in Evergy Metro's and Evergy West's last rate case.

Figure 5:

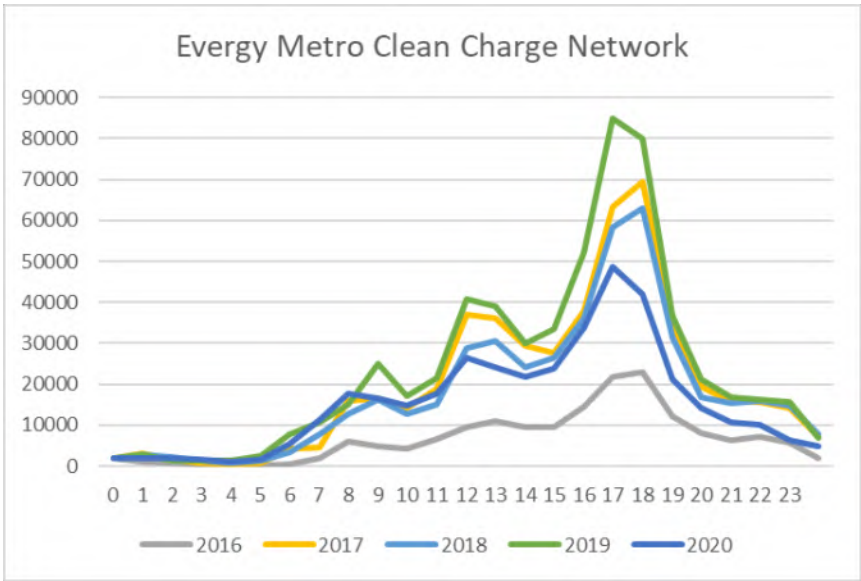
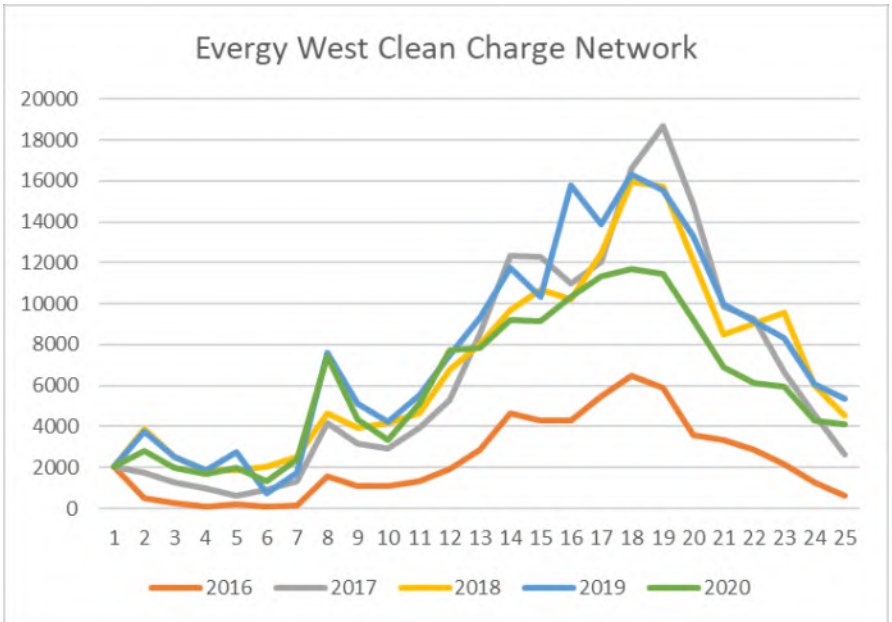


Figure 6:



Staff Expert/Witness: Robin Kliethermes

CCN Expansion

Summary

Evergy is requesting an expansion of its Clean Charge Network, at a combined cost of $2.8 million. The Company proposes the additional 150 stations under a highway corridor, Kansas City streetlight, and transportation network support programs. However, Evergy has not provided sufficient evidence to justify this expansion. Many programs were presented with a general concept, but no concrete program structure or station locations. The evidence from currently installed stations also does not justify an expansion, as the revenues from the existing stations do not cover the cost of service for the Clean Charge Network. As explained in more detail in the following discussion, based on Staff's review, Staff recommends the Commission allow an increase in the Evergy Missouri Metro cap in the amount of 50 additional stations, to support the Kansas City streetlight corridor pilot. Staff recommends that the Commission reject the rest of the proposed expansion, as well as Evergy's inappropriate request for a finding of decisional prudence.

Overview of Clean Charge Network Expansion

Evergy is requesting an expansion of its Clean Charge Network by 150 total stations, half of which Evergy has itself not identified a need for.[24]

Table 5:

Jurisdiction	Current Cap	Identified Need	Requested Revised Cap	Spending Plan
MO Metro	400	450	500	$1.2 M
MO West	250	275	300	$1.6 M
Total	**650**	**725**	**800**	**$2.8 M**

Evergy Missouri Metro's request is to expand its network from 400 stations to 500 stations through two specific programs; the Streetlight partnership (50 stations) and Rideshare program (4 stations). Evergy Missouri Metro has itself not identified a need for the remaining 46 stations but represents

[24] Table 7, Page 34 of Updated Report.

that it intends to place them in areas not supported by third party providers – but no such requirement is included in the requested authority.

Evergy Missouri West's request is to expand its network from 250 stations to 300 stations, focusing on highway corridors. At this time, Evergy Missouri West claims to have identified a need for 8 sites (24 stations). Each site would include one Level 2 charger and two Direct Current Fast Chargers (DCFC). Evergy Missouri West has not identified a need for the remaining 26 stations but represents that intends to place them in areas not supported by third parties – but no such requirement is included in the requested authority.

Evergy provided the following table[25] during the technical conferences, which provides additional detail regarding the requested expansion. Although Evergy's filing indicates it plans to spend $2.8 million on the Clean Charge Network expansion, this budget only covers 78 of the requested 150 stations.

Table 6:

Program/Jurisdiction	Sites	Budget	Identified Need - Stations	Unidentified Need - Future Use Cases	Notes
Highway Corridor/MO West	8	$1.6M	24		Initial Highway Corridor installs to include L2 x 1 and DCFC x 2; does not consider future growth needs at the site
Streetlight/MO Metro	50	$0.8M	50		50 maximum of L2 chargers
TNC_Rideshare/MO Metro	4	$0.4M	4		DCFC
Unidentified Need - Other Use Cases/MO West				26	Highway Corridor site growth; underserved areas not supported by 3rd parties
Unidentified Need - Other Use Cases/MO Metro				46	Underserved areas not supported by 3rd parties

[25] Technical Conference presentations #2, #3 and #4. See Attachment 1.

Staff estimates the remaining 72 stations (i.e. stations without a need identified) may cost an additional $2.2 million to $4.9 million over Evergy's planned spending level. The large range in this estimate is because Evergy has not identified the number of sites and what combination of charging infrastructure will be installed.

Decisional Prudence Determination

In this case, Evergy requested the Commission find the decision to expand its Clean Charge Network prudent. The Commission may make a determination of the prudence of a decision when determining whether to grant a Certificate of Convenience and Necessity under 20 CSR 4240-20.040(1)(C). Electric Vehicle charging infrastructure can be considered an asset depending on whether it is located outside the electric utility's service territory. Evergy has only a general location of ** [redacted] ** potential sites[26] identified along highway corridors; depending on final site location ** [redacted] ** of these may be in competition with municipal utilities and may or may not be inside the service territory of an Evergy affiliate.[27] The 50 possible site locations[28] for the streetlight program appear to be within Evergy Missouri Metro's service territory. Evergy in this case has not applied nor included the applicable filing requirements for a Certificate of Convenience and Necessity. The filing requirements for construction of an asset include components vital to determining whether a decision to construct an asset is prudent and ensures that the applying utility has put sufficient progress toward its plan. The applicant is required to provide facts showing that granting the application is necessary or convenient for the public service. The Commission routinely considers the Tartan criteria (whether the project is needed, economically feasible, financially feasible, and not detrimental to the public interest) when

[26] Attachment 2, "CCN Highway Corridor Sites (Proposed)".

[27] ** [redacted] **

[28] Site visit - Google My Maps.

evaluating whether a project is necessary or convenient. The filing requirements further include items such as a description of the site, identification of affected utilities, a description of the plans and specifications, estimated cost of the project, estimated construction timeline, operation and maintenance plans, and an overview of the utility's plan for competitive bidding.

Evergy Missouri Metro – KC Streetlight Corridor Pilot

Evergy has partnered with the Metropolitan Energy Center and the City of Kansas City, Missouri to collaborate on a pilot streetlight charging installations, partially funded through a grant awarded by the US Department of Energy (DOE). The pilot program is intended to inform whether streetlight charging is viable at scale and provide best practices for other cities in terms of permitting, ownership structure, and enforcement.[29] Evergy's role in the pilot is to fund the make-ready infrastructure while the grant provides funding for the charging equipment. Evergy estimates the capital costs to be $0.8 million. However, Evergy has not presented an estimate of the ongoing operation and maintenance of the charging equipment nor its own learning objectives for the pilot program.

Significant progress has been made by Metropolitan Energy Center and its partners in selecting sites for the pilot. Initial site screening was completed with market demand modeling, analysis of demographics, and City approval resulting in approximately 80 potential sites. Further site evaluation includes consideration of other factors such as proximity to Evergy's system, electrical capacity, cost estimates, and construction challenges.

Staff does not oppose increasing the cap for Evergy Missouri Metro to include the 50 stations contemplated by the Streetlight Corridor pilot program. The pilot program goals are well defined by Evergy's partners, Evergy's contribution is limited to make-ready infrastructure, and market

[29] Attachment 3, Metropolitan Energy Center presentation, slide 2.

demand modeling was used to inform initial site screening. However, Staff recommends that the Commission order Evergy to develop its own pilot metrics and learning objectives and file a report to the Commission after 3 years.

Evergy Missouri Metro – Rideshare and Transportation Network Companies

Evergy Missouri Metro proposes to include 4 DCFC stations ($0.4 million) in its Clean Charge Network to support rideshare and Transportation Network Companies (TNC). Evergy argues that the inclusion of 4 DCFC for use by these types of services aligns with its equity commitment in that rideshare and TNC services provide mobility solutions to individuals with barriers to car ownership and mobility barriers. At this time, Evergy has not identified locations for rideshare chargers[30] or partnership opportunities[31]. Additionally, Evergy has not presented even a general framework for how such a partnership would be structured. Staff appreciates Evergy's consideration of equity in developing its proposed Transportation Electrification Portfolio. However, at this time Evergy's request to increase the cap to support this program is premature.

Evergy Missouri West – Highway Corridor

In addition to supporting highway corridor infrastructure through its proposed rebate offerings, Evergy is requesting to increase its cap on charging infrastructure to include 8 site locations along highway corridors ($1.6 million). Evergy asserts the "expansion will allow Evergy to better meet an interim market need in the absence of adequate charging services from third-party EVSPs that may seek more profitable locations."

[30] Page 35 "Evergy will work with stakeholders and communities to identify strategic locations that enable the use of EVs for ridesharing and promote further adoption of EVs among TNC drivers."
[31] Technical Conference 4 slide deck, page 7 "Evergy expects pilot/partnership opportunities to emerge during the next five years".

Evergy identified ** [redacted] ** possible highway corridor site locations for expansion of the Clean Charge Network, however, depending on final site location ** [redacted] ** of the identified locations may be in areas served by municipal utilities. To the extent finalized highway corridor stations are located outside of its service territories, Evergy is required to file an application for a Certificate of Convenience and Necessity.

Evergy has described a general framework for identifying the highway location sites, focusing on secondary and tertiary highways that Evergy anticipates third parties will not be interested in installing. Additionally, Evergy intends to pre-approve locations for the Commercial highway corridor applications so that there would not be overlap with the Clean Charge Network highway corridor stations.[32]

Since the filing of this case, the Bipartisan Infrastructure Deal was announced, which includes $7.5 billion to build out a national network of EV chargers. Specifically, the funding is intended for deployment of EV chargers along highway corridors, with a focus on rural, disadvantaged, and hard-to-reach communities; similar to Evergy's goals for its highway corridor stations. Because funds may be available to Evergy under the Bipartisan Infrastructure Deal or available for third-party providers to target these less profitable areas, Staff recommends the Commission deny Evergy's expansion application at this time and encourage Evergy to apply when funding is available.

As discussed by Staff Witness Robin Kliethermes above, the EV chargers currently served under Schedule CCN are not being utilized to the point the charger can cover Schedule CCNs cost of service.

[32] Evergy Response Log, Item C1. ** [redacted] **

Evergy Missouri Metro and Missouri West – Unidentified Need

Staff estimates the 72 stations (which Evergy has not identified a need for) may cost an additional $2.2 million to $4.9 million over Evergy's planned spending level. The large range in this estimate is because the number of sites and combination of charging infrastructure has not been identified. Although actual infrastructure costs can vary significantly based on the site location and installation, maximizing the number of stations per site generally drives cost efficiencies and Level 2 stations are less expensive to install than DCFC stations. The following table presents possible scenarios based on the number of unidentified need stations Evergy is requesting (46 for EMM and 26 for EMW). The estimated cost per site values are based on Evergy work papers and technical conference presentations. In instances where these sources conflict Staff chose the higher estimate for the purpose of providing a conservative estimate for the Commission to consider.[33]

Table 7:

Missouri Metro - Unidentified Need

Type	Assumed number of sites	Stations	Per Site Estimate	Total
L2 - 3 Stations	15	45	$62,868	$943,020
DCFC - 1 station, infra for 2	1	1	$88,082	$88,082
EMM Example 1		**46**		**$1,031,102**
L2 - 3 Stations	10	30	$62,868	$628,680
DCFC - 2 station	8	16	$134,082	$1,072,656
EMM Example 2		**46**		**$1,701,336**
L2 - 1 station	46	46	$45,908	$2,111,768
DCFC	0	0	n/a	$0
EMM Example 3		**46**		**$2,111,768**
L2 - 1 station	0	0	n/a	0
DCFC - 2 station	23	46	$134,082	$3,083,886

[33] Evergy's estimate for line extension cost ranges from $0- $60,000+ per site, with an average of approximately $23,000. Table 6, assumes the average line extension per site of approximately $23,000.

EMM Example 4		**46**		**$3,083,886**

Missouri West - Unidentified Need

Type	Assumed number of sites	Stations	Per Site Estimate	Total
Highway Corridor (1 L2, 2 DCFC)	4	12	$206,875	$827,500
L2 - 3 Stations	4	12	$62,868	$251,472
DCFC - 2 station	1	2	$134,082	$134,082
EMW Example 1		**26**		**$1,213,054**
Highway Corridor (1 L2, 2 DCFC)	0	0	$206,875	$0
L2 - 3 Stations	0	0	$62,868	$0
DCFC - 2 station	13	26	$134,082	$1,743,066
EMW Example 2		**26**		**$1,743,066**
Highway Corridor (1 L2, 2 DCFC)	8	24	$206,875	$1,655,000
L2 - 3 Stations	0	0	$62,868	$0
DCFC - 2 station	1	2	$134,082	$134,082
EMW Example 3		**26**		**$1,789,082**

Conclusion

Evergy is planning to spend $2.8 million to expand its Clean Charge Network along highway corridors, streetlights in the City of Kansas City, and to support transportation network companies. In this case, Evergy requested the Commission find the decision to expand its Clean Charge Network prudent. Pre-approval of decisional prudence is inconsistent with tariff applications. The Commission may make a determination of the prudence of a decision when determining whether to grant a Certificate of Convenience and Necessity, which Evergy has not applied for nor included the applicable filing requirements. As Evergy indicated the expansion of the Clean Charge Network would be within its service territories, which would not necessitate a Certificate of Convenience and Necessity as Staff does not consider the expansion an asset as defined in 20 CSR 4240-20.045. **

[redacted]

[redacted] **[34]

Setting aside that Evergy's request for decisional prudence is inappropriate, Evergy has not provided sufficient evidence in this case to support the full Clean Charge Network expansion and related requested programs. As previously discussed by Staff Witness Robin Kliethermes above, the revenues from the existing Clean Charge Network stations are not fully covering its revenue requirement. Further, Evergy's spending plan of $2.8 million does not cover the cost of the number of stations Evergy is requesting. Evergy's plans to expand the Clean Charge network along highway corridors and to support transportation network companies is premature. For the highway corridor project, Evergy has presented only a general framework of where the highway corridor stations would be sited. For the transportation network chargers, Evergy intends to develop partnerships which they expect to emerge over the next five years but has not presented even a conceptual overview of how those partnerships would be structured.

Staff recommends the Commission revise the current cap for Evergy Missouri Metro to 450 stations to support the KC Streetlight Corridor Pilot. The estimated budget for this pilot program is $0.8 million. The pilot program goals are well defined, Evergy's contribution is limited to make-ready infrastructure, and market demand modeling was used to inform initial site screening.

Staff Expert/Witness: Claire M. Eubanks, P.E.

Accounting

In its application, Evergy requests the Commission to authorize it to use a deferral accounting mechanism to track pilot program costs (incentive rebates and other program costs such as

[34] Attachment 2, "CCN Highway Corridor Sites (Proposed)".

customer education and program administration) to a regulatory asset for recovery of prudently incurred costs for inclusion in future rate cases through expense amortization over a period of 5 years. Staff is recommending rejection of the Application, thus a deferral mechanism is not needed. If the Commission approves the Application, Staff is not opposed to the creation of a deferral mechanism for the costs. However, determination of the amortization period for the deferred costs should be determined in a future rate case, not in this proceeding.

Staff Expert/Witness: Kim Bolin

Variances

"Evergy requests a variance of subsections 4 CSR 240-14.020(1)(B), (1)(D), and (1)(E) only as those subsections are applied to the pilot programs as described in any approved compliance tariffs resulting from this case."

Regarding the requested variance, Staff agrees that to the extent the Commission may authorize a utility to take actions that are inconsistent with governing rules, that the Commission must, with good cause, include any applicable variances in its order or prior to its order authorizing such actions. However, in that Staff recommends rejection of the underlying requests, it is not appropriate to grant variances as requested. To the extent the Commission does authorize any aspect of Evergy's request, Staff recommends that the grant of variance be only as broad as is necessary, and be of limited duration.

Staff Expert/Witness: Sarah Lange

Appendix 1 - Staff Credentials

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of Evergy Metro, Inc. d/b/a Evergy Missouri Metro and Evergy Missouri West, Inc. d/b/a Evergy Missouri West for Approval of a Transportation Electrification Portfolio	)))))	**Case No. ET-2021-0151**

AFFIDAVIT OF KIMBERLY K. BOLIN

State of Missouri)
) ss.
County of Cole)

COMES NOW Kimberly K. Bolin and on her oath declares that she is of sound mind and lawful age; that she contributed to the Staff Rebuttal Report; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

Kimberly K. Bolin

Kimberly K. Bolin

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 13th day of August, 2021.

Dianna L. Vaught

NOTARY PUBLIC

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2023
Commission Number: 15207377

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of Evergy Metro, Inc. d/b/a Evergy Missouri Metro and Evergy Missouri West, Inc. d/b/a Evergy Missouri West for Approval of a Transportation Electrification Portfolio	)))))	**Case No. ET-2021-0151**

AFFIDAVIT OF CLAIRE M. EUBANKS PE

State of Missouri)
) ss.
County of Cole)

COMES NOW Claire M. Eubanks and on her oath declares that she is of sound mind and lawful age; that she contributed to the Staff Rebuttal Report; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

Claire M Eubanks
Claire M. Eubanks

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 16th day of August, 2021.

Dianna L. Vaught
NOTARY PUBLIC

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2023
Commission Number: 15207377

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of Evergy Metro, Inc. d/b/a Evergy Missouri Metro and Evergy Missouri West, Inc. d/b/a Evergy Missouri West for Approval of a Transportation Electrification Portfolio	)))))	**Case No. ET-2021-0151**

AFFIDAVIT OF ROBIN KLIETHERMES

State of Missouri)
) ss.
County of Cole)

COMES NOW Robin Kliethermes and on her oath declares that she is of sound mind and lawful age; that she contributed to the Staff Rebuttal Report; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

Robin Kliethermes

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 16th day of August, 2021.

Dianna L. Vaught
NOTARY PUBLIC

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
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BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of Evergy Metro, Inc. d/b/a Evergy Missouri Metro and Evergy Missouri West, Inc. d/b/a Evergy Missouri West for Approval of a Transportation Electrification Portfolio	)))))	**Case No. ET-2021-0151**

AFFIDAVIT OF SARAH L. K. LANGE

State of Missouri)
) ss.
County of Cole)

COMES NOW Sarah L. K. Lange and on her oath declares that she is of sound mind and lawful age; that she contributed to the Staff Rebuttal Report; and that the same is true and correct according to her best knowledge and belief.

Further the Affiant sayeth not.

Sarah L. K. Lange

Sarah L. K. Lange

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 16th day of August, 2021.

Dianna L. Vaught

NOTARY PUBLIC

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2023
Commission Number: 15207377

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of Evergy Metro, Inc. d/b/a Evergy Missouri Metro and Evergy Missouri West, Inc. d/b/a Evergy Missouri West for Approval of a Transportation Electrification Portfolio	)))))	**Case No. ET-2021-0151**

AFFIDAVIT OF J LUEBBERT

State of Missouri)
) ss.
County of Cole)

COMES NOW J Luebbert and on his oath declares that he is of sound mind and lawful age; that he contributed to the Staff Rebuttal Report; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

J Luebbert

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 16th day of August, 2021.

DIANNA L. VAUGHT
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: July 18, 2023
Commission Number: 15207377

Dianna L. Vaught
NOTARY PUBLIC

Evergy's Proposed Transportation Electrification Portfolio

Missouri PSC Technical Conference Planning Session #2

June 11, 2021

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ATTACHMENT 1

Meeting Kickoff

- Safety Moment
- Roll Call
- Session 1 Summary
  - Goal is to use conferences to negotiate a settlement
  - Staff worksheet envisioned to play a central role in program analysis
  - Evergy addressed several questions related to the KC Streetlight Project
- Session 2 Goals
  - TE Tariff (Rebates) – Clarify comments/responses
  - Staff Worksheet (Residential) – Introduce Evergy changes and identify path to finalization
  - Establish objectives and action items for Session 3

Action Item Review

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Action Item Log – For Review/Discussion

Item	Date Assigned	Date Due	Date Complete	Action Item Description	Responsible Org (Individual)	Status / Remarks
1	6/7/21	6/9/21	6/8/21	Provide list of questions posed to Evergy during 7-Jun technical conference, or confirm these will be provided via the DR process	OPC (Marke)	Provided via e-mail from John Clizer on 8-Jun
2	6/7/21	6/9/21		Provide questions/comments related to Schedule TE (Rebate Program Tariff)	Parties	Questions received from OPC via e-mail on 8-Jun. Responses included w/11-Jun conf doc pkg.
3	6/7/21	6/9/21		Provide questions/comments related to Staff's RR Worksheet	Parties	None received
4	6/7/21	6/10/21	6/10/21	Provide breakout of Table 7 in testimony report (Highway, TNC, streetlight)	Evergy (Marine)	Included with 11-Jun conference document package
5	6/7/21	6/10/21	6/10/21	Provide responses to Parties' comments related to Schedule TE (Rebate Program Tariff) ***[11-Jun Conference Discusion Item]***	Evergy (Voris)	Staff comments received on 2-Jun (native file markup). Responses included w/11-Jun conf doc pkg.
6	6/7/21	6/10/21	6/10/21	Provide responses to Staff's RR Worksheet ***[11-Jun Conference Discusion Item]***	Evergy (Voris)	Included with 11-Jun conference document package
7	6/7/21	6/11/21		Determine Metropolitan Energy Center (MEC) future participation	Parties	Discuss during 11-Jun technical conference
8	6/7/21	6/11/21	6/10/21	Provide timeline for development of streetlight cost estimates	Evergy (Marine)	Site specific cost quotes are expected by 20-Aug
9						
10						
11						
12						
13						
14						
15						
16						

Response to Action Item 4

Provide breakout of Table 7 in testimony report

Table 7: CCN Cap Increase Summary

Jurisdiction	Current Cap	Identified Need	Requested Revised Cap	Spending Plan
MO METRO	400	450	500	$1.2M
MO WEST	250	275	300	$1.6M
TOTAL MO	**650**	**725**	**800**	**$2.8M**

Source: Testimony Report Dated 26-May-2021

Program/Jurisdiction	Sites	Identified Need - Stations	Unidentified Need - Future Use Cases	Notes
Highway Corridor/MO West	8	24		Initial Highway Corridor installs to include L2 x 1 and DCFC x 2; does not consider future growth needs at the site
Streetlight/MO Metro	50	50		50 maximum of L2 chargers
TNC_Rideshare/MO Metro	4	4		DCFC
Unidentified Need - Other Use Cases/MO West			26	Highway Corridor site growth; underserved areas not supported by 3rd parties
Unidentified Need - Other Use Cases/MO Metro			46	Underserved areas not supported by 3rd parties

Source: TE Filing Workpapers of EV Chargers Needed above the Existing Cap

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Rebate Tariff Program Discussion

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Evergy's role in the TE transition

Shorter-term programs support and inform the utility's longer-term responsibilities

Support and encourage EV adoption in the short-term

- Primary lever is charging infrastructure
- Benefits of near-term EV adoption
  - Beneficial load (↓*rate pressure*)
  - Data / Relationships
  - Reduce adoption "hockey stick"
- Temporary role until stronger third-party investment emerges

Core responsibility and opportunity:
Manage the transition to electrification at scale

Maximize benefits for all customers in the long-term

- Fill market gaps for underserved customers
- Create proactive, well-planned deployment of EV charging infrastructure
- Ensure many types of EV customers are served (LD, MHD, fleet, TNC, etc.)
- Increase role in managed charging for grid benefits

U.S. EV Supply-Side Activity – The Past is not the Future

*Automakers recently pledged **>$30 Billion** towards domestic EV manufacturing **by 2025***

Example all-electric vehicle production goals:

- GM: 2035
- Volvo: 2030
- Honda: 2030
- Jaguar: 2025
- Ford: 2030 (Europe)
- Fiat: 2030
- Toyota: 70% of U.S. sales to be BEV/PHEV by 2030

U.S. EV start-ups add pressure:

- Tesla
- Rivian
- Lion Electric
- Lordstown
- Proterra
- and more…

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Purpose and Benefits of Proposed Residential Rebates

Supporting more grid efficient charging and preparing homes for an EV future

Homeowner/Renter

- Proposed rebate unlocks the above benefits by reducing the cost barrier to L2 charging
- L2 charging is ~10% more efficient than L1, which benefits both customer and grid
- L2 charging is 6x faster than L1, which facilitates the move to off-peak charging
- *Data from this program provides a foundation for future activities (e.g. grid planning, active charge management)*

Developer

- Temporarily and modestly incentivizes builders to install a L2 charging circuit
- Creates partnership with developers and avenues for education/outreach
- Creates possibility developers will continue installing L2 circuits after the program expires
- Increases likelihood developers will support future code changes involving home charging

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Rebate Tariff Comment Response Log – For Review/Discussion

DR# or Q#	Date Received	Date Due	Commenter	Comment	Tariff Page #	Program	Evergy Response
Q1	6/8/21	6/11/21	John Clizer, OPC	Why is the Company only proposing to rebate outlets and not actual charging infrastructure?	N/A	Resi Retrofit, Dev	Today some EV models come with cord-sets that operate at either 120v or 240v, eliminating the need for a separate EVSE. Additionally, in the future we anticipate that a majority of charge management opportunity will be captured through the EV OEM's on-board telematics, instead of a 3rd party EVSE network.
Q2	6/8/21	6/11/21	John Clizer, OPC	Why is the Company requiring a 40 amp minimum for the outlet?	N/A	Resi Retrofit, Dev	EV charging is the most efficient at the rated capacity of the on-board charger. Many BEVs come with 6.6 kW or 7.6 kW on-board chargers at 240v. A 40a circuit can provide 32a or 7.68 kW @240V (or 6.6 kW @208V). This aligns with the on-board chargers for most passenger BEVs and was selected as the minimum. At these charge levels approximately 20 miles of range can be provided per hour, which allows most charging to be accomplished in a 3-4 hour window and allows for future charge management during the 6-hour TOU Super Off-Peak time period.
Q3	6/8/21	6/11/21	John Clizer, OPC	How have the dollar limits for the rebate been determined? Does Evergy have any support for the cost estimates?	N/A	Resi Retrofit, Dev	Evergy surveyed 22 electrical contractors throughout its service territory. The responses ranged from $100 to $1200. The average value calculated based on the 22 responses was approximately $584 with a median of $528.
Q4	6/8/21	6/11/21	John Clizer, OPC	What benefits does this program hold for non-participants? What evidence does the Company have that switching from level one to level two chargers in individual resident's homes is likely to increase the rate of EV adoption?	N/A	Resi Retrofit, Dev	Non-participants will benefit from downward pressure on rates via the more efficient use of energy. The intent of the residential program is not to increase EV adoption but rather: 1. Enable off-peak charging with a faster speed of charging via the 240V outlet in which EV drivers can charge off peak in a shorter number of hours instead of starting their charge immediately upon arrival at home during the residential high load periods. 2. Provide 10% more efficient charging via the 240V outlet than low-capacity 120v charging for the residential homeowner and 3. by identifying the EV driver accounts as EV drivers, Evergy will be able to analyze their charging patterns with and without TOU rate adoption to better understand potential grid impacts and guide the development of future charge management programs that will reduce costs for all customers.
Q5	6/8/21	6/11/21	John Clizer, OPC	Why is Evergy offering rebates for installation of highway corridor chargers if the Company is also planning a highway corridor expansion of its CCN? What risk of overlap is there and what is the Company doing to address this risk?	N/A	Commercial Rebate	Evergy CCN highway corridor expansion is proposed for 8 sites on secondary and tertiary highways, areas Evergy anticipates 3rd parties will not be interested in installing. Evergy would not install a CCN charger in the same corridor location as a 3rd party. Commercial highway corridor applications will be evaluated via pre-approval to ensure there is no overlap in highway corridor locations.

Rebate Tariff Comment Response Log – For Review/Discussion

DR# or Q#	Date Received	Date Due	Commenter	Comment	Tariff Page #	Program	Evergy Response
Q6	6/8/21	6/11/21	John Clizer, OPC	Is there any mechanism in place to prevent all or a majority of costs being diverted to only one category? How does Company expect total program costs to be divided by category if at all?	N/A	Commercial Rebate	In the TE Filing Budget Workpaper, Commercial Rebate Budget tab, the proposed rebates are identified by category for directional purposes based on the projected port need and anticipated customer demand. Evergy expects to utilize the Max port targets but have discretion to divert the funds between categories.
Q7	6/8/21	6/11/21	John Clizer, OPC	Are there intentions to place requirements on the "workplace or fleet" category that require actual ownership/acquisition of EVs for a fleet?	N/A	Commercial Rebate	Workplace - No; workplace charging is intended to support existing EV drivers as well as foster EV adoption by providing charging at their place of employment. Workplace charging is vital to the ecosystem of EV charging to provide an option to EV drivers who may not have access to home charging and to help ensure EV adopters feel confident that they have a place to charge. Fleet - Yes; one EV minimum.
Q8	6/8/21	6/11/21	John Clizer, OPC	How does the $500,000 per "business entity" identified in the tariff define that term? For example, is each individual Walmart superstore a "business entity" in and of itself, or is Walmart Stores Inc. (the parent company) the overall business entity and thus only $500,000 in total may be spent to install chargers at all Walmart superstores across the Evergy Metro and West territories? What of franchisee based businesses? For strip malls and business plazas, is the real-estate owner the business entity or is each individual store/office its own business entity?	N/A	Commercial Rebate	Intended to define business entity as follows: Affiliated Entities - Any entities that directly or indirectly control, are controlled by, or are under common control with other entities, with "control" meaning the possession, directly or indirectly, of the power to direct management and policies, whether through the ownership of voting securities (if applicable) or by contract or otherwise.
Q9	6/8/21	6/11/21	John Clizer, OPC	Regarding the commitment of a commercial customer to "install, own, and operate" the EVSE, what happens in the event that a.the commercial customer lease expires and is not renewed b.the commercial customer goes out of business c.the commercial customer transfer's ownership or is acquired by another interest In short, how legally enforceable is the "commitment" expressed in the tariff and what recourse does Evergy see if the commitment is not met?	N/A	Commercial Rebate	Evergy would anticipate service reports will to continue to be worked remotely via the displayed toll-free contact number when called by drivers. Agree that the "commitment" expressed in the tariff is not legally enforceable. Evergy is committed to identifying and discussing risk mitigation options.

Rebate Tariff Comment Response Log – For Review/Discussion

DR# or Q#	Date Received	Date Due	Commenter	Comment	Tariff Page #	Program	Evergy Response
Q10	6/8/21	6/11/21	John Clizer, OPC	Regarding the "multifamily" category, how many families would be required? Under the current definition, it appears that something as small as a semi-detached duplex would qualify; is this intentional? Does the Company intend to add language requiring proof that residents of the multifamily dwelling own an electric vehicle prior to disbursement of funds?	N/A	Commercial Rebate	The multifamily definition can be further clarified to be buldings with 4 or more units with a property manager and/or complex owner; not individual tenants with separately metered common areas. Evergy does not intend to add language requiring proof that residents of the MDU drive an EV. EV drivers in a multifamily complex do not have access to home charging to bolster confidence that they can drive an EV. Access to and visibility of EV charging infrastructure is necessary to eliminate range anxiety and is part of the EV ecosystem to drive EV adoption.
Q11	6/2/21	6/11/21	Robin Kliethermes, MPSC	What are Evergy's requirements? (for qualified EVSE)	160.1	Definitions	Evergy will conduct an RFI to compile the list of Qualified EVSE that rebate participants may choose from to qualify for the rebate. The requirements as currently drafted include: networked, SAEJ1772 connector (L2) and SAEJ1772 and CCS connector (DCFC), ADA compliant, listed by a National Registered Test Lab, Energy Star certified, multiple payment options, 24/7 driver assistance customer service, collection of session utilization data, capable of receiving a demand response signal, open communication standards that support interoperability.
Q12	6/2/21	6/11/21	Sarah Lange, MPSC	What is the cutoff for disbursements? How does timing work?	160.2	Resi Retrofit Rebate	As Evergy will need data/feedback from all funded projects for Reporting purposes, a requirement may need to be set that individual projects are completed (e.g. commercial project electrified) on or before Jan 31, 2027
Q13	6/2/21	6/11/21	Sarah Lange, MPSC	Need to delineate ratebase increases associated with new/increased load, both supported and unsupported by line extension revenue model.	160.2	Resi Retrofit Rebate	Worksheet proposed by Staff to assist in analysis is in progress
Q14	6/2/21	6/11/21	Sarah Lange, MPSC	What about ToU rates, DR programs, critical peak programs? V2G?	160.3	Resi Retrofit Rebate	TOU rates are available today and are optional to the rebate participant. Evergy believes TOU should be a customer choice. Knowing the rebate participants account will allow Evergy to evaluate and learn from driver charging patterns which can be used to inform future programs and grid management activities. If every rebate participant were on TOU, Evergy would lose visibility into actual charging impacts. DR would not be readily available as it would require an EVSE with an API or OGVIP to the EV via the OEM telematics system. See this in the future. Critical Peak is not a rate option available today. V2G is not there yet technically for use at a residential home. Most LDVs are unable to do bidirectional charging today.

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Rebate Tariff Comment Response Log – For Review/Discussion

DR# or Q#	Date Received	Date Due	Commenter	Comment	Tariff Page #	Program	Evergy Response
Q15	6/2/21	6/11/21	Sarah Lange, MPSC	Recommend removing program (Resi Developer Rebate). Ripe for free ridership. Incentive is 5x oversized. Cost of administration is not justified by a program with a reasonable size and accounting for reasonable assumed levels of free ridership.	160.4	Resi Dev Rebate	The intent of the Developer rebate program is to engage developers in advance of building codes to install a L2 charging circuit which supports more grid efficient charging and prepares homes for an EV future. A partnership with developers can create an avenue for education/outreach. The pilot hopes to change the behavior of developers to continue installing the L2 circuits after the program expires and increase the likelihood that developers will support future building code changes in support of EV home readiness.
Q16	6/2/21	6/11/21	Sarah Lange, MPSC	How do they prove they did this for the rebate/EV charging availability? Where does the outlet need to be located in the house/garage/outdoors?	160.4	Resi Dev Rebate	It is unlikely that in new construction a 240V outlet will be installed unless building codes require such due to the extra cost. In order to receive the incentive, the applicant must provide proof of outlet installation by a certified electrician, costs and date as well as photos of the electrical panel and outlet marked "EV Only". Outlet should be located in the garage.
Q17	6/2/21	6/11/21	Robin Kliethermes, MPSC	What happens if the property is sold by the developer prior to an on-site inspection?	160.4	Resi Dev Rebate	Evergy's intent is to conduct random inspections. Should the property be sold prior to an on-site inspection and Evergy is denied access for the inspection, Evergy will have to assume based on the required documents at the time of application that the EV outlet was put in place accordingly.
Q18	6/2/21	6/11/21	Robin Kliethermes, MPSC	Is there a maximum level of rebates per developer?	160.4	Resi Dev Rebate	There is not a maximum currently proposed per developer. It could be of an advantage to the developer to market an entire subdivision as being EV-ready.
Q19	6/2/21	6/11/21	Sarah Lange, MPSC	Why? They get the $250 regardless of cost?	160.4	Resi Dev Rebate	Based on a survey conducted by Evergy, see detail below, only 1 out of 22 contractors said the 240V EV outlet installation would be less than $250 per install. Evergy wanted the incentive to be of enough value to engage the developer/builder to install the EV outlet and drive a behavior change in advance of revised building codes. Receipts provided with the application will provide valuable data to inform future incentives. For reference, the Salt River Project in AZ has a similar program with a rebate of $300.
Q20	6/2/21	6/11/21	Sarah Lange, MPSC	What can the developer tell you other than "yep, we liked extra cash." How will this be used for EV versus a freezer, hot tub, dryer, welder, etc.. It should not cost $250 to install a 240 plug and circuit breaker in a home under construction. Depending on distance from panel location, materials are approximately $50.	160.4	Resi Dev Rebate	Evergy surveyed 22 electrical contractors throughout its service territory. The responses ranged from $100 to $1200. The average value calculated based on the 22 responses was approximately $584 with a median of $528.

Rebate Tariff Comment Response Log – For Review/Discussion

DR# or Q#	Date Received	Date Due	Commenter	Comment	Tariff Page #	Program	Evergy Response
Q21	6/2/21	6/11/21	Robin Kliethermes, MPSC	Please provide an example of a retrofit project?	160.5	Commercial Rebate	A retrofit project would apply to a commercial facility already constructed.
Q22	6/2/21	6/11/21	Sarah Lange, MPSC	Even if it exceeds program costs (flat rebate)? This seems excessive with or without cap of actual cost.	160.5	Commercial Rebate	See comments to Q20 above on installation costs Evergy received via a survey
Q23	6/2/21	6/11/21	Sarah Lange, MPSC	Consider breaking these into two programs – fleet use is more predictable and workplace use is very speculative in today's economy.	160.5	Commercial Rebate	In the TE Filing Budget Workpaper, workplace/fleet proposed L2 ports are a directional target. All the proposed DCFC ports would apply to Fleet only.
Q24	6/2/21	6/11/21	Sarah Lange, MPSC	What kind of parking situation? Can this include a port inside a dedicated garage connected to an apartment or other assigned parking? What defines a "site?" A building? A tract?	160.5	Commercial Rebate	Charging infrastructure at multifamily dwellings is intended to be in common areas/nondesignated parking spaces not assigned to a single tenant. A multifamily site will inclusive of the entire complex under one owner.
Q25	6/2/21	6/11/21	Sarah Lange, MPSC	How defined (business entities)? What about commonly owned LLCs (example "123 Main Street, LLC," "125 Main Street LLC," "127 Main Street, LLC"	160.5	Commercial Rebate	Affiliated Entities - Any entities that directly or indirectly control, are controlled by, or are under common control with other entities, with "control" meaning the possession, directly or indirectly, of the power to direct management and policies, whether through the ownership of voting securities (if applicable) or by contract or otherwise.
Q26	6/2/21	6/11/21	Robin Kliethermes, MPSC	What is the criteria for site suitability?	160.6	Commercial Rebate	See attached file - Site Suitability
Q27	6/2/21	6/11/21	Sarah Lange, MPSC	ToU rates, DR programs, V2G, Critical peak? (Terms and Conditions)	160.6	Commercial Rebate	EVSE with DR capability is already a requirement (see tariff language); participant must agree to future DR events. A TOU rate option for separately metered EV charging is available via the proposed BEVCS rate; but is optional and should be customer choice for the same reasons stated above for the residential rebate. Critical Peak is not a rate option available today. V2G technology is not readily available.
Q28	6/2/21	6/11/21	Sarah Lange, MPSC	How does this work with multifamily? How is this enforced at workplace? (dedicated EV parking spaces)	160.6	Commercial Rebate	Evergy will require photos at the time of application of the dedicated EV parking spaces in joint use parking areas be branded as such - 2 spaces per L2 dual port chargers and 1 space per DCFC (an option for Fleet only). As part of its learnings from the CCN deployment, Evergy knows EV drivers will not find it acceptable for ICE vehicles to be parked in the designated EV spaces and will let the commercial business know of its concern and/or leave a note on the ICE vehicle themselves.

Rebate Tariff Comment Response Log – Q26 Response

Highway	A Highway site is a parking facility within one mile of the highway intersection with amenities in the immediate vicinity, 3-phase power, and publicly accessible. Examples of a Highway site include travel centers, convenience stores and other public locations with available amenities.
Non Highway Public	Public sites are parking spaces that have been designated by property owners or lessee as being available to and open to the general public. Sites considering DC Fast Charging should include 3-phase power. It may include on street parking, surface lots or parking garages. Examples of public sites include retail locations, restaurants, parks, schools, destination locations, motels/hotels, etc.
Workplace	Workplace sites are intended to provide EV charging access to employees or patrons of the business that occupies the premises. Examples of workplace sites include office buildings, universities, schools, hospitals, and other similar facilities.
Fleet	Fleet sites support electrified fleet vehicles. Sites considering DC Fast Charging should include 3-phase power. The charging equipment at the site is typically for Fleet use and is not publicly accessible.
Multi-Family	A multi-family dwelling site is a parking facility that serves multiple separate housing units for residential inhabitants that are contained within one building or several buildings within one complex.. Multi-family dwelling site examples include apartment buildings, condominiums, and co-ops.

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Staff Worksheet – Residential Programs (Excel-Based Discussion)

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Next Steps

Next Steps

- Summarize new action items
- Tech Conference Schedule Discussion
  - Initiate pilot rate tariff discussion (ETS, BEVCS)?

Date	Duration	Topics	Materials	Notes
Friday, June 4 @ 10am CT	60 minutes	Planning		
Friday, June 11 @ 10:30am CT	90 minutes	TE Pilot Program tariff / Staff Worksheet	Comments/questions, requested by 6/9	Staff have sent initial questions via email (6/2)
Monday, June 21 @ 10:30am CT	90 minutes	ETS & BEVCS Pilot Rate tariffs	Comments/questions, requested by 6/15	
Friday, June 25 @ 10:30 am CT	90 minutes	Portfolio budget, program sizing	Staff's proposed worksheet, requested by 6/21	
Friday, July 2 @ 10:30 am CT	90 minutes	Other topics	Comments/questions, requested by 6/28	Consider alternative date (holiday)?
Friday, July 9 @ 10:30am CT	90 minutes	Follow-up on outstanding items/issues		

Evergy's Proposed Transportation Electrification Portfolio

Missouri PSC Technical Conference Planning Session #3

June 21, 2021

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ATTACHMENT 1

Meeting Kickoff

- Safety Moment
- Roll Call
- Session 2 Summary
  - Robust discussion of proposed resi programs
    - TOU / Education
  - Fielded general questions about CCN
- Session 3 Goals
  - Discuss proposed commercial rebate programs
  - Discuss education/mktg, CCN as time allows
  - Establish objectives and action items for Session 4

Action Item Review

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Action Item Log – For Review/Discussion

Item	Date Assigned	Date Due	Date Complete	Action Item Description	Responsible Org (Individual)	Status / Remarks
1	6/7/2021	6/7/2021	6/9/2021	Provide list of questions posed to Evergy during 7-Jun technical conference, or confirm these will be provided via the DR process	OPC	Provided via e-mail from John Clizer on 8-Jun
2	6/7/2021	6/7/2021	6/9/2021	Provide questions/comments related to Schedule TE (Rebate Program Tariff)	Parties	Questions received from OPC via e-mail on 8-Jun. Responses included w/11-Jun conf doc pkg.
3	6/7/2021	6/7/2021	6/9/2021	Provide questions/comments related to Staff's RR Worksheet	Parties	None received
4	6/7/2021	6/7/2021	6/10/2021	Provide breakout of Table 7 in testimony report (Highway, TNC, streetlight)	Evergy (Marine)	Included with 11-Jun conference document package
5	6/7/2021	6/7/2021	6/10/2021	Provide responses to Parties' comments related to Schedule TE (Rebate Program Tariff) *[11-Jun Conference Discusion Item]*	Evergy (Voris)	Staff comments received on 2-Jun (native file markup). Responses included w/11-Jun conf doc pkg.
6	6/7/2021	6/7/2021	6/10/2021	Provide responses to Staff's RR Worksheet *[11-Jun Conference Discusion Item]*	Evergy (Voris)	Included with 11-Jun conference document package
7	6/7/2021	6/7/2021	6/11/2021	Determine Metropolitan Energy Center (MEC) future participation	Parties	Discuss during 11-Jun technical conference
8	6/7/2021	6/7/2021	6/11/2021	Provide timeline for development of streetlight cost estimates	Evergy (Marine)	Site specific cost quotes are expected by 20-Aug
9	6/11/2021	6/22/2021		Provide questions for MEC presentation on 25-Jun (Tentative)	OPC	
10	6/11/2021	6/22/2021	6/18/2021	Provide detailed list of program goals, costs, other associated costs, avoided costs (as applicable), revs, etc.	Evergy (Voris)	Included with 22-Jun conference document package
11	6/11/2021	6/22/2021	6/18/2021	Provide details on education approach and how it differs from marketing	Evergy (Voris)	Included with 22-Jun conference document package
12	6/11/2021	6/22/2021	6/18/2021	Provide cost information associated with the CCN installations (labor, materials, etc.)	Evergy (Voris)	Included with 22-Jun conference document package
13						
14						
15						

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Commercial Rebate Program

(Excel-Based Discussion)

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Program Details Matrix

(Excel-Based Discussion)

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CCN Expansion

Cost Discussion

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CCN Expansion – Equipment Types

- Level 2 – ChargePoint CT4000
  - Standard electrical output per port 7.2 kW @ 240v (6.2 kW @ 208v)

- DCFC – ChargePoint Express 250 (CPE250)
  - Standard electrical output – maximum output power = 62.5 kW

- DCFC – Paired ChargePoint Express 250 (CPE250)
  - Standard electrical output - maximum output power = 125 kW with one EV charging

CCN Expansion – Projected Site Costs

Program/Jurisdiction	Sites	Budget	Identified Need - Stations	Unidentified Need - Future Use Cases	Notes
Highway Corridor/MO West	8	$1.6M	24		Initial Highway Corridor installs to include L2 x 1 and DCFC x 2; does not consider future growth needs at the site
Streetlight/MO Metro	50	$0.8M	50		50 maximum of L2 chargers
TNC_Rideshare/MO Metro	4	$0.4M	4		DCFC
Unidentified Need - Other Use Cases/MO West				26	Highway Corridor site growth; underserved areas not supported by 3rd parties
Unidentified Need - Other Use Cases/MO Metro				46	Underserved areas not supported by 3rd parties

Highway Corridor

Line Extension Total		**$53,127**
Material	**$14,259**	
Labor	**$20,556**	
Overhead	**$18,312**	
Make Ready + Installation + EVSE		**$152,748**
Total Site		**$206,875**

Possible L2 Site – 3 Stations

Line Extension Total		**$16,892**
Material	**$6,016**	
Labor	**$5,623**	
Overhead	**$5,253**	
Make Ready + Installation + EVSE		**$42,078**
Total Site		**$58,970**

TNC/Rideshare

Line Extension Total		**$25,833**
Material	**$8,350**	
Labor	**$5,790**	
Overhead	**$4,923**	
Make Ready + Installation + EVSE		**$73,700**
Total Site		**$99,533**

Streetlight Project – Single Port L2

Line Extension	**TBD**
Make Ready	**TBD**
EVSE	**$0**

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Resi Retrofit Rebate Program

Education Approach

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Customer Education

Educating customers requires the use of Marketing Communication channels and tactics

- A customer education plan is designed to utilize marketing techniques as communication tools to educate customers about program details and benefits.
- Customer education & outreach relies on marketing tools: media channels, timing, research, segmentation, journey development and more to help inform an audience.
- Teachers educate kids. Marketers educate customers.

"Great teachers instinctively understand that teaching and marketing are essentially the same thing."

Mike Connor, President of Connor Associates

Education is the "what"

What do we want a customer to know or understand?

- **Program Benefits**
- **How to be Successful**
- **Understanding the "Why"**
- **Additional Offerings or Options**
- **How to Enroll**

Marketing is the "how"

Audience & Message Development
- Who do we want to inform?
- What education messages resonate with each audience?
- Message testing and research

Strategy Development
- When is the best time to educate customers on issue?
- What tactics/channels should we use?
- What creative/images help tell the story?

Performance & Measurement
- Are customers being successful?
- Where in the process are they dropping out?
- Satisfaction and recall

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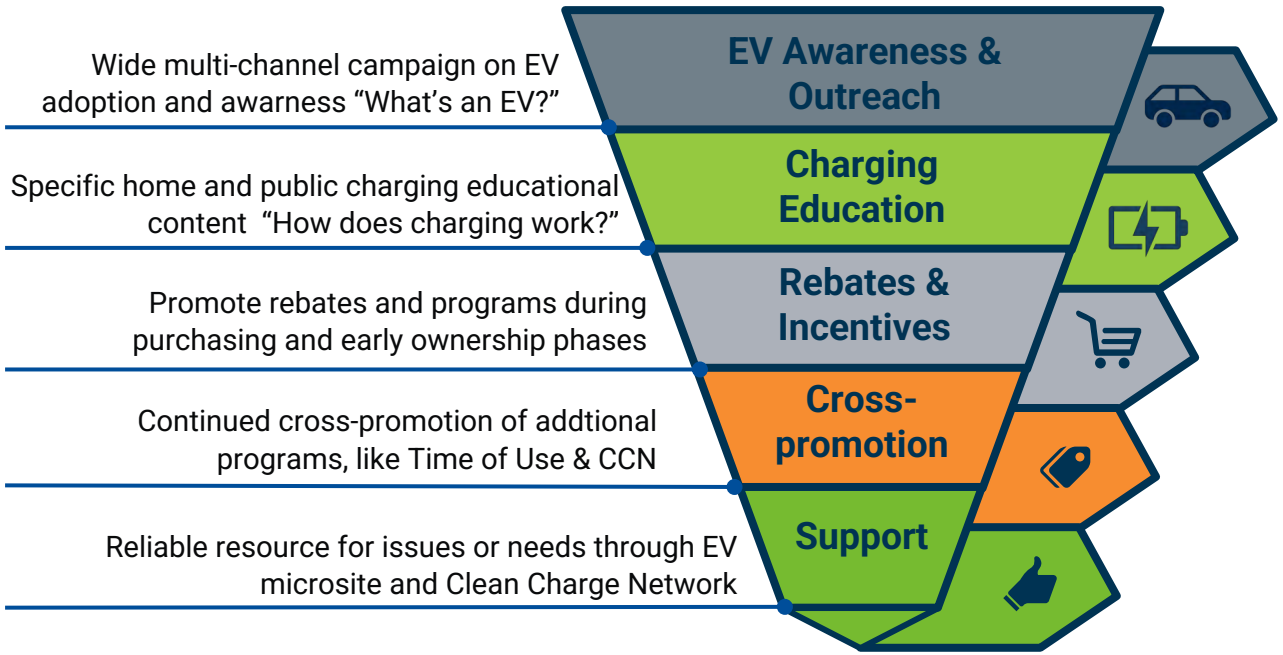
Residential Customer Education & Outreach

- **Strategy:**
  - On-going engagement with customers, utilizing multi-channel marketing, throughout all levels of their EV journey from awareness to ongoing support
- **Goals:**
  - Be seen as an information leader and a place for education on all things: EV, Charging, Rates, Costs, Resources
  - Increase EV adoption while encouraging and educating drivers on beneficial charging
  - Educate and enroll customers in rebate offers and cross-promote Time of Use Plan(s)
- **Plan Timeline:**
  - Sept 2021: Marketing Plan Development
  - Q1 2022: Soft Launch and Message Testing
  - Q2 2022: Full Launch

EV Education and Outreach Journey



Encouraging Time of Use & Beneficial Charging for EV Drivers

Message and Channel Testing
Summer & Fall of 2021, Evergy will be testing TOU messaging and outreach tactics for current and potential EV drivers to better understand motivations and message performance.

- Results will help shape an on-going targeted outreach to EV drivers to encourage switching to TOU

Possible Outreach Tactics:

1. **Web presence-** Develop webpage(s) for program focused on educating consumer on the benefits of level 2 charging and encouraging them to charge during off-peak timeframes. This page serves as a singular destination for all other activities.

2. **Specialized report-** Use Evergy's new weekly energy report to cross-promote TOU and educate drivers on beneficial charging behavior to encourage off-peak charging.

3. **CCN Driver/Rebate Participant Outreach-** EV Drivers will be a main audience for ongoing TOU outreach, will continue to use marketing to educate drivers on beneficial charging times.

4. **Cross reference opportunity-** Include as benefit messaging in Evergy's ongoing EV charging education campaign, including cross references in messaging referring to rebate program.

Resi Retrofit Rebate Program

Cost Analysis Summary

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Residential Retrofit Rebate Financial Analysis Summary

Analysis Overview

- The primary avoided cost benefits of the Residential Customer EV Outlet Rebate program are load shifting and efficiency gains.
- With level 2 charging, the vehicle owner can shift charging from the unmanaged home load profile to the smart charging managed load profile. This shift in load greatly reduces on peak usage and results in avoided capacity benefits.
- Level 2 charging is approximately 10% more efficient thus requiring less energy to charge the vehicle. This results in avoided energy benefits.
- The managed and unmanaged load profiles were provided by EPRI. The difference in the managed and unmanaged load profiles was isolated and modeled in DSMore software along with the program costs.
- Program costs include admin costs, rebates and infrastructure costs.

Residential Retrofit Rebate Financial Analysis Summary

Analysis Results

- The resulting TRC (Total Resource Cost Test) for the 5-year program was 1.99 for MO Metro and 1.97 for MO West. A TRC greater than 1 indicates that the program is cost effective.
- The results for all the cost benefit tests are listed below:

Residential Customer EV Outlet Rebate					
Cost Benefit Results					
	TRC	UCT	RIM	SCT	PCT
MO Metro	1.99	3.65	1.83	2.97	0.98
MO West	1.97	3.60	1.85	2.93	0.96

Residential Retrofit Rebate Financial Analysis Summary

Analysis Inputs/Assumptions

MO Metro	Y1	Y2	Y3	Y4	Y5
# of Rebates	195	260	390	325	130
Rebate Costs ($350/rebate)	$ 68,250	$ 91,000	$136,500	$113,750	$45,500
Admin Costs ($23.70/rebate)	$ 4,622	$ 6,162	$ 9,243	$ 7,703	$ 3,081
Total Program Costs	$ 72,872	$ 97,162	$145,743	$121,453	$48,581
MO West	Y1	Y2	Y3	Y4	Y5
# of Rebates	105	140	210	175	70
Rebate Costs ($350/rebate)	$ 36,750	$ 49,000	$ 73,500	$ 61,250	$24,500
Admin Costs ($23.70/rebate)	$ 2,489	$ 3,318	$ 4,977	$ 4,148	$ 1,659
Total Program Costs	$ 39,239	$ 52,318	$ 78,477	$ 65,398	$26,159
Measure Costs:					
L2 infrastructure costs	$660/install				
DSMore file used comes from MEEIA 3 Approved Plan					

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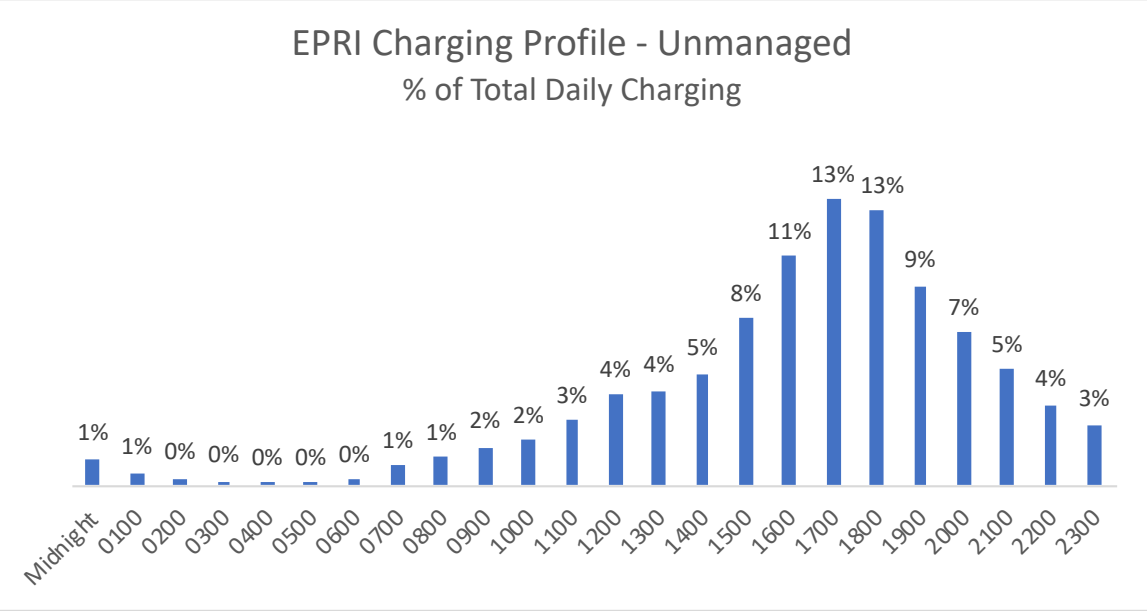
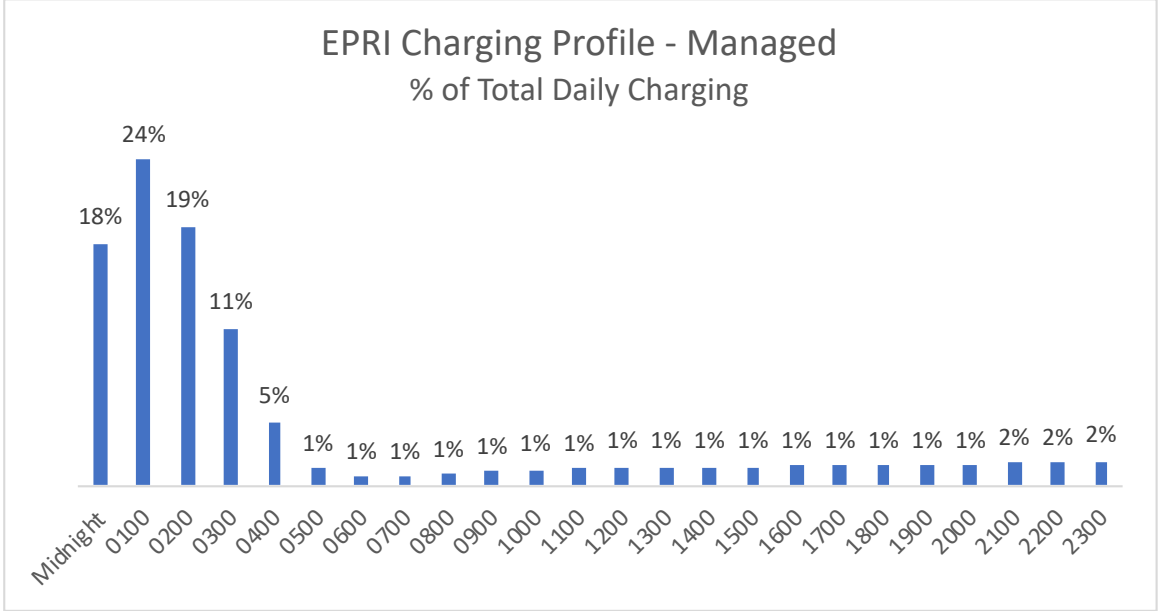
Residential Retrofit Rebate Financial Analysis Summary

Analysis Inputs/Assumptions





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Next Steps

Next Steps

- Summarize new action items
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  - Initiate pilot rate tariff discussion (ETS, BEVCS)?

Date	Duration	Topics	Materials	Notes
Friday, June 4 @ 10am CT	***60 minutes***	***Planning***		
Friday, June 11 @ 10:30am CT	*90 minutes*	*Residential Rebate Program*	*TE Tariff Response Log*	*Staff and OPC provided initial questions on 6/2 and 6/8, respectively*
Monday, June 21 @ 10:30am CT	90 minutes	Commercial Rebate Program	*TE Tariff Response Log*	
Friday, June 25 @ 10:30 am CT	90 minutes	Portfolio budget, program sizing	Staff's proposed worksheet, requested by 6/21	
		ETS & BEVCS Pilot Rate tariffs	Comments/questions, requested by 6/15	
Friday, July 2 @ 10:30 am CT	90 minutes	Other topics	Comments/questions, requested by 6/28	Consider alternative date (holiday)?

Evergy's Proposed Transportation Electrification Portfolio

Missouri PSC Technical Conference Planning Session #4

June 25, 2021

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ATTACHMENT 1

Meeting Kickoff

- Safety Moment
- Roll Call
- Session 3 Summary
  - Continued commercial program tariff discussion
- Session 4 Goals
  - Receive feedback on proposal elements not previously discussed
    - CCN
    - Commercial Program (Charging Station Costs)
    - Rates (Transit & Business EV)
  - Establish objectives and action items for Session 5

Action Item Review

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Action Item Log – For Review/Discussion

Item	Date Assigned	Date Due	Date Complete	Action Item Description	Responsible Org (Individual)	Status / Remarks
1	6/7/2021	6/7/2021	6/9/2021	Provide list of questions posed to Evergy during 7-Jun technical conference, or confirm these will be provided via the DR process	OPC	Provided via e-mail from John Clizer on 8-Jun
2	6/7/2021	6/7/2021	6/9/2021	Provide questions/comments related to Schedule TE (Rebate Program Tariff)	Parties	Questions received from OPC via e-mail on 8-Jun. Responses included w/11-Jun conf doc pkg.
3	6/7/2021	6/7/2021	6/9/2021	Provide questions/comments related to Staff's RR Worksheet	Parties	None received
4	6/7/2021	6/7/2021	6/10/2021	Provide breakout of Table 7 in testimony report (Highway, TNC, streetlight)	Evergy (Marine)	Included with 11-Jun conference document package
5	6/7/2021	6/7/2021	6/10/2021	Provide responses to Parties' comments related to Schedule TE (Rebate Program Tariff) *[11-Jun Conference Discusion Item]*	Evergy (Voris)	Staff comments received on 2-Jun (native file markup). Responses included w/11-Jun conf doc pkg.
6	6/7/2021	6/7/2021	6/10/2021	Provide responses to Staff's RR Worksheet *[11-Jun Conference Discusion Item]*	Evergy (Voris)	Included with 11-Jun conference document package
7	6/7/2021	6/7/2021	6/11/2021	Determine Metropolitan Energy Center (MEC) future participation	Parties	Discuss during 11-Jun technical conference
8	6/7/2021	6/7/2021	6/11/2021	Provide timeline for development of streetlight cost estimates	Evergy (Marine)	Site specific cost quotes are expected by 20-Aug
9	6/11/2021	6/22/2021	6/21/2021	Provide questions for MEC presentation on 25-Jun (Tentative)	OPC	
10	6/11/2021	6/22/2021	6/18/2021	Provide detailed list of program goals, costs, other associated costs, avoided costs (as applicable), revs, etc.	Evergy (Voris)	Included with 21-Jun conference document package
11	6/11/2021	6/22/2021	6/18/2021	Provide details on education approach and how it differs from marketing	Evergy (Voris)	Included with 21-Jun conference document package
12	6/11/2021	6/22/2021	6/18/2021	Provide cost information associated with the CCN installations (labor, materials, etc.)	Evergy (Voris)	Included with 21-Jun conference document package
13						
14						
15						

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Clean Charge Network

KC Streetlight Charging Pilot Project

(Metropolitan Energy Center)

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Clean Charge Network

Highway Corridor / Rideshare

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CCN Expansion – Highway Corridor & Rideshare

Limited DCFC infrastructure currently exists in Evergy's territory

HIGHWAY CORRIDOR

- Complements the commercial rebate program by targeting secondary/tertiary corridor locations
- Limited build-out, 8 sites

RIDESHARE

- Rideshare electrification supports underserved communities or individuals with limited access to to owning or operating their own vehicle due to high costs, impairments, or other mobility barriers
- Evergy expects pilot/partnership opportunities to emerge during next five years
  - E.g. Lyft, Uber, RideKC
- Limited build-out, 4 sites
  - Specific locations (if any) to be determined in collaboration with partners and other stakeholders

CCN Expansion – Scope & Projected Costs

Program/Jurisdiction	Sites	Budget	Identified Need - Stations	Unidentified Need - Future Use Cases	Notes
Highway Corridor/MO West	8	$1.6M	24		Initial Highway Corridor installs to include L2 x 1 and DCFC x 2; does not consider future growth needs at the site
Streetlight/MO Metro	50	$0.8M	50		50 maximum of L2 chargers
TNC_Rideshare/MO Metro	4	$0.4M	4		DCFC
Unidentified Need - Other Use Cases/MO West				26	Highway Corridor site growth; underserved areas not supported by 3rd parties
Unidentified Need - Other Use Cases/MO Metro				46	Underserved areas not supported by 3rd parties

Highway Corridor

Line Extension Total		**$53,127**
Material	**$14,259**	
Labor	**$20,556**	
Overhead	**$18,312**	
Make Ready + Installation + EVSE		**$152,748**
Total Site		**$206,875**

Possible L2 Site – 3 Stations

Line Extension Total		**$16,892**
Material	**$6,016**	
Labor	**$5,623**	
Overhead	**$5,253**	
Make Ready + Installation + EVSE		**$42,078**
Total Site		**$58,970**

TNC/Rideshare

Line Extension Total		**$25,833**
Material	**$8,350**	
Labor	**$5,790**	
Overhead	**$4,923**	
Make Ready + Installation + EVSE		**$73,700**
Total Site		**$99,533**

Streetlight Project – Single Port L2

Line Extension	**TBD**
Make Ready	**TBD**
EVSE	**$0**

CCN Expansion – Equipment Types

- Level 2 – ChargePoint CT4000
  - Standard electrical output per port 7.2 kW @ 240v (6.2 kW @ 208v)

- DCFC – ChargePoint Express 250 (CPE250)
  - Standard electrical output – maximum output power = 62.5 kW

- DCFC – Paired ChargePoint Express 250 (CPE250)
  - Standard electrical output - maximum output power = 125 kW with one EV charging

Commercial Budget Discussion

Charging Station Cost Worksheet

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Commercial Installed Charging Station Cost Projection

		Line Extension		Customer Side					Total Project	
	Max # of ports	Line Extension	LE Allowance	Meter Ped	EVSE	Installation	Total	Max Rebate	Customer Liability	% of Total Project Costs
Highway Corridor - DCFC (50kW)	2	$0 - $60,000+	$0-$27,000	$2,850	$48,000	$8,000-$51,000	$58,850-$101,850	$40,000	$18,850-$94,850	31%-60%
Highway Corridor - DCFC (50kW) + L2	4	$0 - $60,000+	$0-$27,000	$4,000	$55,500	$8,000-$51,000	$67,500-$110,500	$45,000	$22,500-$98,500	33%-58%
MDU - Level 2	10	$0 - $60,000+	$0-$45,000	$1,828	$37,500	$6,000-$45,770	$45,328-$85,098	$25,000	$20,328-$75,098	45%-52%
Workplace - Level 2	10	$0 - $60,000+	$0-$45,000	$1,828	$37,500	$6,000-$45,770	$45,328-$85,098	$25,000	$20,328-$75,098	45%-52%
Workplace - Level 2 (No LE)	10	$0	$0	$0	$37,500	$6,000-$45,770	$43,500-$83,270	$25,000	$18,500-$58,270	43%-70%
Fleet - Level 2	10	$0 - $60,000+	$0-$45,000	$1,828	$37,500	$6,000-$45,770	$45,328-$85,098	$25,000	$20,328-$75,098	45%-52%
Fleet - DCFC	2	$0 - $60,000+	$0-$27,000	$2,850	$48,000	$8,000-$51,000	$58,850-$101,850	$40,000	$18,850-$94,850	31%-60%
Public - Level 2	6	$0 - $60,000+	$0-$27,000	$1,828	$22,500	$3,600-$27,460	$27,928-$51,788	$15,000	$12,928-$69,788	46%-62%
Public - DCFC	2	$0 - $60,000+	$0-$27,000	$2,850	$48,000	$8,000-$51,000	$58,850-$101,850	$40,000	$18,850-$94,850	31%-60%

*Project costs include: Meter pedestal, if needed, EVSE hardware plus shipping costs, 5 yr networking agreeement, installation site design, installation and material costs to operationalize the EVSE, any necessary trenching/boring to the EVSE site from the meter, grading, asphalt or concrete repair after equipment installation

**Project costs do not include: Solar panels, demand mitigation solutions, real estate leases or easements, on site amenities, access road work, additional parking spaces, decorative features, or other site development work, maintenance

Rate Discussion

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Commercial Rates For Transit Customers

TERMS & ELIGIBILITY	GOALS & BENEFITS	5-YR BUDGET (TOTAL)
• Applicable to both Evergy MO jurisdictions • Any fleet that provides public transit services • Designed for depot charging with a 12-hour peak aligned to transit fleet charging • EVSE must be separately metered to take advantage of the rate • Low participation rate expected during initial years of availability	• Support transit fleet electrification • Provide lower and more predictable transportation fuel costs • Incentivize shift to off-peak EV charging • Align cost and cost causation • Focus on equity and maximize benefits of EVs for transit fleets	N/A – implementation costs are reflected in Program Administration

Commercial Rates For Business EV Customers

TERMS & ELIGIBILITY	GOALS & BENEFITS	5-YR BUDGET (TOTAL)
• Applicable to both Evergy MO jurisdictions • Any commercial customer or fleet that plans to install EVSE • Three time of use (TOU) periods aligned with actual costs and time periods for on-road or off-road workplace and commercial fleets • EVSE must be separately metered to take advantage of the rate • Proposed rate is distinct from and independent of existing CCN rates • Low participation rate expected during initial years of availability	• Support EV adoption for commercial customers and fleets • Provide lower and more predictable transportation fuel costs • Incentivize off-peak EV charging • Align cost and cost causation • Focus on equity and maximize benefits of EVs for commercial customers	N/A – implementation costs are reflected in Program Administration

Next Steps

Next Steps

- Summarize new action items
- Tech Conference Schedule Discussion

Date	Duration	Topics	Materials	Notes
Friday, June 4 @ 10am CT	***60 minutes***	***Planning***		
Friday, June 11 @ 10:30am CT	*90 minutes*	*Residential Rebate Program*	*TE Tariff Response Log*	*Staff and OPC provided initial questions on 6/2 and 6/8, respectively*
Monday, June 21 @ 10:30am CT	90 minutes	Commercial Rebate Program	*TE Tariff Response Log*	
Friday, June 25 @ 10:30 am CT	90 minutes	CCN, Commercial = Program Costs, ETS/BEVCS Pilot Rate Tariffs	MEC Presentation, CCN cost info, Commercial cost worksheet	
Friday, July 2 @ 10:30 am CT	90 minutes			
Friday, July 9 @ 10:30 am CT	90 minutes			

CCN Highway Corridor Sites (Proposed)

- Airport/Platte City – I-29/US-71 (38 miles from St Joseph)
- Butler – I-49 (29 miles from Harrisonville and then 31 miles to Nevada)
- Mound City – I-29 (34 miles from St Joseph)
- Clinton – MO-7 and/or MO-13 (40 miles from Harrisonville)
- Warrensburg – US-50 (39 miles from Lee's Summit)
- Marshall – US-65 and/or MO-41 (35 miles from Boonville)
- Carrollton – US-24 (61 miles from Moberly)
- Trenton – US-65 (25 miles from Chillicothe)
- Maryville* – US-71 (39 miles from St Joseph)
- Sedalia* – US-50 (30 miles from Warrensburg)
- Chillicothe* – US-65 (33 miles from Carrollton)

* Sites listed as Tier 3 for VW funds, if available

ATTACHMENT 2

Metropolitan ENERGY CENTER

Project Objective:

Substantially increase access to electric vehicle (EV) fueling in Kansas City, with attention to future usage as well as equity concerns, while saving time and money by combining charging stations with existing streetlight infrastructure

Partnerships:

- Metropolitan Energy Center (lead)
- City of Kansas City, MO
- Evergy
- Black and McDonald
- Lilypad EV
- Missouri University of Science and Technology
- National Renewable Energy Laboratory
- EV Noire
- Westside Housing Organization

EVSE Innovation: Streetlight Charging in City Right-of-Way
This material is based upon work supported by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy (EERE) under the Award Number DE-EE008474.

Inform Future Investment

Findings from this project will help streamline future efforts to support a diverse array of EV drivers through public charging in the city right-of-way.

If viable, lessons learned from the pilot will help bring the streetlight charging solution to scale, pave the way for private sector investment, and help make the transition to an electric vehicle easier for all members of the Kansas City community.

Lessons learned from the pilot will not only inform city-wide guidance for future installations, including best practices for permitting, ownership, parking enforcement, etc., but it will extrapolate to other Missouri communities and nationwide.

Community feedback will inform opportunities for additional resources that will make EVs more accessible to all members of the Kansas City community

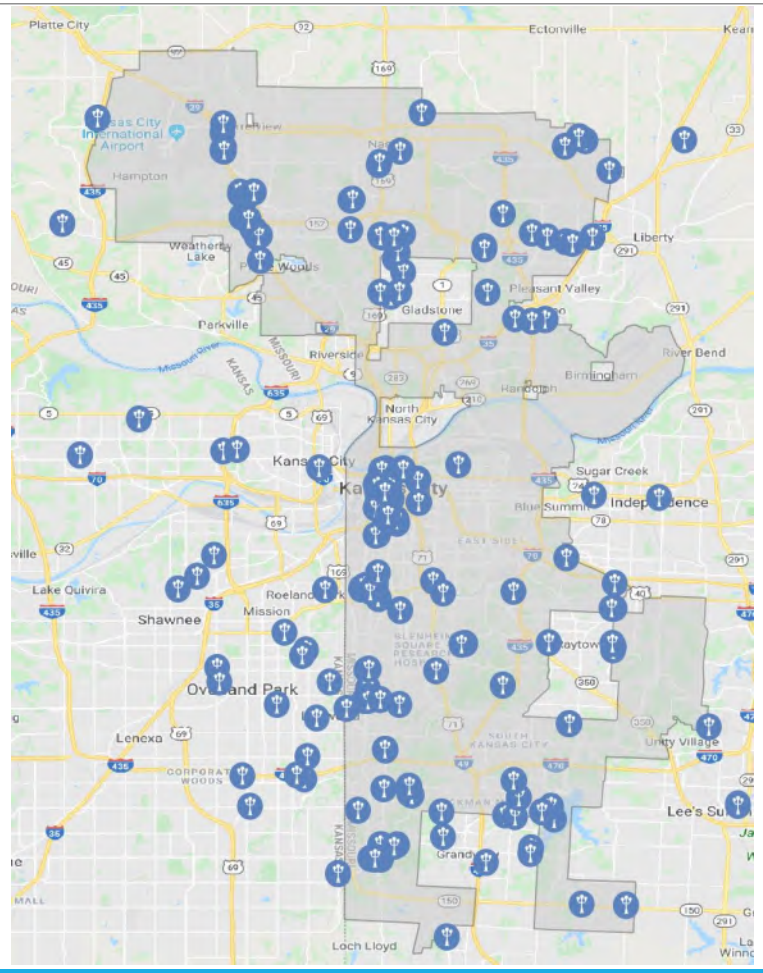
Premise: Using existing streetlight infrastructure provides an affordable solution for building an urban EVSE network

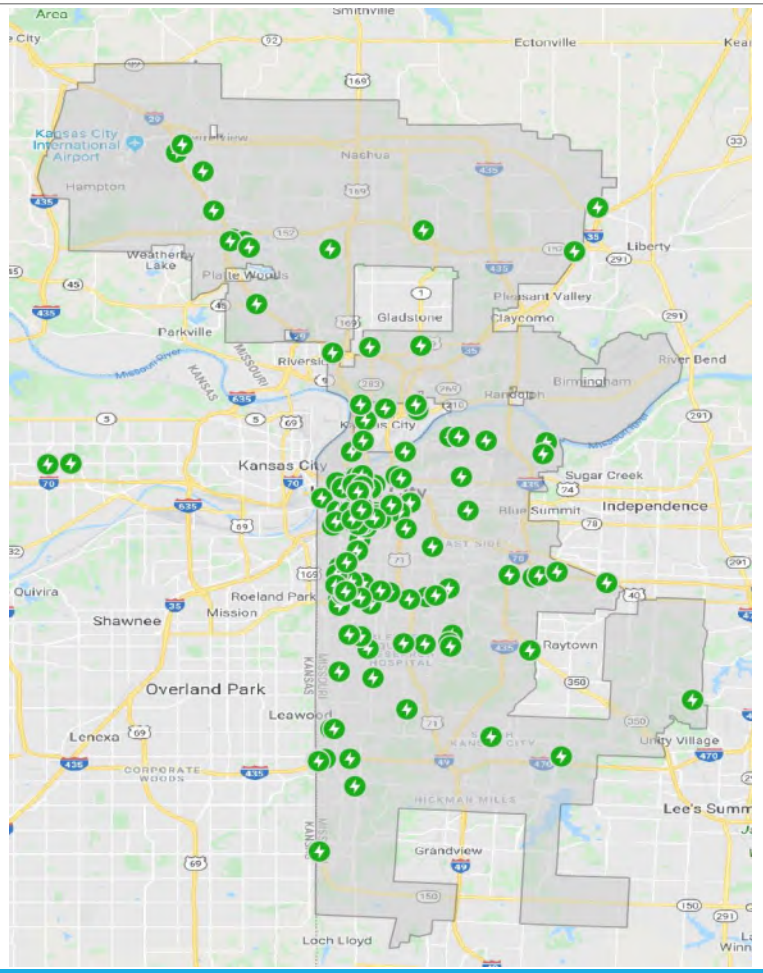
Market Demand Model

Usage frequency was predicted with a Multiple Linear Regression (MLR) model created by Missouri University of Science and Technology. A 4-step prediction model was created with the help of 6-year charging event log data from Chargepoint, travel demand data from Mid-America Regional Council (MARC) and other data.

1. Define factors that affect the usage frequency of EVSE charging infrastructure
   - Existing charging station density
   - Traffic volume
   - Trip production and attraction
   - Land use types
2. Develop Linear Regression Model
   - Set existing charging station's daily usage frequency as dependent variable
   - Set defined features as independent variables
3. Retrieve a list of Point Of Interests (POIs) in Kansas City Missouri from Google Maps as candidate locations
4. Predict the usage frequency of candidate locations and select at least 300 streetlights with highest predicted usage rates for further evaluation

300+ Selected Candidates (left) vs Existing Stations (right)





Demographic Analysis

Prioritize selection for installation of EV charging equipment for the following three scenarios:

- **Easy Win**: Areas with relatively high PEV shares AND that are likely to have poor residential EVSE availability
- **Unlock Potential**: Areas with relatively low PEV shares AND demographics that suggest they would be amenable to PEV adoption AND that are likely to have poor residential EVSE availability
- **Create Opportunity**: Areas with low incomes, low PEV adoption rates, and high multi-family building shares, (which would imply poor residential EVSE access)

Site Evaluations

Challenge: Select 30-50 optimal sites

City approval (reduced 300+ sites to ≈ 80)

Infrastructure ownership

Distance to Evergy power source

Electrical capacity

Curbside parking availability

Streetlight placement

Sidewalks and ADA compliance

City-wide equitable distribution

Community feedback

Cost estimates

Construction and excavation difficulty

(Not all-inclusive)

View Map Online

Approx. 80 sites being considered

Metropolitan
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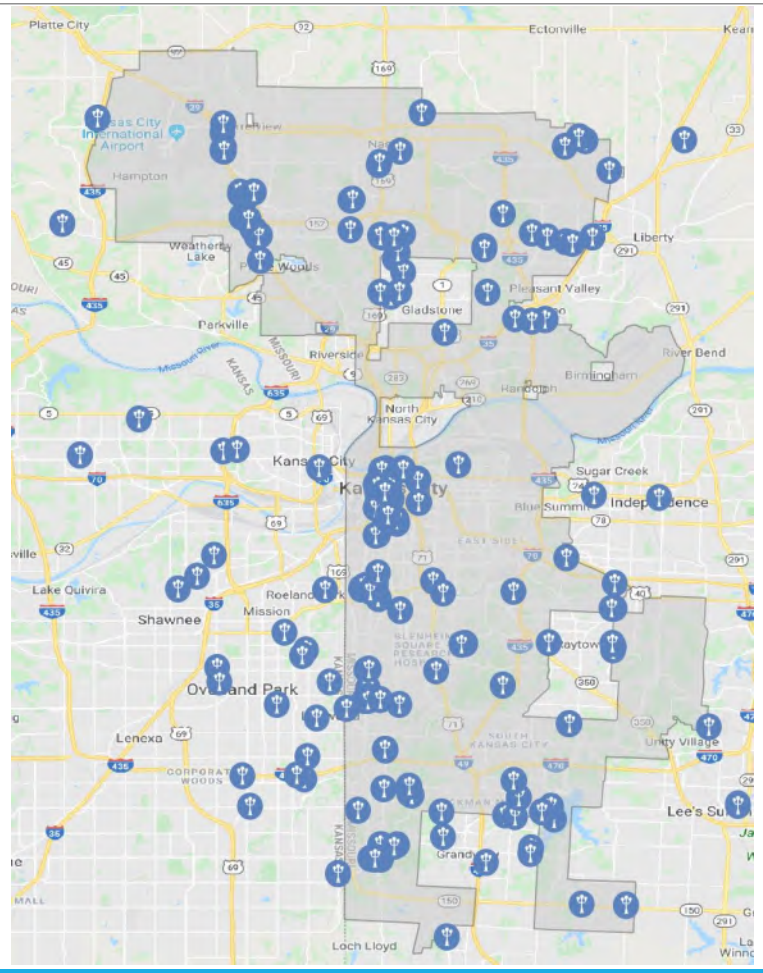

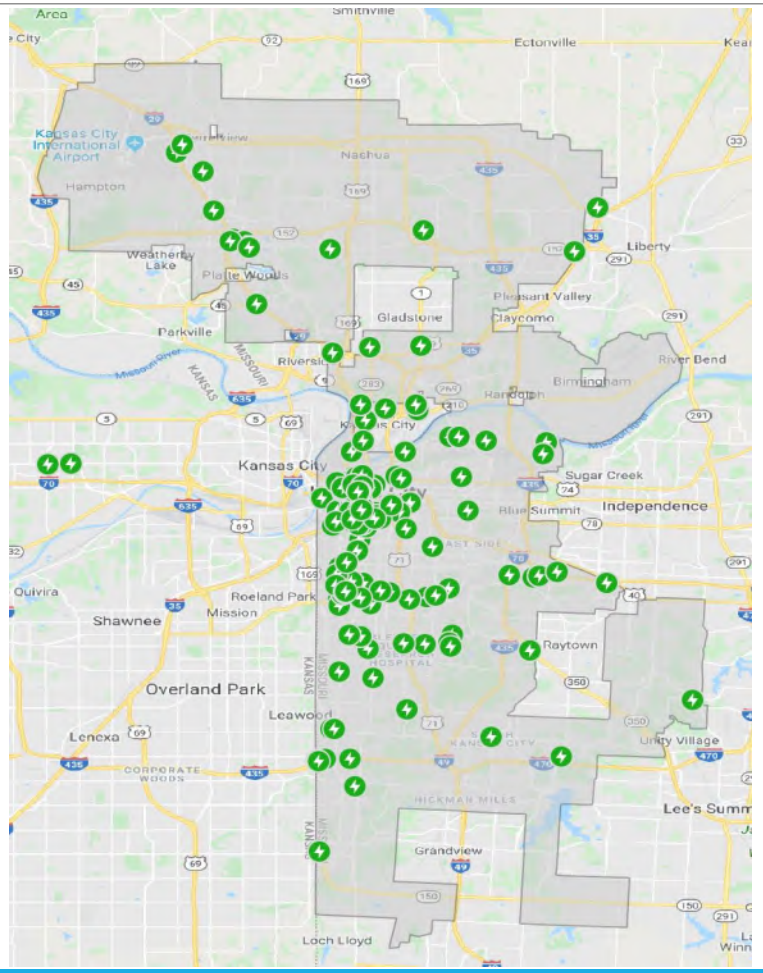

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