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State Corporation Commission
of Kansas

May 6, 2021

Kansas Corporation Commission
1500 SW Arrowhead Rd
Topeka, KS 66604

RE: Docket No. 21-EKME-320-TAR

To Whom it May Concern:

Evergy is submitting an updated testimony report and appendices to correct an error in the cost effectiveness evaluation calculations. This correction results in an increase to the estimated customer benefits associated with increased EV adoption in Evergy's Kansas service territory. Specifically, the estimated net present value (NPV) in Kansas Metro customer benefit through 2040 is **$72.3 million** and the estimated benefit to Kansas Central customers through 2040 is **$46.9 million**.

Specific portions of the testimony report and Appendix C have been changed since the original submission, indicated with redlines on the following pages:

- Testimony report – overview graphic, page 4, page 6, page 18, and page 19
- Appendix C, Kansas Metro Cost Effectiveness Evaluation Report – page 1, page 6, and pages 9-12
- Appendix C, Kansas Central Cost Effectiveness Evaluation Report – page 1 and pages 9-12[1]

In the process of responding to Data Requests, a formula error was discovered in ICF's cost effectiveness model that resulted in a lower weighted average electricity cost. As explained on page 6 of the cost effectiveness reports provided in Appendix C, ICF's modeling uses a weighted mix of residential and commercial rates to reflect the distribution of a typical EV's charging load profile. This estimated cost results from a combination of charging load profiles and current electricity rates. The formula originally used was incorrectly pulling from the coincident kW value rather than the estimated percent of workplace and public charging use. ICF has corrected the formula error and, as a result, the weighted average electricity rate has increased by $0.02 per kWh in both Kansas jurisdictions. This revision has multiple impacts on

[1] The original Kansas Central report incorrectly stated on page 6 that ICF used an average rate of $0.11/kWh, though the initial modeling was based on $0.09/kWh. The revised modeling and resulting report are based on a weighted average rate of $0.11/kWh. As a result, no change is marked in the report.

Public

the cost effectiveness evaluation results, as the increase in total retail electricity costs to charge EVs means greater costs for EV drivers (i.e., participants) but also greater benefit to all utility customers. A summary of the overall impacts is as follows:

- The estimated customer benefits increase compared to the original submission;
- The estimated participant (i.e., EV driver) benefits decrease compared to the original submission; and
- The societal benefits are unchanged.[2]

A clean and redlined version of the updated testimony report are attached hereto. Please feel free to contact me with any questions or concerns.

Sincerely,

Cathryn Dinges
Corporate Counsel

[2] ICF has made a revision to correct a data entry error in the original Kansas Central report (Appendix C). The societal cost per EV was entered as $3,415 in the table on page 10 of the report but should have been $3,811, as stated in the narrative on page 9.

Evergy Transportation Electrification Portfolio Filing Report

Updated May 5~~February 24~~, 2021

Accelerating Transportation Electrification in Kansas

Evergy's proposed transportation electrification filing represents an investment aimed at supporting EV adoption for the benefit of all customers. Over five years, Evergy seeks to empower customers with electrification solutions that leverage carbon-free resources to improve the environment, lower long-term energy costs, and enhance grid operation, with a focus on access, affordability, and durability of solutions.

EVs Benefit All Customers

- LOWER LONG-TERM ENERGY COSTS
- REDUCED EMISSIONS
- ECONOMIC BENEFITS
- GRID FLEXIBILITY
- SUPPORT CUSTOMER GOALS
- DRIVE EQUITABLE OUTCOMES

By the Numbers

5 PROGRAM YEARS

NEW REBATES **3**

2 NEW TOU RATES

TOTAL KS INVESTMENT **$19.3M**

~~$46M~~ **$72M** KS METRO TOTAL CUSTOMER BENEFITS

KS CENTRAL TOTAL CUSTOMER BENEFITS ~~$26M~~ **$47M**

OF EVS ESTIMATED IN TERRITORY:

Jurisdiction	Sept. 2020	2025
KS Central	1,997	11,967
KS Metro	3,030	14,471

Evergy's proposed filing addresses a broad range of TE customer needs

REBATES

Residential ★
- Homeowners/Renters
- Developers/Builders

Commercial ★
- Highway Corridor
- Workplace
- Multifamily
- Fleet
- Public Charging

RATES

Off-Peak Incentives ★
- Electric Transit Service Rate
- Business EV Charging Service Rate

OTHER

Customer Education & Outreach ★

Clean Charge Network
- Highway Corridor
- Underserved

★ *Indicates a new TE program component for Evergy*

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Public

Terminology

Abbreviations

AC	alternating current
BEB	battery electric bus
BEV	battery electric vehicles
BEVCS	Business EV Charging Service (rate)
CCN	Clean Charge Network
DC	direct current
DCFC	DC fast charging
EPRI	Electric Power Research Institute
ETS	Electric Transit Service (rate)
EV	electric vehicle
EVSE	electric vehicle supply equipment
EVSP	electric vehicle service providers
ICE	internal combustion engine
KCATA	Kansas City Area Transportation Authority
KCC	Kansas Corporation Commission
kW	kilowatt
kWh	kilowatt-hour
LGA	Large General Service-Space Heating (rate schedule)
LMI	low- and moderate-income
L1	AC Level 1 charging
L2	AC Level 2 charging
PHEV	plug-in hybrid electric vehicle
REC	renewable energy credit
TMTA	Topeka Metro Transit Authority
TCO	total cost of ownership
TE	transportation electrification
TOU	time-of-use (rate)
V	volt

Definitions

Battery density – The functional energy density stored in a battery pack for use in a battery electric vehicle. As battery density increases, EVs can travel longer distances before recharging without requiring larger, heavier batteries to achieve the same distance range. BloombergNEF reports that battery density in EVs tripled between 2010 and 2020 and battery prices have declined as density increased.[1]

Battery electric vehicle (BEV) – A type of vehicle that is only powered through a battery pack. It must be charged by electric vehicle supply equipment.

CCS Combo – The trade name of the DCFC connector used by most U.S. and German automakers. The connector supports L2 and DCFC charging by incorporating the SAE Standard J1772 connector with two additional DC contacts for high-power DC charging.

CHAdeMO – The trade name of a DCFC connector originally developed and used by five major Japanese automakers.

Charge port – Commonly refers to the EV connector component of the EV charging equipment. EV charging stations may provide one or more EV connectors.

Charging station – Commonly used to refer to a permanently mounted EVSE device as well as a location with multiple chargers (e.g., gas station).

Clean Charge Network (CCN) – The Evergy owned and operated electric vehicle charging network that includes more than 900 public charging stations. There are currently 29 CCN stations in the Kansas Central jurisdiction, 267 in Kansas Metro, 393 in Missouri Metro, and 244 in the Missouri West jurisdiction.[2]

Demand charges – Charges within an electric rate structure, based on the customer's peak capacity usage, traditionally used to recover the nonfuel costs of generation and transmission. The charges often scale proportionately with the highest power capacity (kW) drawn by a user during any given 15-minute period over the course of a billing cycle and can depend on the time of day that the demand occurs (peak or off-peak). Demand charges are commonly charged to commercial and industrial customers to incentivize these customers to level out their load and avoid steep increases in usage that could overload the distribution system.[3]

DC 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 EV charging station with three phase 480V (AC) input. DCFC is typically used for high-speed public charging applications.

Electric vehicles (EV) – The collective term used for battery electric vehicles and plug-in hybrid electric vehicles.

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[1] Bloomberg New Energy Finance (BloombergNEF), "Electric Vehicle Outlook 2020," 2020. Available at: https://about.newenergyfinance.com/electric-vehicle-outlook/.
[2] Clean Charge Network (CCN) station totals as of February 2021.
[3] National Association of Regulatory Utility Commissioners (NARUC), "Electric Vehicles (EVs): Key Trends, Issues, and Considerations for State Regulators," October 2019, p. 26. Available at: https://pubs.naruc.org/pub/32857459-0005-B8C5-95C6-1920829CABFE.

Electric vehicle service providers (EVSP) – Companies that produce and operate EV charging networks.

Electric vehicle supply equipment (EVSE) – An industry term for equipment that communicates with and supplies electric power to the electric vehicle. EVSE is often referred to as the 'charger.' The EVSE may be a permanently mounted device or a plug-connected cord-set provided by the EV manufacturer.

Level 1 AC charging (L1) – A level of EV charging that supplies charging power (1.4-1.9 kW) at 120V AC through a SAE Standard J1772 connector. L1 charging is commonly accomplished with a manufacturer provided cord-set plugged into a standard wall outlet. L1 charging is often used in residential applications and occasionally workplace applications.

Level 2 AC charging (L2) – A level of EV charging that supplies charging power (3.8-19.2 kW) at 208V or 240V AC, typically 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. L2 charging is often used for residential, workplace, and public charging applications.

Low- and moderate-income (LMI) – Households experiencing individual or combined household earnings at or below the eligibility threshold for the Low Income Energy Assistance Program (LIEAP) in Kansas.

Make-ready infrastructure – Customer-side facilities between the utility meter and EVSE required to install new EV charging equipment.

Plug-in hybrid electric vehicle (PHEV) – A type of vehicle that is powered through an electric motor and internal combustion engine. The electric battery is recharged through external EV charging equipment, or EVSE.

Time-of-use rate (TOU) – Type of rate used by utility companies to bill customers based on when they use electricity. The cost of energy per kilowatt hour (kWh) varies based on the period when electricity is used.

Total cost of ownership (TCO) – The capital and operating costs of an asset over the asset's lifespan. EVs typically are more expensive than an ICE vehicle to purchase upfront, but offer lower fuel, service, and maintenance costs over the lifespan of the vehicle, which offers a potentially lower TCO than an ICE.

Transportation electrification (TE) – The use of electricity from external sources of electrical power, such as the electrical grid, for all or part of vehicles, vessels, trains, boats, or other equipment that are mobile sources of air pollution and greenhouse gases and the related programs and charging and propulsion infrastructure investments to enable and encourage this use of electricity.[4]

[4] California Public Utilities Commission, "Public Utilities Code §237.5," January 1, 2016. Available at: https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PUC&sectionNum=237.5.

1. Introduction and Portfolio Summary

Evergy (also referred to as the "Company") is on the cusp of a transformational period of change to create a stronger and more capable grid for the future and to deliver greater value and benefits for all customers and stakeholders. Through the Company's Sustainability Transformation Plan, Evergy intends to make investments in critical utility infrastructure and unlock significant operational efficiencies that keep customer electricity rates competitive. Over the next five years, Evergy expects to upgrade transmission and distribution infrastructure to improve reliability, lower operating costs, provide customers further access to renewable energy, and enhance the customer experience. These investments will further ensure that the grid is ready to power the expected growth of electric vehicles (EVs) in Kansas.

Transportation electrification (TE) refers to the transition from automotive vehicles primarily powered by internal combustion engines (ICE) to vehicles powered partially or fully by electricity. Like many utilities across the country, TE presents an opportunity for Evergy to serve its customers, better manage the grid, and maximize the benefits of electrification for all stakeholders. While early adopters have contributed significantly to the EV technology transition, mass market EV adoption requires intentional investment by utilities to ensure underserved communities are able to access EV benefits.

Evergy's cost effectiveness evaluation finds that EV adoption results in a net benefit for all Evergy customers, not just EV drivers. Specifically, the Company estimates a net present value (NPV) of approximately $~~46~~72 million in benefits to Kansas Metro customers and $47~~26~~ million in benefits to Kansas Central over the next 10 years (2021-2031), assuming a medium EV adoption scenario and a low incremental vehicle cost.

This report outlines Evergy's request for TE programs and rates to support EV adoption, enable off-peak charging, educate customers and other key stakeholders, and inform Evergy's future efforts to maximize the benefits of TE for all customers. Evergy's proposed portfolio includes (1) rebates to encourage the installation of Level 2 (L2) charging in existing homes, (2) rebates to developers to install L2 charging in the construction of new homes, (3) rebates to incent installation of commercial EV charging infrastructure by third parties, (4) rates that encourage off-peak fleet and commercial EV charging, (5) customer education and program administration for the proposed programs and rates and (6) additional charging stations to build on the success of Evergy's Clean Charge Network (CCN).

A summary of each proposed program, rate, and requested regulatory treatment is included in Section 4 with additional details in Appendix A. Proposed tariffs for these programs and rates are included in Appendix B. Cost effectiveness evaluations demonstrating benefits for all customers are described in Section 3.4 and Appendix C.

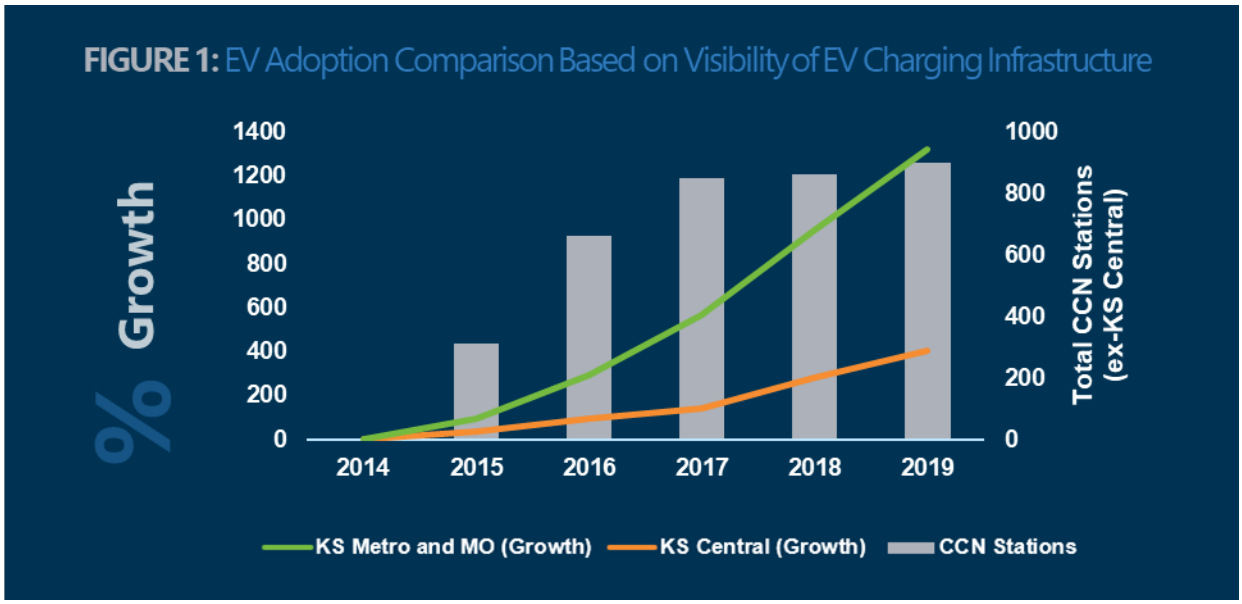
1.1 Evergy's Role and Experience with Transportation Electrification

Evergy's proposed TE portfolio builds upon the success of the Company's current TE programs and customer offerings. Evergy has a history of accelerating EV adoption in its service territory. Evergy has accomplished this in many ways, which include partnering with regional transit agencies to support electrification, deploying time-of-use (TOU) rates that favor both customers and the grid, and developing robust and award-winning website and marketing materials for its CCN. Evergy's biggest success with respect to TE to date has been the CCN, which highlights Evergy's commitment to beneficial TE. With the launch of approximately 1,000 EV charging stations in 2015, Evergy made a name for itself as a leader in the EV charging

space.[5] The Company's proposed portfolio will build on the successes of the CCN by further supporting EV market growth and Evergy customer needs, which will continue to expand as EVs become viable for new vehicle categories such as medium- and heavy-duty vehicles.

Evergy's proposed programs and rates are informed by the Company's involvement serving customers who have taken bold steps as early adopters of EVs. Evergy has learned from these early use cases and has applied these lessons and additional industry knowledge to the proposed portfolio design. For example, it is important that Evergy continue to educate customers on the benefits of managed charging. The proposed rebates and rates pave the way to customer-managed charging, which is an important step towards a future that includes utility-managed EV charging.

Evergy's extensive experience with the CCN corroborates industry studies that link local EV adoption to the presence of a robust public charging network.[6] In the past six years, Evergy has installed more than 900 stations in its Missouri and Kansas Metro jurisdictions as part of its CCN build-out.[7] The Kansas Central jurisdiction has very few charging stations, making it a helpful baseline for comparison of EV growth. As shown in Figure 1, Evergy's Kansas Metro and Missouri jurisdictions realized a threefold growth rate in passenger vehicle EV adoption compared to the Kansas Central jurisdiction.[8]



Evergy is uniquely positioned to support its customers, remove barriers to EV adoption, and directly invest in the deployment of TE solutions. The Electric Power Research Institute

[5] CCN, "Kansas City Leads Country in EV Growth." Available at: https://cleanchargenetwork.com/kansas-city-leads-country-in-electric-vehicle-growth-with-kcpl-clean-charge-network/.

[6] National Renewable Energy Laboratory (NREL) analysis concluded that DCFC will be needed every 3 miles in urban areas and every 70 miles along highway corridors to sufficiently support EV adoption.
U.S. Department of Energy (DOE), "National Plug-In EV Infrastructure Analysis," September 2017. Available at: https://www.energy.gov/sites/prod/files/2017/09/f36/NationalPlugInElectricVehicleInfrastructureAnalysis_Sept2017.pdf.

[7] The CCN was developed and launched prior to the merger of Kansas City Power and Light (KCP&L) and Westar, and therefore the CCN is largely represented in legacy KCP&L jurisdictions (Missouri West, Missouri Metro and Kansas Metro). As of February 2021, these three jurisdictions have 904 stations within the CCN, whereas Kansas Central (legacy Westar) has fewer than 30 charging stations.

[8] Evergy Kansas Metro and Missouri jurisdictions realized a 1300% rate of growth since 2014 compared to Kansas Central 400% rate of growth.

(EPRI) projects that, under a medium adoption scenario, the total number of EVs in Evergy's Kansas service territory will grow to 26,438 by 2025 and 77,369 by 2030.[9] Given these projections and Evergy's overall responsibility for grid management, it is critical for Evergy to be proactively engaged to support the next wave of EV customers, understand and plan for possible future grid-level challenges, and maximize benefits for all customers.

This proposed portfolio represents the next step in this long-term engagement with Evergy's customers and is designed to further many of these goals. For example, the proposed rate tariffs are structured to address emerging load profiles for customers such as public transit fleets, commercial vehicles, and workplaces. In so doing, Evergy is better able to align costs with cost causation and encourage "grid friendly" charging practices.

1.2 The Benefits of Transportation Electrification

TE presents a wide range of benefits, including lower costs, greater grid flexibility, reduced emissions, and a variety of local economic benefits. At the same time, recent announcements by major automakers like General Motors clearly signal a serious commitment toward electrified transportation.[10] Rather than being reactive, Evergy's proposed TE portfolio aligns with the Company's grid modernization plans and promotes grid-friendly integration of EVs through incentives and customer education. Looking ahead, this portfolio will provide valuable insights that inform Evergy's future TE initiatives, planning approaches, and other grid management activities.

1.2.1 Lower Total Energy Costs

The growing cost advantages of electrification produce both direct benefits for EV owners/operators and indirect benefits for other Evergy customers. Direct benefits include the annual fuel and maintenance cost savings of an EV within Evergy's territory. While there is currently an upfront cost premium of several thousand dollars to purchase a passenger EV compared to an ICE vehicle (depending on the vehicle and without applying purchase incentives), the costs to own and operate an EV are lower due to reduced maintenance needs and lower fuel costs.[11] For example, in Kansas, electricity is about half the cost of gasoline on a gallon equivalent basis.[12] The corresponding lifetime fuel cost savings of an EV compared to an ICE range from $7,000 to $12,800.[13]

Beyond the direct benefits realized by EV owners, TE has the potential to reduce long-term costs for all customers by spreading the utility's fixed costs across a wider base of sales. Cost effectiveness evaluations are included in this filing and estimate the net cost or benefit of passenger EV adoption from three perspectives: the Evergy customer, participant (i.e., EV driver), and societal. The results of these evaluations (detailed in Section 3.4) show **net benefits from all perspectives** including a customer benefit estimated at approximately $~~1,070~~1,680 per EV in the Kansas Metro jurisdiction and $~~535~~970 per EV in Kansas Central.

[9] Electric Power Research Institute (EPRI) EV projections use the methodology outlined in "Plug-in EV Market Projections: Scenarios and Impacts," Report 3002011613 (December 2017). EPRI calibrates projections based on county-level EV registration data.
[10] New York Times, "General Motors Will Sell Only Zero-Emission Vehicles by 2035," January 28, 2021. Available at: https://www.nytimes.com/2021/01/28/business/gm-zero-emission-vehicles.html.
[11] Argonne National Laboratory (ANL), "Alternative Fuel Life-Cycle Environmental and Economic Transportation (AFLEET) Tool 2019," accessed January 25, 2020. Available at: https://greet.es.anl.gov/afleet.
[12] DOE, "eGallon," accessed December 29, 2020. Available at: https://www.energy.gov/maps/egallon.
[13] ANL, "AFLEET Tool 2019," accessed January 25, 2020. Available at: https://greet.es.anl.gov/afleet.

1.2.2 Increased Grid Flexibility

Managing and maintaining the grid to serve customers safely, reliably, and affordably is a core responsibility for Evergy. The regional generation mix is becoming increasingly reliant on intermittent generation from renewable sources such as wind and solar.[14] As fossil fuels continue to decrease in the regional generation mix, Evergy can more effectively utilize wind resources at night by shifting EV charging load off-peak to align with periods of low-cost wind generation.

Utilities should enable customers to manage their charging and incentivize the shift of charging to off-peak periods when the grid is underutilized, which increases system efficiency, increases utilization of off-peak capacity, and helps to mitigate the impact of EV-related demand. An EPRI and Evergy analysis on the impact of managed charging with residential TOU rates shows that the charging load consumed during the system peak hour is reduced to less than 40% of the load resulting from unmanaged charging.[15] Evergy, in its last rate case, introduced a TOU pilot rate as an option for residential customers.[16] Incentives like the TOU rate can help EV drivers shift their home charging to off-peak times, which can enable better grid management.

1.2.3 Reduced Emissions

ICE vehicles emit varying amounts of particulate matter (PM) and ozone-forming nitrogen oxides (NOx), which are known to cause or exacerbate respiratory and cardiovascular diseases. Since plug-in hybrid electric vehicles (PHEVs) have fewer tailpipe emissions than ICEs and battery electric vehicles (BEVs) have zero tailpipe emissions, EV adoption can reduce the negative health effects and environmental degradation caused by emissions from the transportation sector. Notably, these effects can be amplified in low-income and disadvantaged communities, which are often situated along major traffic corridors and thus exposed to greater amounts of transportation related pollution.[17]

In addition to the above benefits, the lifecycle carbon emissions of EVs are less than those from comparable ICE vehicles.[18] FuelEconomy.gov estimates that a 2020 Chevy Bolt operating in Kansas produces about 60% less carbon dioxide than the average new gasoline vehicle.[19] With Evergy's commitment to reduced carbon emissions and expanded generation from renewable sources such as wind and solar, charging on Evergy's grid has the potential to be even less carbon intensive.[20]

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[14] Evergy, "Our Energy Mix." Available at: https://www.evergy.com/smart-energy/renewable-resources/our-energy-mix.

[15] EPRI, "KCP&L CCN: Phase 2 Analysis and Valuation of PEV Adoption." 2018. 3002012248, p. VIII.

[16] See KCC Case No. 18-WSEE-328-RTS (Westar/EKC) and Case No. 18-KCPE-480-RTS (KCP&L/EKM).

[17] Center for Climate and Energy Solutions (C2ES), "Electrified Transportation for All: How Electrification Can Benefit Low-Income Communities," November 2017. Available at: https://www.c2es.org/site/assets/uploads/2017/11/electrified-transportation-for-all-11-17-1.pdf.

[18] ANL, "Cradle-to-Grave Lifecycle Analysis of U.S. Light-Duty Vehicle-Fuel Pathways: A Greenhouse Gas Emissions and Economic Assessment of Current (2015) and Future (2025-2030) Technologies," June 1, 2016. Available at: https://afdc.energy.gov/files/u/publication/cradle_to_grave_report.pdf.

[19] FuelEconomy.gov, "Greenhouse Gas Emissions from Electric and Plug-in Hybrid Vehicles," accessed January 25, 2021. Available at: https://www.fueleconomy.gov/feg/Find.do?action=bt2.

[20] Evergy, "Evergy Announces Plan to Reduce Carbon Emissions 80 percent, Adds 660 megawatts of Wind Energy to its Portfolio," January 30, 2020. Available at: https://www.evergy.com/about-evergy/newsroom/2020/january/evergy-announces-plan-to-reduce-carbon-emissions.

1.2.4 Economic Benefits

The deployment of EVs across Evergy's territory is a powerful tool for spurring direct economic benefits for the region. The following are several examples of these benefits:

- Nearly all cash benefits of investing in EV charging infrastructure stay within the state, while most investment related to ICE vehicle usage leaves the state.[21]
- Direct fuel savings to EV owners are realized locally, as are the economic benefits of generating and delivering electricity via the local distribution grid for EVs.
- Local infrastructure deployment of EV charging stations will generate employment opportunities for local installers, contractors, and electricians.
- As the second largest auto manufacturing hub in the country, growing demand for EVs will drive benefits to the greater Kansas City region.[22] For example, Ford recently announced it is investing $100 million in its Kansas City Assembly Plant and adding 150 full-time jobs to manufacture the electric E-Transit van.[23]
- The ability to accommodate interstate EV travel will increase economic activity in Kansas. Retail, food service, and other local businesses may attract new business from EV drivers while they take advantage of direct current fast charging (DCFC) stations along highway corridors and other locations.[24]

1.3 Evergy's Proposed Transportation Electrification Portfolio Summary

Evergy's proposed TE portfolio will provide benefits that include lower customer costs over time, reduced emissions, economic benefits, support of customer goals, increased grid flexibility, and a focus on equitable outcomes as described in Section 3.3. In this filing, Evergy submits for approval the following portfolio elements and requests:

- **Residential customer and developer rebates** to support more efficient home EV charging and to prepare homes for an EV future. Evergy requests that the Kansas Corporation Commission (KCC or "the Commission") approve a five-year budget to fund these rebates. See Sections 4.1 and 4.2 for more details.
- **Commercial rebates** to support investment in charging infrastructure by third parties for a range of EV use cases and locations. Evergy requests that the Commission approve a five-year budget to fund these rebates. See Section 4.3 for more details.
- **Commercial TOU EV rates** that serve the load profiles of electric transit fleets and commercial fleets and charging sites, offer more predictable and lower fuel costs for EV customers, and align rates with the costs of delivering power. The proposed rates will remain in effect unless changed in future rate cases. See Sections 4.4 and 4.5 for more details.
- **Customer education and program administration,** which includes efforts to encourage the adoption of EVs and to support Evergy customers in making informed decisions as they navigate the EV transition, as well as manage the rebate programs and rate offerings. See Section 4.6 for more details.

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[21] King, Chris, "The Untold Story of the Economic Benefits of EVs," February 14, 2020. Available at: https://www.linkedin.com/pulse/untold-story-economic-benefits-electric-vehicles-chris-king/?articleId=6579408416211636225.
[22] Kansas City Area Development Council, "Automotive Manufacturing." Available at: https://thinkkc.com/business/industries/automotive-manufacturing.
[23] Ford Motor Company, "Ford Taps Kansas City to Assemble All-Electric Ford E-Transit; Build Out $3.2B North American EV Manufacturing Footprint," November 10, 2020. Available at: https://media.ford.com/content/fordmedia/fna/us/en/news/2020/11/09/ford-kansas-city-all-electric-ford-e-transit.html.
[24] Atlas Public Policy, "Public EV Charging Business Models for Retail Site Hosts," April 2020. Available at: https://atlaspolicy.com/wp-content/uploads/2020/04/Public-EV-Charging-Business-Models-for-Retail-Site-Hosts.pdf.

- Authorization to use a **deferral accounting mechanism** to track program costs (incentive rebates and other program costs such as customer education and program administration) for recovery of prudently incurred costs in future rate cases through expense amortization over a period of five years. See Section 4.7 for more details.
- Request that the Commission find that it is prudent from a decisional perspective for Evergy to move forward with its **limited and targeted CCN expansion plans for Kansas** announced in this filing. See Sections 4.7 and 4.8 for more details.

Table 1 provides a five-year proposed budget outlined by jurisdiction:

Table 1: Proposed Five-Year Portfolio Budget

PROGRAM COMPONENT	KS METRO	KS CENTRAL	KS TOTAL
Residential Customer EV Outlet Rebate	$.85M	$.70M	$1.6M
Residential Developer EV Outlet Rebate	$.05M	$.05M	$.1M
Commercial EV Charger Rebate	$8.9M	$6.5M	$15.4M
Customer Education and Program Administration	$1.5M	$1.1M	$2.6M
$ TOTAL	$11.3M	$8.4M	$19.7M

Summaries of the new rebate programs and rates are in Appendix A. Proposed tariffs for the rates and programs are included in Appendix B.

2. Transportation Electrification Growth Trends

In response to accelerating EV adoption and overall EV market growth, utilities and regulatory commissions across the country are demonstrating that utilities have a role and responsibility to invest in TE efforts that benefit all customers, the electricity system, and the public. According to the Edison Electric Institute, Evergy is among 48 utilities across 29 states and the District of Columbia that have received regulatory approval to invest more than $2.6 billion in TE programs as of June 2020.[25] These investments are intended to support the deployment of approximately 4,400 DCFC stations and 144,000 L2 chargers, among other TE efforts.[26]

When Evergy launched the CCN in 2015, the Company was at the forefront of domestic utilities that recognized the need and benefits of utility support for transportation electrification. Since then, many other utilities have pursued sizable transportation electrification programs. For example, the Colorado Public Utilities Commission recently approved Xcel Energy's $110 million transportation electrification plan, which will install up to 20,000 charging stations, provide EV charging infrastructure rebates, add EV rates, and offer customer programs to manage new charging load.[27] In New Jersey, Public Service Electric & Gas Company was approved to spend $166 million over six years to support EV charging infrastructure development across residential, commercial, and highway corridor locations.[28]

As illustrated above, recently approved programs and portfolios vary, but typically include one or more of the following elements: customer incentives (e.g., rebates) for charging infrastructure; utility investment in charging infrastructure; rate design; and customer education and outreach. Ultimately, whether packaged together or pursued individually, these activities seek to reduce barriers for customers, support increased TE, and provide utilities with valuable insights to inform future activities. While Evergy's filing is significantly smaller than these examples and somewhat conservative compared to a growing number of its peers, Evergy believes the size and scope of its filing is appropriate for the timeframe of this proposal given anticipated EV and charging infrastructure demand.

2.1 National EV Adoption

Cumulative EV sales nationwide surpassed 1.7 million as of December 2020, approximately one decade after models like the Nissan LEAF and Chevrolet Volt first entered the market.[29] Going forward, increased EV adoption will be driven by multiple factors, including expanding affordable vehicle model offerings, supportive policies and initiatives, growing consumer confidence resulting in-part from increased access to charging infrastructure, and increasing mainstream awareness of EV benefits.

While more than 50 light-duty EV models are already available for sale in the United States, recent announcements demonstrate automakers' increasing commitment to

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[25] Edison Electric Institute, "Electric Transportation State Biannual Regulatory Update: June 2020." https://www.eei.org/issuesandpolicy/electrictransportation/Documents/FINAL_ET%20Biannual%20State%20Regulatory%20Update_June%202020.pdf

[26] Atlas Public Policy, EV Hub, "Utility Filings Dashboard," accessed January 4, 2021. Available at: https://www.atlasevhub.com/materials/electric-utility-filings/.

[27] Xcel Energy, "2021-2023 Transportation Electrification Plan." Available at: https://www.xcelenergy.com/company/rates_and_regulations/filings/transportation_electrification_plan.

[28] Public Service Electric & Gas Company (PSE&G), "PSE&G Gains Approval to Jump-Start EV Charging in New Jersey," January 27, 2021. Available at: https://nj.pseg.com/newsroom/newsrelease208.

[29] ANL, "Light Duty Electric Drive Vehicles Monthly Sales Updates," December 2020. Available at: https://www.anl.gov/es/light-duty-electric-drive-vehicles-monthly-sales-updates.

electrification.[30,31,32,33,34] In addition, the Alliance for Automotive Innovation, a group representing auto makers producing 99% of the cars and trucks sold in the United States, announced that its members will invest $250 billion in vehicle electrification by 2023.[35] This lends further support for the expectation that by 2030, EVs on the road are projected to top 20 million (i.e., 20% of new U.S. car sales).[36]

In another sign of the rapid shift towards TE, states such as California and Massachusetts have taken steps to ban the sale of new ICE vehicles by 2035.[37] These actions build on existing state policy (i.e., zero emission vehicle standards) that require a certain percentage of vehicles offered for sale in a state to comply with specified emissions requirements. Adding to state-level policies and initiatives, President Biden's administration has recently signaled robust federal government support for EV market growth.[38]

As EVs become more attractive to mainstream vehicle owners through increased awareness of benefits and familiarity with the technology, some fleets and other users will look to electric options because of local, state, and federal policies that promote TE as a means of reducing greenhouse gas emissions. Beyond the light-duty market, there are an increasing number of electric options to replace transit buses, school buses, delivery vans, and other medium- and heavy-duty vehicles. Manufacturers such as Blue Bird, Ford, Lion, and Thomas Built produce electric school buses, while BYD, New Flyer, Proterra, Gillig, and other manufacturers offer transit bus options.[39] Notably, environmental benefits of TE and particularly medium- and heavy-duty electrification become even more significant as the electricity generation sector replaces fossil fuels with renewable energy sources such as wind and solar.

Finally, the growth of electrification can be attributed in part to increasing battery density and declining battery costs. The average battery density has increased at rates of 4-5% per year, which has also allowed for efficiency improvements.[40] For example, Model Year 2020 light-duty vehicles have a U.S. Environmental Protection Agency estimated range that exceeds

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[30] EV Adoption, "EV Models Currently Available in the US," accessed December 6, 2020. Available at: https://evadoption.com/ev-models/.

[31] By 2025 Volvo plans to limit its offerings to only hybrids and EVs and by 2030 Volkswagen intends to offer an EV version of all 300 of its models. Ford recently announced that it will invest $29 billion in autonomous vehicles and EVs through 2025, a dramatic ramp-up of its spending in those areas.

[32] Volvo Car Corporation, "The Future is Electric," 2020. Available at: https://group.volvocars.com/company/innovation/electrification.

[33] Reuters, "Volkswagen Accelerates Push into Electric Cars with $40 Billion Spending Plan," November 17, 2017. Available at: https://www.reuters.com/article/us-volkswagen-investment-electric/volkswagen-accelerates-push-into-electric-cars-with-40-billion-spending-plan-idUSKBN1DH1M8.

[34] Utility Dive, "Ford Bets $29B on Leading the 'Electric Vehicle Revolution," February 9, 2021. Available at: https://www.utilitydive.com/news/ford-bets-29b-on-leading-the-electric-vehicle-revolution/594782/.

[35] Utility Dive, "Carmakers in US to spend $250B on electrification by 2023, push for national standard, group says," February 10, 2021. Available at: https://www.utilitydive.com/news/carmakers-in-us-to-spend-250b-on-electrification-by-2023-push-for-nationa/594833/.

[36] Edison Electric Institute and Institute for Electric Innovation, "EV Sales Forecast and the Charging Infrastructure Required Through 2030," November 18, 2020. Available at: https://www.edisonfoundation.net/-/media/Files/IEI/publications/IEI_EEI-EV-Forecast-Report_Nov2018.ashx.

[37] E&E News, "Massachusetts Looks to Ban Gas Car Sales by 2035," January 8, 2021. Available at: https://www.eenews.net/climatewire/stories/1063722047/.

[38] The White House, "Executive Order on Tackling the Climate Crisis at Home and Abroad," January 27, 2021. Available at: https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/.

[39] DOE, Alternative Fuels Data Center (AFDC), "Alternative Fuel and Advanced Vehicles Search," accessed January 24, 2021. Available at https://afdc.energy.gov/vehicles/search/.

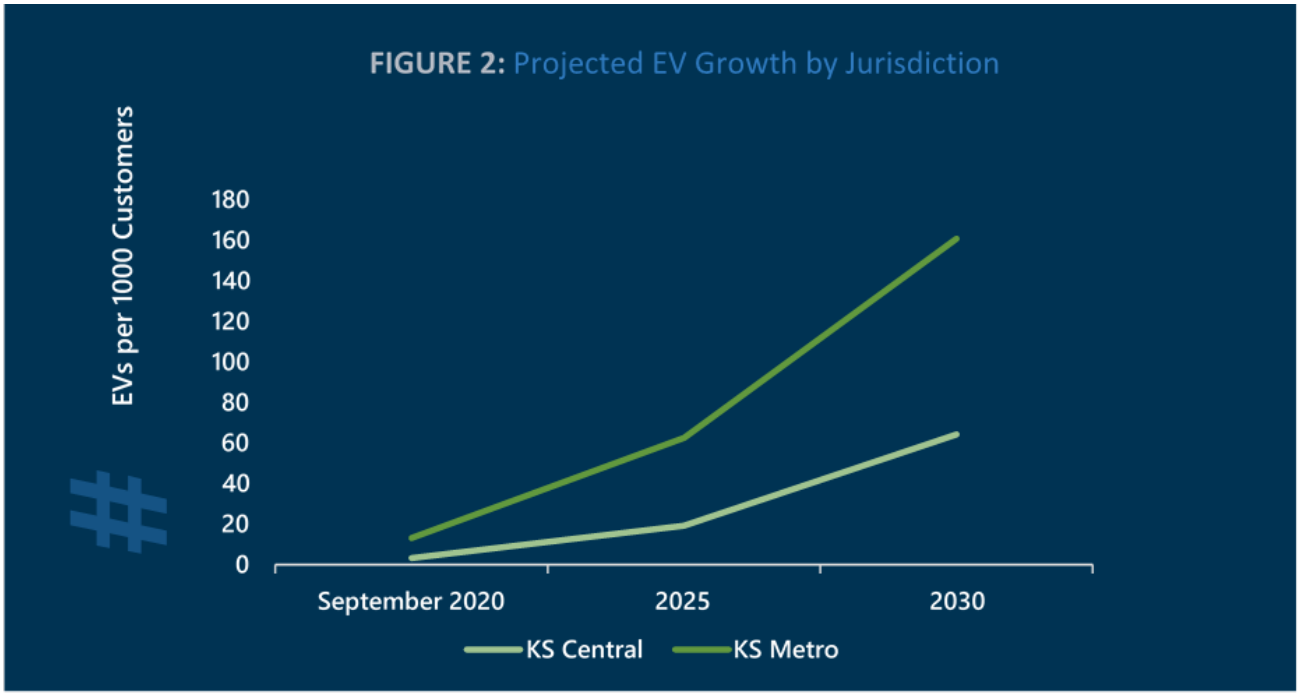
[40] BloombergNEF, "Electric Vehicle Outlook 2020," 2020. Available at: https://about.newenergyfinance.com/electric-vehicle-outlook/.

250 miles.[41] Meanwhile, battery costs fell 89% between 2010 and 2020, with the volume-weighted average reaching $126 per kilowatt-hour (kWh). By 2023, its estimated that the average battery cost will decrease an additional 20%.[42] Appendix D provides a more detailed overview of EV and charging technology.

2.2 Evergy Territory EV Adoption

In the context of national trends, Evergy customers find themselves with increasing options and considerations related to TE. Equipped with the lessons learned from its experience installing and operating the CCN, Evergy is well positioned to support customers along this journey.[43]

The number of light-duty EVs operating in the Kansas Central service territory was estimated to be 1,997 as of September 2020, with approximately 55% being BEVs and 45% PHEVs. EPRI projects that, under a medium adoption scenario, the total number will grow to 11,967 by 2025 and 40,123 by 2030.[44] Similarly, in Kansas Metro there were approximately 3,030 EVs on the road as of September 2020, with the same split between BEVs and PHEVs. EPRI's projections under a medium adoption scenario, suggest there will be 14,471 EVs by 2025 and 37,246 by 2030. Figure 2 illustrates the projected growth curves for each jurisdiction.



[41] DOE, "Fact of the Week #1167: Median Driving Range of All-Electric Vehicles Tops 250 Miles for Model Year 2020," January 4, 2021. Available at: https://www.energy.gov/eere/vehicles/articles/fotw-1167-january-4-2021-median-driving-range-all-electric-vehicles-tops-250.
[42] BloombergNEF, "EV Outlook 2020," 2020. Available at: https://about.newenergyfinance.com/electric-vehicle-outlook/.
[43] Refer to Appendix E for a detailed narrative of Evergy's CCN Experience.
[44] EPRI EV projections use the methodology outlined in "Plug-in Electric Vehicle Market Projections: Scenarios and Impacts," Report 3002011613 (December 2017). EPRI calibrates projections based on county-level EV registration data.

Evergy has consistently referenced EPRI's EV projections and sales data, specifically focusing on the medium adoption scenario. Evergy has found that, based on "look-back" comparisons between EPRI-provided projections and actual EV adoption statistics, EPRI's methodology is reasonable and projections have a high level of accuracy.

Looking beyond the light-duty market, battery electric buses (BEB) have seen increased attention and adoption in Evergy Kansas Central's service territory among the various transit authorities. Examples of current bus-related activities in Kansas include:

- In 2019, the City of Topeka received a grant award from the Federal Transit Administration's Low- or No-Emission (Low-No) Bus program to purchase three BEBs by 2022.[45,46]
- The City of Lawrence received a similar grant award in 2020 and has committed to purchasing five electric buses.[47,48]
- The City of Wichita was also a Low-No grant recipient and has committed to transitioning more than 50 buses in its fleet to electric by 2030. Currently, the City has 11 Proterra BEBs in service.[49]

[45] Federal Transit Administration (FTA), "Fiscal Year 2019 Low or No-Emission (Low-No) Bus Program Projects," March 17, 2020. Available at: https://www.transit.dot.gov/funding/grants/fiscal-year-2019-low-or-no-emission-low-no-bus-program-projects.
[46] The Topeka Capital Journal, "Topeka Metro gets $1.7M federal grant for electric buses," July 25, 2019. Available at: https://www.cjonline.com/news/20190725/topeka-metro-gets-17m-federal-grant-for-electric-buses.
[47] FTA, "Fiscal Year 2020 Low or No-Emission (Low-No) Bus Program Projects," August 6, 2020. Available at: https://www.transit.dot.gov/funding/grants/fiscal-year-2020-low-or-no-emission-low-no-bus-program-projects.
[48] The University Daily Kansan, "Lawrence City Commission Approves Switch to 98% Renewable Energy," June 10, 2020. Available at: https://www.kansan.com/news/lawrence-city-commission-approves-switch-to-98-renewable-energy/article_7b13f664-ab60-11ea-97b1-97905d876f34.html.
[49] The Wichita Eagle, "Why Wichita Says New Electric Buses Are Better Than Their Diesel Predecessors," October 25, 2020. Available at: https://www.kansas.com/news/business/article246275365.html.

3. Customer Benefits of Transportation Electrification

Evergy is committed to helping customers and stakeholders realize the benefits of TE and achieve their unique goals. Evergy's proposed TE portfolio was designed as a holistic approach to addressing barriers across the marketplace in support of achieving greater levels of EV adoption and benefits for all customers in the Company's service territory. As described below and summarized in Table 2, customers and stakeholders are interested in EV adoption for a variety of reasons.

- **Residential Customers** are interested in lower transportation and energy costs, incentives, and the environmental and health benefits of reduced vehicle noise and emissions.[50]
- **Commercial Customers** are interested in lower vehicle total cost of ownership (TCO), reduced noise and pollution, and support to meet their own sustainability and decarbonization goals.[51,52,53]
- **Municipalities** are interested in TE for greater economic development and workforce opportunities, environmental and health benefits of reduced vehicle noise and pollution, support of access to technology and energy services for underserved communities, and achievement of community sustainability and decarbonization goals.[54,55,56]
- **Regional organizations** are interested in TE to help achieve the region's clean energy and environmental goals, availability of funding to invest in EV adoption, opportunities to develop partnerships with new companies and organizations in a position to bring EV-related jobs to the area.[57]
- **Evergy** is interested in TE as an opportunity to engage more proactively and expansively with its customers to offer additional energy services, growth of flexible and beneficial load to support grid management activities, greater capacity utilization, and the achievement of environmental and clean energy goals.

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[50] NREL, "Plug-in Electric Vehicle Showcases: Consumer Experience and Acceptance," July 2020. Available at: https://afdc.energy.gov/files/u/publication/pev_showcases_consumer_experience_acceptance.pdf.
[51] McKinsey and Company, "What's sparking EV adoption in the truck industry?" September 26, 2017. Available at: https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/whats-sparking-electric-vehicle-adoption-in-the-truck-industry.
[52] Ceres, "The Road to Fleet Electrification," 2020. Available at: https://www.ceres.org/sites/default/files/reports/2020-05/The%20Road%20to%20Fleet%20Electrification.pdf.
[53] Greenbiz, "Building the Business Case for Fleet Electrification," December 12, 2018. Available at: https://www.greenbiz.com/article/curves-road-fleet-electrification-sponsored.
[54] AFDC, "Massachusetts School Fleets Get Answers through Electric Bus Testing," July 17, 2020. Available at: https://afdc.energy.gov/case/3092.
[55] Bloomberg, "American Cities Drive Fleet Electrification Efforts Across United States," July 19, 2019. Available at: https://www.bloomberg.org/blog/american-cities-drive-fleet-electrification-efforts-across-united-states/.
[56] C2ES, "Greening City Fleets," November 28, 2018. Available at: https://www.c2es.org/2018/11/greening-city-fleets/.
[57] Climate Action KC, "Regional Climate Action Plan," January 2021. Available at: http://climateactionplan.cleanwaterkcmetro.org/wp-content/uploads/2021/01/Climate-Action-Plan-single-up_med-res.pdf.

Table 2: Common Customers & Stakeholder Interests in TE

	Clean Energy Targets	Environment & Health	Sustainability Goals	Economic Development	Cost Savings	Beneficial Load Growth
Residential Customers		✓			✓	
Commercial Customers		✓	✓		✓	
Municipalities		✓	✓	✓		
Regional Organizations	✓	✓	✓	✓		
Utility	✓	✓	✓	✓	✓	✓

Given the Company's ability to reach its customer base and across the community as an energy provider, Evergy believes it is well-positioned to ensure local TE investment is impactful and favorable to its customers and other stakeholders. The following sections provide more insight to many of the TE benefits introduced above.

3.1 Economic Benefits

The economic case for TE is strengthening by the year. The growing cost advantages of electrification produce both direct benefits for EV owners/operators and indirect benefits for other Evergy customers.

3.1.1 Total Energy Cost Benefits

Passenger EV owners and operators within Evergy's territory realize TCO savings. While there is currently an upfront cost premium of several thousand dollars to purchase a passenger EV compared to an ICE vehicle (depending on the vehicle and without applying purchase incentives), the costs to own and operate an EV are lower due to reduced maintenance needs and lower fuel costs.[58] For example, in Kansas, electricity is about half the cost of gasoline on a gallon equivalent basis.[59] The corresponding lifetime fuel cost savings of an EV compared to an ICE range from $7,000 to $12,800.[60]

Beyond the direct benefits enjoyed by EV owners, TE has the potential to reduce long-term costs for all customers. The results of Evergy's cost effectiveness evaluations (detailed in Section 3.4) show net benefits for Evergy customers, meaning that EV adoption can put downward pressure on rates as electricity consumption by EVs spreads the fixed costs of the utility across a wider base of sales. Additionally, EVs can be charged during off-peak periods when the grid is underutilized, which increases system efficiency, increases utilization of off-peak capacity, and helps to mitigate the impact of EV-related demand.

[58] ANL "AFLEET Tool 2019," accessed January 25, 2020. Available at: https://greet.es.anl.gov/afleet.
[59] DOE, "eGallon," accessed December 29, 2020. Available at: https://www.energy.gov/maps/egallon.
[60] ANL, "AFLEET Tool 2019," accessed January 25, 2020. Available at: https://greet.es.anl.gov/afleet.

3.1.2 Regional Economic Benefits

The deployment of EVs across Evergy's territory will contribute to direct economic benefits to the region in the form of employment, infrastructure spending, and greater demand for electricity and other goods and services at EV charging sites. As described previously, the direct fuel savings to EV owners are realized locally, as are the economic benefits of generating and delivering electricity for EVs via the local distribution grid.

Incentives, rebates, and other sources of state-provided funding for TE will also spur investment in the state. For example, Volkswagen (VW) Settlement funding is available for vehicle owners to receive vouchers to help purchase a new cleaner vehicle and retire their older and less efficient vehicles.[61] VW Settlement funding for EVs is complementary to Evergy's proposed program to help reduce the upfront cost of EV and charging station purchases not covered by the proposed rebates.

3.2 Sustainability Benefits

The emissions-reducing attributes of EVs make TE attractive to Evergy customers that have set goals related to sustainability (i.e., decarbonization, energy efficiency, clean energy, etc.). In addition to commercial customers, TE is being pursued by municipalities and other government entities that have established strategic energy and environmental goals. For example, the Kansas City Climate Action Playbook sets goals for participating cities.[62] Additionally, the Greater Kansas City Clean Air Action Plan establishes a goal to increase the use of EVs in the region to over 90,000 vehicles by 2028.[63] Beyond these regional initiatives, recent commitments to electrify U.S. federal fleet vehicles, such as the U.S. Postal Service fleet, may also lead to new EV growth in Evergy territory.[64]

As BEBs become increasingly more viable and attractive, cities and their public transit agencies are considering electrification or are already actively electrifying their bus fleets. As noted previously, several cities within Evergy's service territory have received federal grants to fund BEBs. In these cases, Evergy provided various types of support including grant application assistance and infrastructure needs assessments.

Additional examples of Evergy's fleet customers' commitments to electrification are detailed in their Letters of Support in Appendix F.

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[61] U.S. Environmental Protection Agency, "Volkswagen Clean Air Act Civil Settlement." Available at: https://www.epa.gov/enforcement/volkswagen-clean-air-act-civil-settlement.

[62] Climate Action KC, "Regional Climate Action Plan," January 2021. Available at: http://climateactionplan.cleanwaterkcmetro.org/wp-content/uploads/2021/01/Climate-Action-Plan-single-up_med-res.pdf

[63] Mid-America Regional Council Air Quality Program, "Greater Kansas City Clean Air Action Plan 2018 Update," 2018. Available at: https://www.marc.org/Environment/Air-Quality/pdf/CAAP2018Update.aspx.

[64] The White House, "Executive Order on Tackling the Climate Crisis at Home and Abroad," January 27, 2021. Available at: https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/.

Commercial Fleet Commitments

Several commercial fleets operating in Evergy territory have committed to electrify some or all fleet vehicles to support their corporate environmental sustainability goals. Evergy's TE offerings can bolster the business case for a variety of fleet electrification use cases, including:

Last-mile parcel delivery: Amazon has committed to electrify parcel delivery vans as part of sustainability goals to achieve zero-emission operations by 2040.[65]

EV trucks and retail charging: Walmart has committed to electrify 100% of its fleet by 2040, including Class 8 long-haul trucks. Walmart will also serve as a site host for public L2 and DCFC charging at store locations.[66]

Parcel delivery box trucks: UPS has committed to source 40% of ground fuel from low carbon or alternative fuels by 2025 and has ordered 10,000 electric vans from Arrival, and EV manufacturer.[67]

3.3 Equity Considerations

Lack of awareness of EV benefits and options, barriers to affording and accessing EVs, or the impracticality of EVs for the customer's use case have all contributed to low levels of EV adoption.[68] In this filing, a focus on underserved communities will help drive equitable outcomes across the Company's TE portfolio. Transportation costs including vehicle purchases, maintenance, and fuel constitute a larger portion of household expenses for low- and moderate-income (LMI) customers.[69] Therefore, the cost saving attributes of EVs will be even more beneficial for LMI households and communities served by EVs.

LMI customers who have less access to personal car ownership rely heavily on public transit and rideshare or transportation network companies (TNCs), many of which have committed to electrify their fleets.[70] For transit agencies like the Kansas City Area Transportation Authority (KCATA) that offer free bus fare, cutting operational costs by electrifying the fleet will be even more beneficial for LMI and underserved customers.[71]

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[65] Amazon, "Introducing Amazon's First Custom Electric Delivery Vehicle," October 8, 2020. Available at: https://www.aboutamazon.com/news/transportation/introducing-amazons-first-custom-electric-delivery-vehicle.
[66] InsideEVs, "Walmart to Electrify Entire Fleet By 2040," September 24, 2020. Available at: https://insideevs.com/news/445649/walmart-electrify-entire-fleet-by-2040/.
[67] United Parcel Service of America (UPS), "UPS Invests In Arrival, Accelerates Fleet Electrification With Order Of 10,000 Electric Delivery Vehicles," January 29, 2020. Available at: https://www.pressroom.ups.com/pressroom/ContentDetailsViewer.page?ConceptType=PressReleases&id=1580304360144-453.
[68] The Greenlining Institute, "EVs for All." Available at: https://greenlining.org/resources/electric-vehicles-for-all/.
[69] FTA, "Transportation Needs of Disadvantaged Populations: Where, When, and How?" February 2013. Available at: https://www.transit.dot.gov/sites/fta.dot.gov/files/FTA_Report_No._0030.pdf.
[70] Nature Energy, "Emissions Benefits of EVs in Uber and Lyft Ride-Hailing Services," June 29, 2020. Available at: https://doi.org/10.1038/s41560-020-0632-7.
[71] The Kansas City Area Transportation Authority (KCATA), "KCATA Wins Kansas Department of Transportation Innovation and Technology Grant to Improve Public Transit Integration," December 14, 2020. Available at: https://www.kcata.org/news/name_our_mascot_and_ride_free_in_2008/.

To drive equitable outcomes for all customers, Evergy considered the following customer needs in its design of the proposed TE portfolio:

- **Affordability** – Evergy's TE portfolio aims to reduce household and operating expenses for all customers by offering clean and reliable electricity as a transportation fuel.
- **Accessibility** – Evergy's TE portfolio unlocks new opportunities for Evergy customers to access EV mobility options and EV benefits.
- **Suitability** – Evergy's TE portfolio addresses real needs of EV customers and reflects the current and projected state of the market to support EV adoption.
- **Transparency** – Evergy's TE portfolio seeks to increase consumer awareness of EVs and ensure that all customers have accurate and up-to-date information to make decisions regarding EVs.

3.4 Cost Effectiveness of EV Adoption

Evergy's proposed TE portfolio is designed to support customers in electrifying the transportation sector with the goal of realizing the broader benefits of increased EV adoption in Evergy's Kansas service territory. To quantify these benefits, Evergy conducted cost effectiveness evaluations in partnership with ICF, one for each of the two jurisdictions: Kansas Metro and Kansas Central. ICF's methodology strives to estimate whether EV adoption is a net cost or a net benefit.

3.4.1 Cost Effectiveness Evaluation Results

The analyses conclude that **all Evergy customers benefit from increased EV adoption**, whether or not an EV driver. Specifically, ICF estimates a net present value (NPV) of approximately $~~26~~47 million in benefits to Kansas Central customers over the next 10 years (2021-2031), assuming a medium EV adoption scenario and a low incremental vehicle cost. On a per vehicle basis, this benefit translates to approximately $~~535~~970 per EV adopted in the Kansas Central service territory. Applying the same assumptions, results for Kansas Metro customers are $~~46~~72 million NPV, or $~~1,068~~1,680 per EV adopted. The analyses also show that increased EV adoption can yield even greater net societal benefits while also benefiting EV drivers.[72] Table 3 summarizes the cost effectiveness evaluation results by jurisdiction.[73] Refer to Appendix C for the cost effectiveness reports, which detail the assumptions and jurisdictional results.

[72] For the purpose of the cost effectiveness evaluation, a participant is an EV driver in the territory, not specifically those actively participating in one of Evergy's proposed programs.
[73] The results summarized here are based on a medium EV adoption scenario and a low incremental vehicle cost scenario.

Table 3: Cost Effectiveness Evaluation Results

KS CENTRAL	CUSTOMER BENEFIT	PARTICIPANT BENEFIT	SOCIETAL BENEFIT
Ratio	~~1.28~~ 1.50	~~1.32~~ 1.23	1.46
Net	~~$25,863,249~~ $46,936,550	~~$88,757,413~~ $67,684,112	$114,620,662
Benefit/EV	~~$535~~ $971	~~$1,837~~ $1,401	$2,372

KS METRO	CUSTOMER BENEFIT	PARTICIPANT BENEFIT	SOCIETAL BENEFIT
Ratio	~~1.51~~ 1.80	~~1.27~~ 1.16	1.52
Net	~~$46,028,924~~ $72,344,433	~~$77,133,533~~ $50,818,024	$123,162,458
Benefit/EV	~~$1,068~~ $1,679	~~$1,790~~ $1,179	$2,858

3.4.2 Cost Effectiveness Evaluation Methodology

ICF's cost effectiveness evaluation approach incorporates EV population projections and associated load, existing EV charging stations and projected infrastructure needs, technology assumptions (e.g., capital costs), and local market assumptions (e.g., electric rates).[74,75] ICF then applies three tests to allocate the inputs as costs or benefits in order to determine whether increased EV adoption results in net benefits to customers, participants, and society. Table 4 summarizes how the inputs and assumptions are treated in each test.

[74] Sourced from EPRI data provided by Evergy, updated September 2020.
[75] Charging infrastructure needs are modeled using formulas based on NREL's EVI-Pro Lite tool, available at https://afdc.energy.gov/evi-pro-lite.

Table 4: Cost Effectiveness Inputs & Assumptions

Inputs	Customer	Participant	Societal
Incremental Vehicle		Cost	Cost
Vehicle O&M Savings		Benefit	Benefit
Federal Vehicle Tax Credit		Benefit	Benefit
Gasoline Cost		Benefit	Benefit
Charging Infrastructure Costs	Cost	Cost	Cost
Electric Supply Costs (energy & capacity)	Cost		Cost
Retail Utility Bills for EV Charging	Benefit	Cost	

ICF's methodology includes several conservative assumptions. Of specific note is the assumption that public charging infrastructure costs (L2 and DCFC, inclusive of the charging equipment, make-ready, and installation) are borne by Evergy customers. In reality, local businesses and other third parties are likely to install meaningful charging infrastructure within Evergy's territory; indeed, Evergy's proposed TE portfolio includes components designed to incentivize that very outcome. In addition, Evergy's commercial line extension allowance may not always cover the entire upfront cost associated with charging station installation and would then require a customer contribution.

Another conservative facet of the cost effectiveness evaluation is that it does not include the potential benefits of improved utility load factor and avoided distribution costs through improved asset management associated with managed charging and other efforts to shift EV charging activity to off-peak periods. Even modest benefits from improved utility load factor and distribution asset management will likely offset any cost increases. Actively managing charging may also help decrease net societal costs by reducing the increased demand through better utilization of charging infrastructure.

It is important to note that this cost effectiveness evaluation does not include certain non-monetized benefits that are sometimes considered in the societal cost test, such as emission reductions. Further, the analysis does not seek to model the potential impacts of a single program, but rather the costs and benefits that may result from increased EV adoption. It is very difficult to attribute direct program impacts on the EV market as there are numerous complex factors that go into car buying and charging decisions. ICF's methodology is similar to the analyses other utilities have applied to model the impacts of TE, with a focus on the customer benefit.

While the results of the cost effectiveness evaluation support even greater investment in TE than proposed herein, this filing represents a meaningful step toward supporting beneficial TE in Evergy's service territory. As a company, Evergy can positively influence EV adoption through this TE portfolio by offsetting a small portion of the total infrastructure investment required to support EV market growth over the coming years.

4. Proposed Transportation Electrification Portfolio

Evergy seeks to empower customers with electrification solutions that leverage carbon-free resources to improve the environment, lower customer costs, and enhance grid operation. Evergy's goal is to be forward-looking in its approach to TE and to target actions that deliver the greatest benefits to all customers, with a focus on accessibility, affordability, and durability of solutions.

Evergy believes the utility should play a role in enabling the benefits of TE for customers. To do this, Evergy will create customer-centric solutions to overcome the barriers to EV adoption, with a focus on increasing access to electric transportation options for underserved communities. Evergy will leverage its core competencies to facilitate infrastructure solutions that enable customer adoption and optimize grid benefits. Evergy will be able to better understand where EV charging is occurring on the system by identifying new load from customers receiving rebates and enrolling in EV-specific rates, which will enable further load analysis and inform future efforts to promote better grid management.

Table 5 provides a summary of the investment requested for the proposed programs and rates along with customer education and program administration, specified by jurisdiction:

Table 5: Proposed Five-Year Budget

Program Component	KS Metro	KS Central	KS TOTAL
Residential Customer EV Outlet Rebate	$.85M	$.70M	$1.6M
Residential Developer EV Outlet Rebate	$.05M	$.05M	$.1M
Commercial EV Charger Rebate	$8.9M	$6.5M	$15.4M
Customer Education and Program Administration	$1.5M	$1.1M	$2.6M
TOTAL	$11.3M	$8.4M	$19.7M

4.1 Residential Customer EV Outlet Rebate

Evergy proposes the Residential Customer EV Outlet Rebate for residential customers to reduce the cost of home EV charging. Evergy is targeting the residential sector because light-duty private EV ownership constitutes the majority of existing and projected EV adoption in the Evergy territory over the next five years. With approximately 80% of charging activity typically occurring at home, the residential sector is a strategic way to serve this segment of EV drivers.[76] This rebate aligns with Evergy's equity commitment by reducing the costs associated with installing an EV charger at home and supporting more efficient L2 charging that yields energy savings and reduces household transportation costs.

The Residential Customer EV Outlet Rebate incentivizes the installation of a 240V outlet at residential locations to enable L2 EV charging. Customers are eligible for one rebate per residence to cover 50% of the installation cost, up to $500 per outlet, to install a dedicated 240V circuit (40A or greater, including a NEMA 14-50 outlet). Customers apply for a rebate within six months of the installation of qualified equipment. Customers will complete an online application form and upload the necessary documentation, which will include dated installation receipts and proof of EV registration at the same address. At the time of application, customers will be encouraged to opt into the CCN for their public charging needs.

The Residential Customer EV Outlet Rebate will reduce the costs associated with L2 charger installation at home and provide customers with the ability to charge EVs in less time and with 7-15% less energy. Today, many EV drivers charge at home using the Level 1 (L1) cord-set provided with the EV.[77] The 240V outlet will enable drivers to use either their preferred charger or their vehicle's onboard charge management functionality.

The Residential Customer EV Outlet Rebate complements the EV driver's ability to utilize Evergy's existing TOU pilot rate, creating a foundation for future active charge management programs.[78]

Refer to Appendix A for a program summary, including the estimated rebate quantities. The proposed Residential Customer EV Outlet Rebate program tariff sheets are provided in Appendix B.

Common EV Charging Use Cases

Residential charging – EV charging equipment that is located at a single-family home intended to provide private charging service to the resident.

Public charging – EV charging equipment that is available to the general public or the customers of an establishment that is open to the general public, including but not limited to government facilities, libraries, parks, retail stores, and restaurants.

Fleet charging – Installed at a non-residential location and intended to provide charging service to fleet vehicles of the business that occupies the premise, but not to employees or the general public.

Highway corridor charging – Installed along interstate highways, state highways or other thoroughfares that connect and provide long-distance travel between population centers.

Multi-family charging – EV charging equipment that is located at a residential development with multiple leased or owned dwelling units intended to provide charging service to tenants and visitors, but not to the general public.

Workplace charging – EV charging equipment installed at a non-residential location intended to provide vehicle charging service to employees, visitors, or fleet vehicles of the business that occupies the premise, but typically not to the general public.

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[76] DOE, "Charging at Home." Available at: https://www.energy.gov/eere/electricvehicles/charging-home.
[77] *ibid*
[78] See KCC Case No. 18-WSEE-328-RTS (Westar/EKC) and Case No. 18-KCPE-480-RTS (KCP&L/EKM).

4.2 Residential Developer EV Outlet Rebate

Evergy proposes the Residential Developer EV Outlet Rebate to incentivize developers to pre-wire new homes with adequate circuit capacity to accommodate L2 EV charging by future residents. By targeting new homes, Evergy will ensure that homes are pre-wired for L2 EV charging, which will save customers the cost of upgrading later. In the absence of other mechanisms such as building codes that require EV-ready residential construction, the Residential Developer EV Outlet Rebate provides Evergy with an opportunity to partner with developers to future-proof the residential sector and prepare it for expected growth in demand for EVs. Accordingly, customer education and outreach activities associated with the Residential Developer EV Outlet Rebate will target developers and provide information about the benefits of installing infrastructure at the time of construction.

The Residential Developer EV Outlet Rebate incentivizes the installation of a dedicated 240V circuit (40A or greater, including a NEMA 14-50 outlet) to enable L2 EV charging. Developers are eligible for one $250 rebate per new home constructed according to these requirements. Developers will complete an online application form after the residence has been constructed and upload the necessary documentation to Evergy, which will include the address at which the installation occurred. Residential Developer EV Outlet Rebate program participants are limited to one rebate per residence. Third-party vendors or electric vehicle service providers (EVSPs) are not eligible for these rebates.

The Residential Developer EV Outlet Rebate supports Evergy's equity commitment by reducing the costs associated with enabling L2 EV charging at home. L2 charging allows most EVs to charge during off-peak hours and lowers household transportation costs for future homeowners because it is both faster and more efficient than L1 charging. In addition, by tracking EV-ready home addresses, Evergy expects to have the ability to anticipate where EV charging may occur on the system, which can enable further load analysis to support future grid management activities.

Refer to Appendix A for a program summary, including the estimated rebate quantities. The proposed Residential Developer EV Outlet Rebate program tariff sheets are provided in Appendix B.

4.3 Commercial EV Charger Rebate

Third parties are important contributors to the broader ecosystem of EV charging infrastructure as a complement to Evergy's role in owning and operating the CCN. Evergy proposes the Commercial EV Charger Rebate for third-party EV charging station installations at commercial locations across the Evergy service territory. While residential charging comprises most charging events for light-duty EVs today, the growing market requires an ecosystem of strategically located commercial EV charging sites to reduce range anxiety in drivers and to serve a variety of emerging EV use cases.

To serve these use cases, EV charging should be conveniently located at common destinations such as workplaces, fleet parking sites, public destinations such as retail sites, multi-family dwellings, and along highway corridors. The proposed Commercial EV Charger Rebates are aligned with Evergy's equity commitment by offering affordable and accessible EV charging at locations that meet the practical needs of the market. Among the commercial customers eligible for the Commercial EV Charger Rebates are public service fleets such as urban transit bus, school bus, municipal service fleets, paratransit, rural transit, and public assistance vehicles – all of which have broad benefits for underserved communities.

The Commercial EV Charger Rebates will reduce the costs associated with L2 and DCFC EV charging station installations at a variety of locations (highway, public, workplace, fleet, multi-family) by providing a rebate to cover the customer-side infrastructure and EV charger equipment costs. The program design will incentivize smart, network-capable chargers to enable controllable load management regardless of what type of L2 or DCFC charger is installed. These design considerations will also allow Evergy to collect and analyze charger utilization data for various use cases and better understand where EV charging is occurring on the system. Based on Evergy's review of projected EV growth and the associated infrastructure needs, the Company anticipates that a mix of L2 and DCFC, in addition to Evergy's CCN stations, will be needed at commercial locations to meet the requirements and usage patterns of EV drivers.[79] The rebate structure for each site type is summarized in Table 6.

Table 6: Commercial EV Charger Rebates by Site Type

Site Type	L2 Ports	DCFC Units	Maximum Rebate per Site
Highway	2	2	$45,000
Non-Highway Public	6	2	$55,000
Fleet/Workplace	10	2*	$65,000
Multi-Family	10	0	$25,000

**DCFC is eligible for rebates only in cases where the equipment serves fleet operations.*

Evergy will issue a request for information or request for proposals to develop a list of qualified L2 and DCFC chargers meeting the technical specifications (e.g., network-capable, ENERGY STAR certified L2, safety certification, managed charging capable) and will make the qualified equipment list available to applicants. Evergy will periodically accept submittals from other vendors and update the qualified equipment list for those suppliers that meet the qualifications. Eligible customers, including third-party EVSPs, may apply for a Commercial EV Charger Rebate after qualified equipment has been installed. Customers will complete an online application form and upload the necessary documentation, which will include dated EV charger installation receipts and proof of charger operation at the same address, to receive the rebate. Customers must provide Evergy with access to utilization data, install stations in dedicated EV parking spaces, and agree to participate in potential future demand response (DR) events, if deemed necessary, to minimize grid impacts. Evergy will require that customers provide documentation to prove that chargers have been installed within six months to receive the rebate and must provide documentation annually to demonstrate that EV charging station is

[79] Charging infrastructure needs were modeled using formulas based on NREL's EVI-Pro Lite tool.

operational for five years following the installation. Leased charging stations are eligible for the Commercial EV Charger Rebate with proof that the customer has executed an agreement for no less than five years.

The Commercial EV Charger Rebate complements the line extension allowance available for commercial developers, as illustrated in Figure 3.

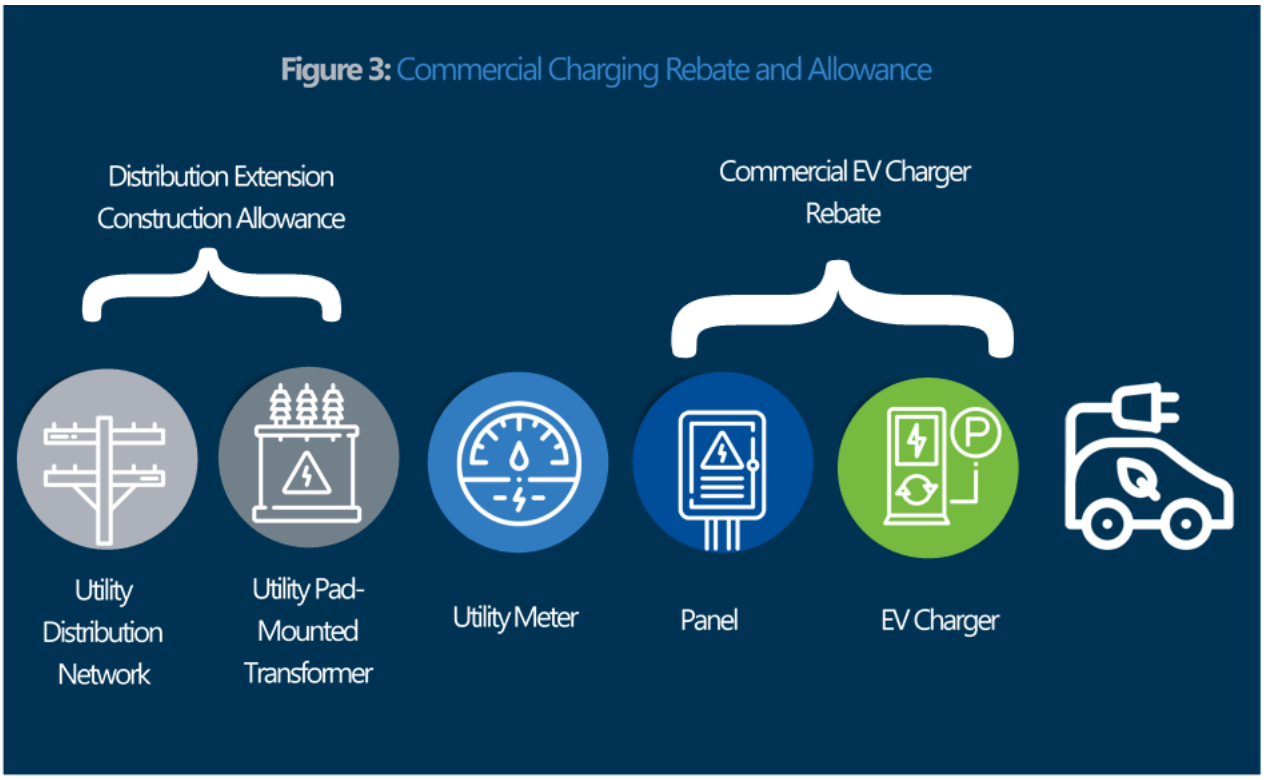

Figure 3: Commercial Charging Rebate and Allowance

A few of the lessons Evergy has learned through its experience with the CCN is the importance of clear and consistent signage, standardized site designs for both L2 and DCFC (i.e., standard requirements for parking lot installations versus wall mounts), and proactive site maintenance plans to ensure that charging stations are safe easy to use. Also, EV charging infrastructure deployment should allow for future expansion when possible. For example, ensuring that capacity upgrades at a location account for greater charging demand and different EV charging technologies will make it easier for the customer to expand in the future.

Many of these factors significantly impact the performance of the charging installations, station uptime, and customer satisfaction. Evergy intends to incorporate these best practices into the Commercial EV Charger Rebate program in the form of program guidance for customers.

Refer to Appendix A for a program summary, including the estimated number of charging ports resulting from the Commercial EV Charger Rebate program. The proposed Commercial EV Charger Rebate program tariff sheets are provided in Appendix B.

4.4 Electric Transit Service Rate

Evergy proposes a new Electric Transit Service (ETS) rate option for transit bus fleet customers in Kansas Metro to increase EV adoption in this vehicle segment, support transit customers in realizing the benefits of BEBs, and offer a rate similar to the existing Kansas Central tariff.[80] As BEB technology becomes increasingly viable, transit bus fleets in Evergy territory are interested in the advantages of improved TCO, operational benefits, and environmental advantages of BEBs. A favorable rate enables transit companies to calculate and compare their fuel costs, a major input into building the business case to purchase BEBs. The proposed transit rate will significantly improve the economics of transit fleet electrification.

The ETS rate aligns with Evergy's equity commitment by directly supporting the electrification of public transit buses, which will benefit underserved customers that rely on transit services and are more exposed to the emissions from diesel transit buses.

The ETS rate is a two-period TOU rate with a 12-hour off-peak period (6 p.m.-6 a.m.) that aligns with typical transit fleet depot charging patterns. The rate removes the demand charge, while retaining a small local facility demand charge to incentivize managed charging. Transit customers must separately meter their EV charging station to participate in the rate and all rate riders and surcharges will apply. Customers will work with their Evergy account manager to determine eligibility and enroll in the rate.

The ETS rate was developed to be revenue neutral with a commercial customer with similar annual consumption on the Large General Service-Space Heating (LGA) rate schedule. The ETS customer and facility charges are equal to the charges in LGA rate schedule. The ETS rate does not include a demand charge as Evergy will not incur any incremental generation and transmission capacity costs to serve these loads. The energy charges were determined by setting the off-peak energy charge equivalent to the third block of the LGA rate which typically represents "third shift" usage. This off-peak energy charge is relatively low but still exceeds Evergy's marginal energy cost. The on-peak energy charge was calculated such that the combination of customer, facility, on-peak, and off-peak energy charges is revenue neutral when compared to a LGA customer with similar annual consumption and the average LGA customer load profile. In this way, the rate design mirrors many features of existing LGA rate, while still meeting the anticipated needs of transit agencies for BEB charging.

In addition to an overall reduction in the cost of operations, most transit agencies expect fleet electrification to provide a reduction in their fleet's carbon emissions. Evergy has included a Carbon Free Energy Option in the ETS tariff for transit agencies that want their fleet's EV charging to be carbon free. Under this option, Evergy will procure renewable energy credits (REC) to offset energy provided from non-carbon free sources.

Evergy anticipates that no customers will immediately be served on the ETS rate and only a nominal amount of consumption is expected to be served pursuant to the rate in the near term. Therefore, any revenue impacts of this new offering will be negligible and will be less than if the load was served under a standard commercial rate. Evergy's objective is to establish the ETS rate as an incremental offering to meet the anticipated future transit needs of customers.

The ETS rate will encourage customers to shift EV charging to off-peak times while better aligning the cost of charging electric transit vehicles with the cost causation from the grid. The rate offers customers potentially lower and more predictable fuel costs for their EV transit fleets, which will help transit agencies justify an electric fleet conversion. The rate will also allow

[80] Evergy Kansas Central, "Electric Transit Service," approved November 24, 2020. Available at: https://www.evergy.com/-/media/documents/billing/kansas-central/other/electric-transit-service-01012021.pdf?la=en.

Evergy to better understand BEB charging patterns, which will enable further load analysis at a time when transit fleet electrification is expected to grow. The TOU rate also mitigates adverse grid impacts from new EV charging load, while increasing grid utilization at off-peak periods. Over time, this will have the effect of creating downward pressure on rates for all customers.

Evergy developed the ETS rate both in response to customer demand today and in anticipation of electrified transit market growth. Prior to Evergy Central's 2018 rate case, the Topeka Metro Transit Authority (TMTA) expressed its desire to purchase BEBs to diversify its fuel sources for its fleet. [81] TMTA sought a special electric rate to lower its electric fuel costs and improve the cost benefit analysis for electrification of its fleet. Evergy introduced in Kansas Central a new ETS tariff in the 2018 rate case that was designed to accommodate the unique charging pattern of transit fleets where the majority of charging would occur at night when parked at the depot. The current Kansas Central ETS tariff has no demand charge with the TOU energy charge.

Wichita Transit was the first transit agency to take service under the ETS tariff, receiving their first buses in December 2019. Transit agencies in Topeka and Lawrence have also begun their fleet conversion. This clearly illustrates that, with a tariff that reflects the unique charging patterns of BEBs, electric transit fleets can be cost competitive with conventional fleets.

KCATA approached Evergy Metro with a similar request. KCATA's bus electrification analysis showed the small general service rate to be uncompetitive with their existing fleet. KCATA has purchased two electric buses to evaluate but requires a rate that will substantially reduce the overall electric fuel costs before they can move forward with electrifying their fleet. For this reason, Evergy is proposing a similar ETS rate option in its Missouri Transportation Electrification Portfolio filing.

Refer to Appendix A for a summary of the rate and Appendix B for the proposed ETS tariff.

4.5 Business EV Charging Service Rate

Evergy proposes a new Business EV Charging Service (BEVCS) rate option for commercial customers to increase EV adoption, meet workplace employee and fleet EV charging needs, support public EVSP networks, and maximize grid benefits of EV charging load at commercial locations. Any commercial customer with an EV charging station is eligible for this rate. While the rate was designed using actual costs and charging patterns at workplace and fleet charging sites, the new rate would be suitable for any commercial EVSP including highway corridors, multi-family dwellings, and other public destinations.

The proposed BEVCS rate aligns with Evergy's equity commitment by directly supporting the electrification of commercial customer vehicles and reducing the cost of commercial EV charging to benefit underserved communities. Additional benefits of this rate for commercial customers include:

- Lower TCO for public fleets in a position to serve all customers, which will reduce the cost of providing public services through school buses, municipal service fleets, paratransit, rural transit, and public assistance vehicles;
- Lower TCO for commercial EV fleets, which will indirectly lower the cost of goods and services for all customers; and
- Affordable commercial charging, which will benefit all customers who charge away from home.

[81] See KCC Case No. 18-WSEE-328-RTS (Westar/EKC).

Commercial rates, which typically include demand charges, have been identified as significant financial obstacles for EVSPs and customers looking to electrify their fleets. DCFCs, which can draw large amounts of power to quickly charge vehicles, are especially susceptible to the impacts of high demand charges when utilization is low. The combination of high power and extremely low load factor is typical for commercial and industrial use cases and can subject fast charging stations to significant demand-based charges. Without substantial utilization and sales, commercial rates with relatively high fixed costs and demand charges inhibit the ability of charging stations to earn profits or fleets to be electrified economically.[82]

The BEVCS tariff is a TOU rate with three time periods designed to address commercial rate challenges for EVSPs and encourage workplace and fleet charging during off-peak times when system costs and grid utilization are lower. The BEVCS rate eliminates the demand charge while retaining a facility demand charge in order to incentivize managed charging. Customers must separately meter their EV charging station to participate in the rate and all rate riders and surcharges will apply. While commercial rebate recipients are not required to enroll in the BEVCS rate, these two TE portfolio components are complementary and will allow customers the flexibility to manage their charging operations according to their unique use case.

For Kansas Metro, the BEVCS rate was developed to be revenue neutral for a commercial customer with similar annual consumption on the LGA rate schedule. The BEVCS customer and facility charges are equal to the charges in the LGA rate schedule. The BEVCS rate does not include a demand charge and will recover these costs in the energy charges. The energy charges were determined by setting the off-peak energy charge equivalent to the third block of the LGA rate which typically represents “third shift” usage. This off-peak energy charge is relatively low but still exceeds Evergy’s marginal energy cost. Evergy then calculated the on-peak and off-peak energy charges such that the combination of customer, facility, on-peak, and off-peak energy charges are revenue neutral when compared to a LGA customer with similar annual consumption and the average LGA customer load profile. In this way, the rate design mirrors many features of the existing LGA rate, while still meeting the anticipated needs of commercial fleets and EVSPs.

For Kansas Central, the BEVCS rate was developed to be revenue neutral with a commercial customer with similar annual consumption on the Medium General Service (MGS) rate schedule. The BEVCS customer charge is equal to the MGS customer charge. The facility charge was set based on the revenue differential between the first and last energy blocks of the Dedicated Off-Peak Service (DOR) tariff. The BEVCS rate does not include a demand charge and will recover these costs in the energy charges. The energy charges were determined by setting the off-peak energy charge equivalent to the MGS rate. Evergy then calculated the on-peak and off-peak energy charges such that the combination of customer, facility, on-peak, and off-peak energy charges are revenue neutral when compared to a MGS customer with similar annual consumption and the average MGS customer load profile. In this way the rate design mirrors many features of the existing MGS rate while still meeting the anticipated needs of commercial fleets and EVSPs.

In addition to an overall reduction in the cost of operations, many commercial fleet operators expect fleet electrification to provide a reduction in their fleet’s carbon emissions. Evergy has included a Carbon Free Energy Option in the BEVCS tariff for customers that want

[82] NARUC, “Electric Vehicles: Key Trends, Issues, and Considerations for State Regulators,” October 2019. Available at: https://pubs.naruc.org/pub/32857459-0005-B8C5-95C6-1920829CABFE.

their fleet's EV charging to be carbon free. Under this option, Evergy will procure RECs to offset energy provided from non-carbon free sources.

Evergy anticipates that few customers will immediately be served on the rate and only a nominal amount of consumption is expected to be served pursuant to the rate in the near term. Therefore, any revenue impacts of this new offering will be negligible and will likely be less than if the load was served under a standard commercial rate. Evergy's objective is to establish the rate as an incremental offering to meet the anticipated future TE needs of customers.

The BEVCS rate will encourage customers to shift EV charging to off-peak times while better aligning the cost of charging EV with the cost causation from the grid. The rate offers customers potentially lower and more predictable fuel costs, which will help customers maximize operational savings of EVs. The rate will also allow Evergy to better understand where EV charging is occurring on the system, which will enable further load analysis to support grid management efforts at a time when EV adoption is expected to grow. The TOU rate mitigates adverse grid impacts from new EV charging load, while increasing grid utilization at off-peak periods.

Refer to Appendix A for a summary of the rate and Appendix B for the proposed tariff sheets.

4.6 Customer Education and Program Administration

Evergy proposes a separate component to conduct outreach and customer engagement related to this portfolio request. Given the significant benefits that EV adoption will bring to all customers, Evergy has a responsibility to help stimulate the EV market and inform customers about those benefits and available incentives, as well as educate customers about managing charging to save money and reduce the potential for negative grid impacts. Evergy's program administration activities will include rebate intake and processing, customer care, and overall program management and coordination.

This portfolio component is aligned to Evergy's equity commitment by ensuring transparency and lessening the barrier for customers to access accurate information about EV benefits and offerings in order to make informed decisions about EV purchases and charger usage. Furthermore, a focus on customer education is considered a best practice among utilities pursuing TE programs and is viewed favorably by other commissions. According to Atlas Public Policy, education components of utility TE filings have been met with an 83% approval rate.[83]

The program will offer customer education to support EV adoption and encourage participation in Evergy's program offerings. This will ensure that customers have the latest information regarding Evergy's EV rebates, tariffs, as well as the benefits of EVs, electric fuel costs, and charging station locations. Evergy will expand its current role of "energy advisor" into the TE space by offering technical assistance to help customers navigate EV-related decisions and to maximize the benefits of EV adoption. For example, Evergy will partner with transit and fleet customers to understand charging needs, evaluate existing capacity, and determine whether new infrastructure is needed to support their projects.

Evergy will use several methods to notify and educate developers about the residential developer rebate availability and benefits. For example, Evergy may create educational materials for developers, certified electricians, and related trade associations to support

[83] Atlas Public Policy, EV Hub, Utility Filings Dashboard, accessed January 4, 2021. Available at: https://www.atlasevhub.com/materials/electric-utility-filings/

education about rebate availability. Evergy's customer education and outreach activities will ensure the eventual homeowners are informed of the intended use of the outlet and are supported in purchasing an L2 EV charger (if desired) and/or participating in available TOU rates and incentives.

Evergy will consider among its awareness-building customer education efforts using communication channels such as Evergy's website, social media, billing messages, and workshops to communicate the benefits of EVs. Evergy may also create materials and resources to support customer participation in the TE portfolio programs, including a participant guide, self-guided tools, and access to technical assistance from program staff to help commercial customers assess and implement their EV adoption and charging infrastructure plans.

Evergy's activities will be informed by the knowledge that potential EV customers typically traverse various stages along the journey to EV car buying and each of these stages requires a different level of education and targeted resources:[84]

- **Pre-purchase** – customers need general education to build awareness of EVs.
- **Purchase** – customers are shopping for a new car and need specific information about EV makes, models, incentives, and charging options to make a purchase decision.
- **Early ownership** – once a customer has purchased a vehicle, they need support to change behaviors including planning their charging, accessing rebates or tariffs, and navigating other new experiences.
- **Continued ownership** – customers become comfortable with their EV and convert to EV enthusiasts.

Refer to Appendix A for a component summary, including the proposed budget.

4.7 Regulatory Considerations

4.7.1 Implementation and Reporting

Evergy proposes to administer the new rebate programs over a five-year period, beginning in the first quarter of 2022 and concluding in the first quarter of 2027. Evergy anticipates a three-month ramp-up period in 2021 to establish key processes, contracts, and operations prior to launching the programs.

Evergy proposes to voluntarily record and report to the Commission quantitative and qualitative measures of the new TE programs' status. Key performance indicators may include, but are not limited to, program participation and enrollment, customer and site types, EV charging installations to date, rebates paid, and customer satisfaction. Evergy believes that tracking and reporting is valuable for several reasons. Given that EV and charging technologies and services are relatively new for both Evergy and customers, regularly measuring and reporting on the outcomes of program implementation will be important to help improve and adapt TE program offerings in the future. Reporting on Evergy's experience is also valuable for stakeholders and other utilities that are pursuing TE efforts. Sharing best practices and lessons learned from Evergy's TE program implementation will be a valuable contribution to the broader industry. Furthermore, program reporting is considered a best practice among utilities pursuing TE programs.

[84] ESource, "Electrification Research Project: EV Marketing Assessment Debrief," January 7, 2020. Available at: https://docs.google.com/presentation/d/1BGihsm3-gD8iIIOmAPNJQRG8opAhe3dE/edit#slide=id.p1.

4.7.2 Cost Recovery

Evergy requests that the Commission authorize the Company to use a regulatory asset tracking mechanism to track and defer the program costs which include rebate incentives and certain associated customer education and administrative costs identified in Table 5 above. This regulatory asset tracking mechanism will provide the Company the ability to track and defer program costs to be considered for inclusion in the Company's cost of service in future rate cases. Evergy will not be able to recover the costs of the programs contemplated in this filing from program inception through the Company's next general rate case and between future rate cases without the requested regulatory asset tracking mechanism.

Evergy is seeking in this proceeding the ability to track and defer program costs for recovery of prudently incurred program costs in future rate cases through expense amortization over a period of five years. Evergy will not seek rate base treatment of the program costs that will be included in the regulatory asset tracking mechanism for the programs identified in Table 5. Evergy will provide the capital to fund the programs from program inception and between rate cases and proposes to be compensated for the capital carrying costs of doing so by retaining any additional revenues the program will produce until rates are reset in subsequent rate cases.

Specifically, Evergy requests the Commission authorize it to defer program costs associated with rebate incentives and customer education and program administrative costs into a regulatory asset from the inception of the programs until the Company's next filed general rate case to then ultimately recover prudently incurred costs for inclusion in cost of service in the Company's next general rate case. The Company proposes program costs be amortized into cost of service through an amortization period of five years. For such program costs that continue past the Company's next filed general rate case, the regulatory asset tracking mechanism will continue to defer program costs for the five-year term of the programs and be included in the Company's cost of service through amortizations in future rate cases. Absent Commission authority to track program costs through a regulatory asset tracking mechanism, the Company is unlikely to have the ability to recover the Company funded program costs. The Company acknowledges that deferred program costs will be subject to prudence review.

As described further in Section 4.8, Evergy intends to expand the CCN in its Kansas service territory. 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 although the Company is not seeking any regulatory asset tracking mechanism treatment for the expansion of additional CCN deployments as part of this filing. Evergy will request recovery of prudently incurred O&M expenses as well as rate base treatment of prudently incurred capital spend associated with the CCN deployments as part of a future general rate case consistent with other capital investments made by the Company and the Commission's decisional prudence determination in this proceeding.

4.7.3 Stakeholder Process

Throughout the development of this filing, Evergy conducted several stakeholder meetings with Staff and other interested parties. The valuable feedback Evergy collected through these meetings helped to inform the proposed design and ensure balance in the approach to addressing stakeholder priorities while meeting the needs of the EV market. In addition, customers and other stakeholders across the TE landscape provided letters that speak to their unique expertise on electrification, interest in EVs, and support for this TE portfolio filing. Refer to Appendix F for Letters of Support.

4.8 Clean Charge Network Expansion

In addition to the new programs and rates described above, Evergy plans to expand the CCN in Kansas to continue meeting the market demand for EV charging aligned to expected EV adoption growth. Evergy intends to stimulate and meet interim market demand in the absence of adequate charging service from third-party EVSPs. For this reason, the CCN expansion complements the commercial rebate offering and will ensure that all charging use cases are well-supported through a combination of these proposed program elements.

The CCN expansion will allow Evergy to continue to collect and analyze charger utilization data for various use cases, better understand where EV charging is occurring on the system, and enable further load analysis to support grid management activities. Evergy will build upon its award-winning customer outreach approach to spread awareness of the CCN, maintain up-to-date information about EV model availability, and hold events to engage customers.[85]

The planned CCN expansion is aligned with Evergy's equity commitment by maintaining a focus on filling gaps in the market and serving underserved communities, with a focus on Kansas Central. Site selection for new CCN stations will prioritize commercial locations in underserved communities, secondary and tertiary highway corridors, and potentially designated charging to support rideshare and TNC use cases. Evergy will use existing CCN data and experience to identify suitable locations to support these use cases.

Table 7 summarizes Evergy's estimated spending plan to install new CCN stations and the estimated number of resulting sites.

Table 7: CCN Expansion Summary

	Spending Plan	Resulting New CCN Sites
KS Metro	$0.6M	3
KS Central	$12.9M	99
KS Total	$13.5M	102

Evergy's planned expansion of the CCN into Kansas Central is intended to deliver public charging locations to priority areas that include a largely underserved area to accelerate EV adoption.

[85] See Appendix E for additional details on Evergy's experience with the CCN.

4.8.1 Highway Corridors

Creating a sufficient charging network decreases "range anxiety" by giving consumers the confidence they can safely reach their intended destination using an EV and be able to find a charger if needed. Range anxiety is still considered a significant barrier to increased EV adoption and is a concern that can be magnified when traveling longer distances on highways.[86] Fast charging hubs along highway corridors enable long distance and inter-city travel for EV drivers. Evergy proposes to expand the CCN to secondary and tertiary highway corridor locations within the service territory by providing DCFCs at strategic locations near highway exits. Currently, DCFC infrastructure is nascent in Evergy's territory. The addition of DCFC to highway corridors supports community-based fast charging for time-sensitive EV drivers while bolstering confidence for Evergy customers with real or perceived range anxiety to adopt an EV. This 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.

Through the Midwest Memorandum of Cooperation, Evergy has partnered with other utilities to create a multi-state EV charging network along major Midwest travel corridors by the end of 2022.[87] This commitment is consistent with Evergy's TE program priority to fill gaps in underserved areas, particularly along highway corridors to ensure that EVs operating across Evergy's territory can complete long-range trips with minimal range anxiety.

4.8.2 Transportation Network Companies

Rideshare and TNC services increasingly provide critical mobility solutions for underserved customers and individuals with limited access to owning or operating their own vehicles due to the high cost of private car ownership, impairments, or other mobility barriers. Evergy proposes to install DCFC infrastructure that can be used by electric rideshare programs, providing the benefits of EVs to customers who may not own a personal vehicle. 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. This aligns with Evergy's equity commitment by removing mobility barriers and supporting affordable, accessible, and suitable EV options which will benefit underserved customers who may depend on shared transportation services.

4.8.3 Other Underserved Areas

Evergy's experience and data indicate that the ratio of EV owners per capita is relatively equal across jurisdictions, with the exception of Kansas Central, which is still nascent in its deployment of EV charging infrastructure. For this reason, Evergy's planned expansion of the CCN into Kansas Central is intended to deliver public charging locations to a largely underserved area to accelerate EV adoption. Infrastructure investment by Evergy can jumpstart the market while also allowing for investment by third parties. Based on the projected EV growth in the next five years and the charging infrastructure needed to support those vehicles, Evergy believes there is opportunity for multiple investment models to serve market needs.

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[86] NREL, "Plug-in Electric Vehicle Showcases: Consumer Experience and Acceptance," July 2020. Available at: https://afdc.energy.gov/files/u/publication/pev_showcases_consumer_experience_acceptance.pdf.

[87] PR Newswire, "Midwest Energy Companies Pledge to Build Nation's Largest Interstate EV Charging Network, Enabling Clean Transportation," Available at: https://www.prnewswire.com/news-releases/midwest-energy-companies-pledge-to-build-nations-largest-interstate-electric-vehicle-charging-network-enabling-clean-transportation-301135689.html.

Appendix A. Detailed Program Descriptions

Residential Customer EV Outlet Rebate	
Objective	The rebate will reduce the costs associated with enabling Level 2 EV charging installation at home, which provides customers with the ability to charge EVs in less time using a more energy-efficient charger (compared to Level 1). L2 charging enables EVs to charge sufficiently in the overnight hours (off peak) more effectively than using L1.
Target Market	Residential customers, primarily single-family homes
Description & Eligibility	The rebate incentivizes the installation of a 240V outlet to enable L2 EV charging. Customers will apply for a rebate after the qualified equipment has been installed and must provide proof of EV registration. Residential customers are limited to one rebate per residence. The customer applying for the rebate must be the Evergy account holder and have the authority to install the outlet.
Implementation Strategy	Customers will complete an online application form and upload the necessary documentation, which will include dated installation receipts provided by a certified electrician and proof of EV registration at the same address. The applicant must agree to participate in Evergy surveys related to their experience with the rebate, driving an EV, interest in TOU rate enrollment, etc.
Risk Management	Evergy will require that customers provide documentation to prove that an EV is registered (i.e., has been purchased or leased) at the installation address, no later than six months from the outlet installation date. Customers will not receive the rebate until documentation has been approved.
Measures & Incentives	Measure: Dedicated 240V, (40A or greater) circuit, including NEMA 14-50 outlet Incentive: 50% of the installation costs up to $500/outlet
Estimated Participation	Estimated rebates by jurisdiction are as follows: KS Metro: 1700 KS Central: 1400 **KS Total: 3100** These estimates are based on the assumption that 90% of EVs are driven by single-family home dwellers, 60% of those homes able to upgrade, and 20% of those new EV purchasers (per EPRI's medium EV adoption projection) will install a 240V outlet to facilitate EV charging.
Estimated Program Budget	KS Metro: $850,000 KS Central: $700,000 **KS Total: $1,550,000** The program budget estimates are based on the assumptions and participation rates noted above. Note: Customer education and program administration budgets are outlined separately.

Residential Developer EV Outlet Rebate	
Objective	The rebate will reduce the costs associated with enabling L2 EV charging at home, which provides customers with the ability to charge EVs faster and more efficiently than L1 charging. By targeting new homes, Evergy will help to ensure homes are pre-wired for L2 EV charging during construction, which will save costly upgrades for homeowners later. The program also seeks to enhance relationships with home developers and educate builders about the benefits of EV-ready construction.
Target Market	Developers of residential dwellings, primarily single-family homes
Description & Eligibility	The rebate incentivizes the installation of a 240V outlet in a location suitable to facilitate L2 EV charging. Developers will apply for a rebate after a qualified residence has been constructed with the outlet installed. Program participants are limited to one rebate per residence. Third-party vendors or EV charging providers are not eligible.
Implementation Strategy	Developers will complete an online application form and upload the necessary documentation, which will include the address at which the installation occurred.
Risk Management	Customer education and outreach activities will aim to inform eventual homeowners of the intent of the 240V outlet and are supported in next steps, such as purchasing an EV charger (if desired). Through Evergy's education activities, new homeowners will receive information about the benefits of charging with L2 and optional TOU rates.
Measures & Incentives	Measure: Dedicated 240V, (40A or greater) circuit, including NEMA 14-50 outlet Incentive: $250 for one outlet installed per home
Estimated Participation	Estimated rebates by jurisdiction are as follows: KS Metro: 200 KS Central: 200 **KS Total: 400** These estimates are based on the assumption that 2% of new homes (calculated from historical building permit statistics) will be EV-ready.
Estimated Program Budget	KS Metro: $50,000 KS Central: $50,000 **KS Total: $100,000** The program budget estimates are based on the assumptions and participation rates noted above. Note: Customer education and program administration budgets are outlined separately.

Commercial EV Charger Rebate	
Objective	The rebates will reduce the costs associated with EV charging installations at a variety of locations (highway, public, workplace, fleet, and multi-family) by providing a rebate toward the make-ready infrastructure and equipment costs. The program will also allow Evergy to better understand where EV charging is occurring on the system, which will enable further load analysis and customer targeting. The program design is intended to be future-looking and incentivize smart, network-capable chargers to enable controllable load management regardless of what type of L2 or DCFC charger is installed.
Target Market	Commercial customers: highway corridors, other public destinations, workplaces, fleets, multi-family dwellings
Description & Eligibility	The rebate incentivizes the installation of Level 2 and DCFC at commercial locations. Customers will apply for a rebate after qualified equipment has been installed. Commercial customers are eligible for rebates associated with varying numbers of L2 and DCFC ports per premise. Leased charging stations are eligible with proof that the customer has executed an agreement for no less than five years.
Implementation Strategy	Evergy will issue an RFI to develop a list of qualified L2 and DCFC chargers meeting the technical specifications (e.g., networked, ENERGY STAR certified L2, safety certification). Evergy will periodically accept submittals from other vendors and update the qualified equipment list for those suppliers that meet the qualifications. Customers will complete an online pre-approval form, prompting Evergy to evaluate individual applications based on needs/priorities, existing infrastructure, and other factors. If pre-approved, customers will complete the rebate application forms and upload the necessary documentation, which will include dated EV charger installation receipts and proof of charger operation at the same address, to receive the rebate. Rebates must be claimed within six months of date of installation. Customers must provide Evergy with access to usage/utilization data, install stations in dedicated EV parking spaces, and agree to future demand response capabilities.
Risk Management	Evergy will require that customers provide documentation to prove that chargers have been installed within six months to receive the rebate and must provide documentation annually to demonstrate that EV chargers are operational for five years following the installation.
Measures & Incentives	Measure: Rebate support for installed customer infrastructure costs and qualified EVSE Incentive: Rebate of $2500 per port for L2 and $20,000 per unit for DCFC, capped at between $25,000-$65,000 per premise (depending on site type)

Commercial EV Charger Rebate	
Estimated Program Budget	Estimated rebate budgets by jurisdiction, based on a projected needs assessment, are as follows: KS Metro: $8.9M KS Central: $6.5M **KS Total: $15.4M** Note: Customer education and program administration budgets are outlined separately.
Estimated Rebated Charging Ports	The estimated number of charging ports to be installed with the estimated rebate budgets are as follows: KS Metro: 1120 L2, 305 DCFC KS Central: 1160 L2, 180 DCFC **KS Total: 2280 L2, 485 DCFC** The ports estimates assume each receives the maximum incentive allowed.

Electric Transit Service (ETS) Rate *(KS Metro)*	
Objective	The ETS rate will encourage customers to shift EV charging to off-peak times while better aligning the cost of charging electric transit vehicles with the cost causation from the grid. The rate offers customers potentially lower and more predictable fuel costs for their electrified transit fleets, which will help transit agencies justify an electric fleet conversion. The rate will also allow Evergy to better understand where EV charging is occurring on the system, which will enable further load analysis and customer targeting at a time when transit fleet electrification is expected to grow. Additionally, the rate mitigates adverse grid impacts from EV charging, increases grid utilization, and creates downward pressure on rates.
Target Market	Public transit fleets
Description & Eligibility	The ETS tariff is a TOU rate with a 12-hour peak that aligns with most fleet depot charging patterns. The rate does not include a demand charge but does include a facility demand charge in order to incentivize managed charging. Customers must separately meter their EVSE to participate in the tariff.
Implementation Strategy	Evergy will conduct targeted outreach to eligible transit customers to engage in rate-specific consultation and make the customer aware of other incentives including the commercial charging infrastructure rebate. Customers will work with their Evergy account manager or the Business Solutions Call Center to determine eligibility and enroll in the rate.
Risk Management	Evergy seeks to offer technical assistance to help the customer navigate the rate selection process in addition to fleet and infrastructure planning.
Estimated Participation	Participation is limited to transit customers and is expected to be low, particularly in initial years of rate availability.
Estimated Budget	Customer education and administration budgets are outlined separately.

Business EV Charging Service (BEVCS) Rate	
Objective	The BEVCS rate will encourage customers to shift EV charging to off-peak times while better aligning the cost of charging EV with the cost causation from the grid. The rate offers customers potentially lower and more predictable fuel costs, which will help customers maximize operational savings of EVs. The rate will also allow Evergy to better understand where EV charging is occurring on the system, which will enable further load analysis and customer targeting at a time when EV adoption is expected to grow. Additionally, the rate mitigates adverse grid impacts from EV charging, increases grid utilization, and creates downward pressure on rates.
Target Market	Commercial customers
Description & Eligibility	The BEVCS tariff is a TOU rate with three peak periods designed to align with actual costs and time periods for workplace and fleet charging. The rate does not include a demand charge but does include a facility demand charge in order to incentivize managed charging. Customers must separately meter their EVSE to participate in the tariff.
Implementation Strategy	Evergy will conduct targeted outreach to eligible commercial customers to engage in rate-specific consultation and make the customer aware of other incentives including the commercial charging infrastructure rebate. Customers will work with their Evergy account manager or the Business Solutions Call Center to determine eligibility and participate in the rate.
Risk Management	Evergy seeks to offer technical assistance to help the customer navigate the rate selection process in addition to fleet and infrastructure planning.
Estimated Participation	Participation is limited to commercial customers with electrified fleets and is expected to be low, particularly in initial years of rate availability.
Estimated Budget	Customer education and administration budgets are outlined separately.

Customer Education and Program Administration	
Objective	The proposed portfolio will include customer education, outreach, and support to encourage EV adoption and participation in Evergy's TE programs. This component will ensure that customers have the latest information regarding Evergy's EV rebates and rates, as well as the benefits of EVs. Evergy will offer technical assistance to help customers navigate EV-related decisions and to maximize the benefits of EV adoption.
Target Market	Customer education and outreach efforts will target all Evergy customers and TE program participants (rebate recipients, fleets, rate enrollees, etc.)
Description – Customer Education & Outreach	Evergy intends to include, at a minimum, the following functions: • Internal staff training focused on customer-facing roles • Material/collateral development and production • Website content specific to new programs • Customer education and outreach related to new programs • Technical assistance to support infrastructure planning and rate assessment
Description – Program Administration	Evergy intends to include the following functions: • Rebate application set-up, intake, and processing (including customer care) • Data collection, including customer surveys • Annual reporting • Overall program management and coordination
Estimated Budget	Estimated as 15% of the total five-year program budget, totaling: KS Metro: $1.5M KS Central: $1.1M **KS Total: $2.6M**

Appendix B. Program Tariff Sheets

Kansas Metro

- Transportation Electrification Program Rebates
- Electric Transit Service (ETS) Rate
- Business EV Charging Service (BEVCS) Rate

Kansas Central

- Transportation Electrification Program Rebates
- Business EV Charging Service (BEVCS) Rate

TRANSPORTATION ELECTRIFICATION PROGRAM

PURPOSE

The purpose of the Transportation Electrification 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.

PROGRAM INCENTIVES

The Program is comprised of three incentives:

- Residential Customer EV Outlet Rebate,
- Residential Developer EV Outlet Rebate, and
- Commercial EV Charger Rebate.

AVAILABILITY

Except as otherwise provided in the terms governing a specific incentive, the Program is available to all existing or potential Evergy customers that commit to installing, owning, and operating qualifying EV charging infrastructure and that are not in collections or have an active payment agreement with Company.

DEFINITIONS

BUILDER: A business entity that constructs residential dwellings.

DEVELOPER: A business entity that develops land through construction of residential dwellings.

TRANSPORTATION ELECTRIFICATION PROGRAM

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.

ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE): Equipment that communicates with and supplies electric power to the electric vehicle. EVSE is often referred to as the 'charger.' The EVSE may be a permanently mounted device or a plug-connected cord-set provided by the vehicle manufacturer.

ELECTRIC VEHICLE (EV): The collective term used for battery electric vehicles and plug-in hybrid electric vehicles.

EV SERVICE PROVIDER (EVSP): A company that produces and operates EV charging networks.

EV OUTLET: A dedicated 240V, 40 amp or greater, circuit, including a NEMA 14-50 outlet intended for Level 2 charging.

FLEET: A non-residential site intended to provide vehicle charging service to fleet vehicles of the business that occupies the site, but not to employees or the general public.

HIGHWAY CORRIDOR: A non-residential site intended to provide EV charging service along interstate highways, state highways or other thoroughfares that connect and provide long-distance travel between population centers.

HOME CHARGING: EVSE that is located at a residential dwelling, typically mounted in a garage, intended to provide EV charging service for the homeowner or renter.

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.

TRANSPORTATION ELECTRIFICATION PROGRAM

MAKE-READY INFRASTRUCTURE: Customer-side facilities between the utility meter and EVSE required to install new EV charging equipment.

MULTIFAMILY: A residential development with multiple leased or owned dwelling units intended to provide charging service to tenants and visitors, but not to the general public.

PORT: EVSE cables and connector that connect to the standard charging inlet in a car. When an EVSE has two sets of cables and can charge two EVs simultaneously, it is referred to as a dual-port EVSE

PUBLIC: A site that is available to the general public or the customers of an establishment that is open to the general public, including but not limited to government facilities, libraries, parks, retail establishments, and restaurants.

QUALIFIED EVSE: EVSE that meet Evergy requirements and have been approved by Evergy.

SITE: The property owned or occupied by the Customer where the EVSE will be installed.

SITE HOST: The business entity participating in the TE Rebate Program that owns, operates, and maintains the EVSE and the customer of record for Evergy that will be responsible for paying the corresponding electric bill.

WORKPLACE: A non-residential site intended to provide vehicle charging service to employees or visitors of the business that occupies the site, but typically not to the general public.

TERM

The Program will begin February 1, 2022, and shall continue for a period of five years, terminating on January 31, 2027. The Company may begin accepting applications prior to February 1, 2022, to the extent that it is able to do so. Applications for incentives under each category will be accepted until the earlier of the date that funding is exhausted for the incentive or January 31, 2027.

TRANSPORTATION ELECTRIFICATION PROGRAM

PROGRAM FUNDING

Total Company-supplied budget for the Program shall not exceed $11.3 million including approximately $1.5 million allocated for customer education and program administrative expenses but not including funds made available from other sources such as private, federal or state grants or programs. Each incentive is also subject to an individual budget estimated as follows:

Category	Budget
Residential Customer EV Outlet Rebate	$ 850,000
Residential Developer EV Outlet Rebate	$ 50,00
Commercial EV Charger Rebate	$ 8,900,000
Customer Education & Program Administration	$ 1,470,000
Total	$ 11,270,000

REGULATIONS

Subject to Rules and Regulations filed with the State Regulatory Commission.

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TRANSPORTATION ELECTRIFICATION PROGRAM

RESIDENTIAL CUSTOMER EV OUTLET REBATE

PURPOSE

The Residential Customer EV Outlet Rebate is designed to enable the residential customer's use of L2 home charging to charge their personal EV. The primary objectives of this rebate are to provide incentives to residential customers to reduce the cost of installing a 240-volt (V) outlet needed to accommodate faster and more energy-efficient L2 charging.

AVAILABILITY

This incentive is available, while funds remain, to residential customers being served under any residential rate schedule owning or renting an EV.

ELIGIBLE MEASURES AND INCENTIVES

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.

PROGRAM PROVISIONS

Customers must request a rebate by submitting an application through the Evergy website (www.evergy.com). Rebates will be distributed on a first-come basis according to the date of the application. Eligible customers must comply with the application instructions and agree to the Terms and Conditions to receive the rebate. By applying for the rebate, the applicant agrees that the project may be subject to on-site inspections by Evergy. A maximum of one (1) rebate is available per residence.

TRANSPORTATION ELECTRIFICATION PROGRAM

The rebate will be issued upon completion of the application process, which will require the applicant to provide proof of outlet installation by a certified electrician, costs, and date as well as proof of ownership or lease of an EV registered at the address in which the outlet was installed. Rebates must be claimed within six (6) months of date of installation. Residential customers must agree to participate in Evergy surveys related to their experience with the rebate and other relevant topics.

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TRANSPORTATION ELECTRIFICATION PROGRAM

RESIDENTIAL DEVELOPER EV OUTLET REBATE

PURPOSE

The Residential Developer EV Outlet Rebate is designed to enable future residential customer use of L2 home charging to charge their personal EV. The primary objectives of this rebate are to provide incentives to builders and developers to install an EV outlet during construction.

AVAILABILITY

This incentive is available to builders and developers for new residential construction projects while funds remain.

Third-party EVSE vendors or EVSPs are not eligible to apply for a Residential Developer EV Outlet Rebate.

ELIGIBLE MEASURES AND INCENTIVES

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.

PROGRAM PROVISIONS

Builders and developers must request a rebate for a project by submitting an application through the Evergy website (www.evergy.com). Rebates will be distributed on a first-come basis according to the date of the application. Eligible applicants must comply with the application instructions and agree to the Terms and Conditions to receive the rebate. By applying for the rebate, the applicant agrees that the project may be subject to on-site inspections by Evergy. A maximum of one (1) rebate is available per residence.

TRANSPORTATION ELECTRIFICATION PROGRAM

The rebate will be issued upon completion of the application process, which will require the applicant to provide proof of outlet installation by a certified electrician, costs, and date. Rebates must be claimed within six (6) months of date of installation. Rebate recipients must agree to participate in Evergy surveys related to their experience with the rebate and other relevant topics.

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TRANSPORTATION ELECTRIFICATION PROGRAM

COMMERCIAL EV CHARGING REBATE

PURPOSE

The Commercial EV Charging Rebate is designed to encourage development of EVSE at commercial customer sites. The primary objective of this rebate is to provide incentives to EV charging station site hosts to reduce the cost of make-ready infrastructure and EVSE.

AVAILABILITY

This incentive is available to commercial customers being served under any commercial rate schedule while funds remain.

ELIGIBLE MEASURES AND INCENTIVES

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.

The maximum number of qualified EVSE ports at each site are as follows:

TRANSPORTATION ELECTRIFICATION PROGRAM

Category	Level 2 Ports	DCFC Units	Maximum per Site
Commercial Highway Corridor	2	2	$45,000
Commercial Public	6	2	$55,000
Commercial Workplace or Fleet	10	2 (1)	$65,000
Commercial Multifamily	10	0	$25,000

(1) Only available where EVSE will serve fleet operations

Notwithstanding the limits on incentives at each individual site, business entities who install at public, workplace, fleet or multifamily locations may not receive total incentives under the program of more than $500,000.

PROGRAM PROVISIONS

Evergy will develop and maintain a list of qualified EVSE eligible for rebates and will make the list available on the Evergy website (www.evergy.com). Evergy will also develop and publish criteria for the individual site types: highway corridor, public, workplace, fleet, and multifamily.

Customers must request a rebate for a project by submitting an application through the Evergy website (www.evergy.com). Projects must be pre-approved by the Company before the project start date to be eligible for a rebate. Applications will be evaluated based on site suitability and the rebates will be distributed on a first-come basis according to the date of the customer's application. Eligible customers must comply with the application instructions and agree to the Terms and Conditions to receive the rebate. By applying for the rebate, the applicant agrees that the project may be subject to on-site inspections by Evergy.

A business entity with multiple sites may participate by submitting an application for each site. The maximum amount of each rebate will be calculated based on the number of L2 and/or DCFC EVSE installed up to the maximum allowable amount per site.

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TRANSPORTATION ELECTRIFICATION PROGRAM

The rebate will be issued upon completion of the project's final application process, which will require the customer to provide proof of equipment purchase, installation, costs, and dates. Rebates must be claimed within six (6) months of date of installation. Customers must agree to provide the Company access to charger utilization data, install stations in dedicated EV parking spaces, and agree to participate in potential future demand response events, if deemed necessary. Additionally, rebate recipients must agree to participate in Evergy surveys related to their experience with the rebate and other relevant topics.

Payment will be made within sixty (60) days of completion of project and validation of customer's W-9 information.

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ELECTRIC TRANSIT SERVICE

AVAILABILTY

Electric service is available under this schedule through one (1) meter point on the Company's existing distribution facilities. Single phase or if present at the location, three phase service is available at the secondary voltage of transformation facilities supplied from the Company's distribution system. At the Company's discretion, service may be provided through more than one metering point where it is economical for the Company to do so.

APPLICABILITY

To any non-residential customer using electric service for the exclusive use of charging electric public transit vehicles. The load served under this Schedule will be separately metered from all other commercial electrical loads and will be used exclusively for the purpose of charging electric transit vehicles. This Schedule allows other ancillary uses, limited to no more than 5 kW, that are specifically related to the provision of electric transit vehicle charging, such as area lighting.

TERM OF SERVICE

Service shall be provided for a fixed term of not less than one (1) year.

CARBON FREE ENERGY OPTION

Customers have the option to elect that all of the electricity under this schedule to be from carbon free resources. The Company, at its sole discretion, agrees to generate or purchase energy from carbon free sources and/or purchase and retire renewable energy credits in an amount at least equal to the level of service purchased under this tariff. The amount of carbon free energy available under this tariff shall be determined by the Company based on the amount of carbon free energy sources and renewable energy credits available to the Company.

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ELECTRIC TRANSIT SERVICE

RATE FOR SERVICE

A. Customer Charge (Per Month) $ 105.97

B. Facility Charge (Per kW of Billing Demand per month) $ 3.069

C. Energy Charge per Pricing Period (Per kWh)

	Summer Season	Winter Season
On-Peak Period	$0.19237	$0.10363
Off-Peak Period	$0.02755	$0.02416

D. Carbon Free Energy Option Charge (Per kWh) $0.00250

MINIMUM MONTHLY BILL

The Minimum Monthly Bill shall be equal to the sum of the Customer Charge and Facilities Charge.

SEASONS

The Summer Season is four consecutive months, beginning and effective June 1 and ending September 30 inclusive. The Winter Season is eight consecutive months, beginning and effective October 1 and ending May 31. Customer bills for meter reading periods including one or more days in both seasons will reflect the usage in each season.

PRICING PERIODS

Pricing periods are established in Central Time year-round. The hours for each pricing period are as follows:

On-Peak: 6 a.m. - 6 p.m., Monday through Friday, excluding Holidays
Off- Peak Period: All other hours

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ELECTRIC TRANSIT SERVICE

HOLIDAYS

Holidays are New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

MONTHLY MAXIMUM DEMAND

The Monthly Maximum Demand shall be the customer's maximum fifteen (15) minute integrated demand measured in kW during the current billing period.

FACILITIES DEMAND

Facilities Demand shall be equal to the highest Monthly Maximum Demand recorded in the last twelve (12) months including the current month. If there are less than eleven (11) previous billing periods, the determination will be made using all available previous billing periods.

ADJUSTMENTS AND SURCHARGES

The rates hereunder are subject to adjustment as provided in the following schedules:

- Energy Cost Adjustment (ECA)
- Energy Efficiency Rider (EER)
- Property Tax Surcharge (PTS)
- Tax Adjustment (TA)
- Transmission Delivery Charge (TDC)

REGULATIONS

Subject to Rules and Regulations filed with the State Regulatory Commission.

BUSINESS EV CHARGING SERVICE

AVAILABILTY

Electric service is available under this schedule through one (1) meter at point on the Company's existing distribution facilities. Single phase or if present at the location, three phase service is available at the secondary voltage of transformation facilities supplied from the Company's distribution system. At the Company's discretion, service may be provided through more than one metering point where it is economical for the Company to do so.

APPLICABILITY

To any non-residential customer using electric service for the exclusive use of charging electric vehicles. The load served under this Schedule will be separately metered from all other commercial electrical loads and will be used exclusively for the purpose of charging electric vehicles. This Schedule allows other ancillary uses, limited to no more than 5 kW, that are specifically related to the provision of electric vehicle charging, such as area lighting.

TERM OF SERVICE

Service shall be provided for a fixed term of not less than one (1) year.

CARBON FREE ENERGY OPTION

Customers have the option to elect that all of the electricity under this schedule to be from carbon free resources. The Company, at its sole discretion, agrees to generate or purchase energy from carbon free sources and/or purchase and retire renewable energy credits in an amount at least equal to the level of service purchased under this tariff. The amount of carbon free energy available under this tariff shall be determined by the Company based on the amount of carbon free energy sources and renewable energy credits available to the Company.

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BUSINESS EV CHARGING SERVICE

RATE FOR SERVICE

A. Customer Charge (Per Month) $ 105.97

B. Facility Charge (Per kW of Billing Demand per month) $ 3.069

C. Energy Charge per Pricing Period (Per kWh)

	Summer Season	Winter Season
On-Peak Period	$0.17979	$0.11522
Off-Peak Period	$0.08298	$0.05458
Super Off-Peak Period	$0.02755	$0.02416

D. Carbon Free Energy Option Charge (Per kWh) $0.00250

MINIMUM MONTHLY BILL

The Minimum Monthly Bill shall be equal to the sum of the Customer Charge and Facilities Charge.

SEASONS

The Summer Season is four consecutive months, beginning and effective June 1 and ending September 30 inclusive. The Winter Season is eight consecutive months, beginning and effective October 1 and ending May 31. Customer bills for meter reading periods including one or more days in both seasons will reflect the usage in each season.

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BUSINESS EV CHARGING SERVICE

PRICING PERIODS

Pricing periods are established in Central Time year-round. The hours for each pricing period are as follows:

On-Peak:	2 p.m. – 8 p.m., Monday through Friday, excluding Holidays
Super Off-Peak	12 a.m. – 6 a.m. every day
Off- Peak Period:	All other hours

HOLIDAYS

Holidays are New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

MONTHLY MAXIMUM DEMAND

The Monthly Maximum Demand shall be the customer's maximum fifteen (15) minute integrated demand measured in kW during the current billing period.

FACILITIES DEMAND

Facilities Demand shall be equal to the highest Monthly Maximum Demands recorded in the last twelve (12) months including the current month. If there are less than eleven (11) previous billing periods, the determination will be made using all available previous billing periods.

BUSINESS EV CHARGING SERVICE

ADJUSTMENTS AND SURCHARGES

The rates hereunder are subject to adjustment as provided in the following schedules:

- Energy Cost Adjustment (ECA)
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TRANSPORTATION ELECTRIFICATION PROGRAM

PURPOSE

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PROGRAM INCENTIVES

The Program is comprised of three incentives:

- Residential Customer EV Outlet Rebate,
- Residential Developer EV Outlet Rebate, and
- Commercial EV Charger Rebate.

AVAILABILITY

Except as otherwise provided in the terms governing a specific incentive, the Program is available to all existing or potential Evergy customers that commit to installing, owning, and operating qualifying EV charging infrastructure and that are not in collections or have an active payment agreement with Company.

DEFINITIONS

BUILDER: A business entity that constructs residential dwellings.

DEVELOPER: A business entity that develops land through construction of residential dwellings.

TRANSPORTATION ELECTRIFICATION PROGRAM

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.

ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE): Equipment that communicates with and supplies electric power to the electric vehicle. EVSE is often referred to as the 'charger.' The EVSE may be a permanently mounted device or a plug-connected cord-set provided by the vehicle manufacturer.

ELECTRIC VEHICLE (EV): The collective term used for battery electric vehicles and plug-in hybrid electric vehicles.

EV SERVICE PROVIDER (EVSP): A company that produces and operates EV charging networks.

EV OUTLET: A dedicated 240V, 40 amp or greater, circuit, including a NEMA 14-50 outlet intended for Level 2 charging.

FLEET: A non-residential site intended to provide vehicle charging service to fleet vehicles of the business that occupies the site, but not to employees or the general public.

HIGHWAY CORRIDOR: A non-residential site intended to provide EV charging service along interstate highways, state highways or other thoroughfares that connect and provide long-distance travel between population centers.

HOME CHARGING: EVSE that is located at a residential dwelling, typically mounted in a garage, intended to provide EV charging service for the homeowner or renter.

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.

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MAKE-READY INFRASTRUCTRE: Customer-side facilities between the utility meter and EVSE required
to install new EV charging equipment.

MULTIFAMILY: A residential development with multiple leased or owned dwelling units intended to provide charging service to tenants and visitors, but not to the general public.

PORT: EVSE cables and connector that connect to the standard charging inlet in a car. When an EVSE has two sets of cables and can charge two EVs simultaneously, it is referred to as a dual-port EVSE

PUBLIC: A site that is available to the general public or the customers of an establishment that is open to the general public, including but not limited to government facilities, libraries, parks, retail establishments, and restaurants.

QUALIFIED EVSE: EVSE that meet Evergy requirements and have been approved by Evergy.

SITE: The property owned or occupied by the Customer where the EVSE will be installed.

SITE HOST: The business entity participating in the TE Rebate Program that owns, operates, and maintains the EVSE and the customer of record for Evergy that will be responsible for paying the corresponding electric bill.

WORKPLACE: A non-residential site intended to provide vehicle charging service to employees or visitors of the business that occupies the site, but typically not to the general public.

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TERM

The Program will begin February 1, 2022, and shall continue for a period of five years, terminating on January 31, 2027. The Company may begin accepting applications prior to February 1, 2022, to the extent that it is able to do so. Applications for incentives under each category will be accepted until the earlier of the date that funding is exhausted for the incentive or January 31, 2027.

PROGRAM FUNDING

Total Company-supplied budget for the Program shall not exceed $8.35 million including approximately $1.1 million allocated for customer education and program administration expenses but not including funds made available from other sources such as private, federal or state grants or programs. Each incentive is also subject to an individual budget estimated as follows:

Category	Budget
Residential Customer EV Outlet Rebate	$ 700,000
Residential Developer EV Outlet Rebate	$ 50,000
Commercial EV Charger Rebate	$ 6,500,000
Customer Education & Program Administration	$ 1,087,500
Total	$ 8,337,500

REGULATIONS

Subject to Rules and Regulations filed with the State Regulatory Commission.

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TRANSPORTATION ELECTRIFICATION PROGRAM

RESIDENTIAL CUSTOMER EV OUTLET REBATE

PURPOSE

The Residential Customer EV Outlet Rebate is designed to enable the residential customer's use of L2 home charging to charge their personal EV. The primary objectives of this rebate are to provide incentives to residential customers to reduce the cost of installing a 240-volt (V) outlet needed to accommodate faster and more energy-efficient L2 charging.

AVAILABILITY

This incentive is available, while funds remain, to residential customers being served under any residential rate schedule owning or renting an EV.

ELIGIBLE MEASURES AND INCENTIVES

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.

PROGRAM PROVISIONS

Customers must request a rebate by submitting an application through the Evergy website (www.evergy.com/). Rebates will be distributed on a first-come basis according to the date of the application. Eligible customers must comply with the application instructions and agree to the Terms and Conditions to receive the rebate. By applying for the rebate, the applicant agrees that the project may be subject to on-site inspections by Evergy. A maximum of one (1) rebate is available per residence.

TRANSPORTATION ELECTRIFICATION PROGRAM

The rebate will be issued upon completion of the application process, which will require the applicant to provide proof of outlet installation by a certified electrician, costs, and date as well as proof of ownership or lease of an EV registered at the address in which the outlet was installed. Rebates must be claimed within six (6) months of date of installation. Residential customers must agree to participate in Evergy surveys related to their experience with the rebate and other relevant topics.

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RESIDENTIAL DEVELOPER EV OUTLET REBATE

PURPOSE

The Residential Developer EV Outlet Rebate is designed to enable future residential customer use of L2 home charging to charge their personal EV. The primary objectives of this rebate are to provide incentives to builders and developers to install a EV outlet during construction.

AVAILABILITY

This incentive is available to builders and developers for new residential construction projects while funds remain.

Third-party EVSE vendors or EVSPs are not eligible to apply for a Residential Developer EV Outlet Rebate.

ELIGIBLE MEASURES AND INCENTIVES

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.

PROGRAM PROVISIONS

Builders and developers must request a rebate for a project by submitting an application through the Evergy website (www.evergy.com). Rebates will be distributed on a first-come basis according to the date of the application. Eligible applicants must comply with the application instructions and agree to the Terms and Conditions to receive the rebate. By applying for the rebate, the applicant agrees that the project may be subject to on-site inspections by Evergy. A maximum of one (1) rebate is available per residence.

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TRANSPORTATION ELECTRIFICATION PROGRAM

The rebate will be issued upon completion of the application process, which will require the applicant to provide proof of outlet installation by a certified electrician, costs, and date. Rebates must be claimed within six (6) months of date of installation. Rebate recipients must agree to participate in Evergy surveys related to their experience with the rebate and other relevant topics.

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COMMERCIAL EV CHARGING REBATE

PURPOSE

The Commercial EV Charging Rebate is designed to encourage development of EVSE at commercial customer sites. The primary objective of this rebate is to provide incentives to EV charging station site hosts to reduce the cost of make-ready infrastructure and EVSE.

AVAILABILITY

This incentive is available to commercial customers being served under any commercial rate schedule while funds remain.

ELIGIBLE MEASURES AND INCENTIVES

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.

The maximum number of qualified EVSE ports at each site are as follows:

TRANSPORTATION ELECTRIFICATION PROGRAM

Category	Level 2 Ports	DCFC Units	Maximum per Site
Commercial Highway Corridor	2	2	$45,000
Commercial Public	6	2	$55,000
Commercial Workplace or Fleet	10	2 (1)	$65,000
Commercial Multifamily	10	0	$25,000

(1) Only available where EVSE will serve fleet operations

Notwithstanding the limits on incentives at each individual site, business entities who install at public, workplace, fleet, or multifamily locations may not receive total incentives under the program of more than $500,000.

PROGRAM PROVISIONS

Evergy will develop and maintain a list of qualified EVSE eligible for rebates and will make the list available on the Evergy website (www.evergy.com). Evergy will also develop and publish criteria for the individual site types: highway corridor, public, workplace, fleet, and multifamily.

Customers must request a rebate for a project by submitting an application through the Evergy website (www.evergy.com). Projects must be pre-approved by the Company before the project start date to be eligible for a rebate. Applications will be evaluated based on site suitability and the rebates will be distributed on a first-come basis according to the date of the customer's application. Eligible customers must comply with the application instructions and agree to the Terms and Conditions to receive the rebate. By applying for the rebate, the applicant agrees that the project may be subject to on-site inspections by Evergy.

A business entity with multiple sites may participate by submitting an application for each site. The maximum amount of each rebate will be calculated based on the number of L2 and/or DCFC EVSE installed up to the maximum allowable amount per site.

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The rebate will be issued upon completion of the project's final application process, which will require the customer to provide proof of equipment purchase, installation, costs, and dates. Rebates must be claimed within six (6) months of date of installation. Customers must agree to provide the Company access to charger utilization data, install stations in dedicated EV parking spaces, and agree to participate in potential future demand response events, if deemed necessary. Additionally, rebate recipients must agree to participate in Evergy surveys related to their experience with the rebate and other relevant topics.

Payment will be made within sixty (60) days of completion of project and validation of customer's W-9 information.

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BUSINESS EV CHARGING SERVICE

AVAILABILTY

Electric service is available under this schedule through one (1) meter at point on the Company's existing distribution facilities. Single phase or if present at the location, three phase service is available at the secondary voltage of transformation facilities supplied from the Company's distribution system. At the Company's discretion, service may be provided through more than one metering point where it is economical for the Company to do so.

APPLICABILITY

To any non-residential customer using electric service for the exclusive use of charging electric vehicles. The load served under this Schedule will be separately metered from all other commercial electrical loads and will be used exclusively for the purpose of charging electric vehicles. This Schedule allows other ancillary uses, limited to no more than 5 kW, that are specifically related to the provision of electric vehicle charging, such as area lighting.

TERM OF SERVICE

Service shall be provided for a fixed term of not less than one (1) year.

CARBON FREE ENERGY OPTION

Customers have the option to elect that all of the electricity under this schedule to be from carbon free resources. The Company, at its sole discretion, agrees to generate or purchase energy from carbon free sources and/or purchase and retire renewable energy credits in an amount at least equal to the level of service purchased under this tariff. The amount of carbon free energy available under this tariff shall be determined by the Company based on the amount of carbon free energy sources and renewable energy credits available to the Company.

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BUSINESS EV CHARGING SERVICE

RATE FOR SERVICE

A. Customer Charge (Per Month) $118.40

B. Facility Charge (Per kW of Billing Demand per month) $2.32

C. Energy Charge per Pricing Period (Per kWh)

	Summer Season	Winter Season
On-Peak Period	$0.22062	$0.14360
Off-Peak Period	$0.07879	$0.04787
Super Off-Peak Period	$0.01559	$0.01184

D. Carbon Free Energy Option Charge (Per kWh) $0.00250

MINIMUM MONTHLY BILL

The Minimum Monthly Bill shall be equal to the sum of the Customer Charge and Facilities Charge.

SEASONS

The Summer Season is four consecutive months, beginning and effective June 1 and ending September 30 inclusive. The Winter Season is eight consecutive months, beginning and effective October 1 and ending May 31. Customer bills for meter reading periods including one or more days in both seasons will reflect the usage in each season.

BUSINESS EV CHARGING SERVICE

PRICING PERIODS

Pricing periods are established in Central Time year-round. The hours for each pricing period are as follows:

On-Peak:	2 p.m. – 8 p.m., Monday through Friday, excluding Holidays
Super Off-Peak	12 a.m. – 6 a.m. every day
Off- Peak Period:	All other hours

HOLIDAYS

Holidays are New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

MONTHLY MAXIMUM DEMAND

The Monthly Maximum Demand shall be the customer's maximum fifteen (15) minute integrated demand measured in kW during the current billing period.

FACILITIES DEMAND

Facilities Demand shall be equal to the highest Monthly Maximum Demand recorded in the last twelve (12) months including the current month. If there are less than eleven (11) previous billing periods, the determination will be made using all available previous billing periods.

BUSINESS EV CHARGING SERVICE

ADJUSTMENTS AND SURCHARGES

The rates hereunder are subject to adjustment as provided in the following schedules:

- Retail Energy Cost Adjustment
- Energy Efficiency Rider
- Environmental Cost Recovery Rider
- Renewable Energy Program Rider
- Property Tax Surcharge
- Tax Adjustment
- Transmission Delivery Charge

Plus all applicable adjustments and surcharges.

REGULATIONS

Service under this rate schedule is subject to Company's General Rules and Regulations presently on file with the State Corporation Commission of Kansas and any modifications subsequently approved.

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Appendix C. Cost Effectiveness Evaluation

- Kansas Metro
- Kansas Central

Cost Effectiveness Evaluation of On-Road Transportation Electrification

Evergy, Kansas Metro

Revised May~~February~~ 2021

Prepared for:
Evergy

Prepared by:
ICF

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Executive Summary

Evergy has identified critical investments in transportation electrification that will further enable electric vehicle (EV) adoption in its Kansas Metro service territory, including innovative programs focused on supporting charging infrastructure build-out across a variety of customer applications. This cost effectiveness evaluation (also referred to as a cost-benefit analysis) serves as an important background document supporting Evergy's investments. ICF's analysis shows that increased EV adoption can yield net societal and customer benefits, while also benefiting EV drivers—and that these benefits have the potential to increase with more rapid EV adoption. Evergy's proposed transportation electrification programs are important steps to realizing the broader benefits characterized in ICF's analysis.

ICF's analysis concludes that all utility customers benefit from EV adoption. Specifically, ICF estimates a net present value (NPV) of approximately $~~46~~72.3 million in customer benefits through 2040 under a medium EV adoption scenario, which is equivalent to customer benefits of $~~1,068~~1,679 per EV adopted.[1] Utility customers include all that pay Evergy for electrical service, including residential, commercial, and industrial sectors. This analysis employs the conservative assumption that all Evergy customers bear commercial charging infrastructure costs required to support the projected level of EV adoption.

In addition to the Evergy customer perspective, ICF considered the impact of EV adoption from participant and societal perspectives. For this analysis, a "participant" is defined as an EV driver in Evergy's service territory and "society" is defined as the general society within the Kansas Metro service territory. The societal benefits are primarily economic, though there are environmental benefits that are not financially quantified in this analysis.

ICF's analysis demonstrates a *societal* net benefit ranging from approximately $2,143 per EV to $5,375 per EV with a low incremental vehicle pricing scenario depending on the EV adoption scenario (i.e., low, medium, high).

Also with a low incremental vehicle pricing scenario, ICF's analysis demonstrates a *participant* net benefit ranging from approximately $~~1,138~~562 per EV to $~~3,818~~3,092 per EV depending on the EV adoption scenario. The benefit level is also dependent on whether participants can take advantage of federal tax incentives or lower cost non-residential charging (e.g., when a charging facility can reduce the fees it collects from EV drivers).

ICF's analysis does not include the potential benefits of improved utility load factor and avoided distribution costs through improved asset management associated with managed charging and other efforts to shift EV charging activity to off-peak periods. Even modest benefits from improved utility load factor and distribution asset management will likely offset any cost increases presented by ICF in this evaluation. Actively managing charging may also help decrease net societal costs by reducing the increased demand through better utilization of charging infrastructure. While it was not assessed as part

[1] Across different assumptions, these benefits range from $~~12.1~~17.7 million to $~~112.1~~176.4 million. On a per vehicle basis, this benefit translates to between approximately $~~1,004~~1,581 and $~~1,557~~2,283 per EV adopted.

of this cost effectiveness evaluation, multiple studies conducted by ICF and others demonstrate the beneficial impact of managed charging. A comparison between the costs of charging that increases peak demand compared to no impacts on peak demand provides a proxy for potential benefits from managed charging.

1. Introduction

Evergy has identified multiple investments in transportation electrification that will further encourage EV adoption in Kansas. With the help of Evergy's Clean Charge Network, the EV market in Evergy's Kansas Metro service territory has grown over the past five years, with EVs on the road increasing by 506% from 500 EVs in 2015 to 3,030 EVs in September, 2020.[2] Roughly 55% of those light-duty EVs are battery electric vehicles (BEVs) and 45% of EVs are plug-in hybrid electric vehicles (PHEVs).

This cost effectiveness evaluation serves as an important background document supporting Evergy's development of innovative programs and infrastructure investments to encourage EV adoption in its Kansas Metro service territory. This analysis focuses on light-duty vehicles, currently the industry sector with the greatest opportunity to electrify, though medium-duty and heavy-duty vehicle electrification opportunities are emerging.

Table 1 below summarizes the costs and benefits for each of the three perspectives—societal, participant (or EV driver), and customer—considered in this analysis, with costs listed in red (C) and benefits listed in green (B). It is important to note that non-monetized benefits that are sometimes considered in the societal cost test, such as emission reductions, were not incorporated into this cost effectiveness evaluation. The analysis considers the impacts of increased EV adoption from 2021 through 2031, and across the added vehicles' lifespans through 2041. The ongoing costs and benefits are indicated in Table 1 with asterisks.

Table 1. Summary of Costs and Benefits

	Costs			Benefits		
Energy Costs	Societal	Participant	Customer	Societal	Participant	Customer
Energy Supply*	C		C			
Capacity Supply*	C		C			
Retail Electricity Bills*		C				B
Vehicle Costs						
Incremental Vehicle Price	C	C				
Federal Tax Credit				B	B	
O&M Costs*				B	B	
Avoided Gasoline Costs*				B	B	
Charging Infrastructure Costs						
Level 2 Residential	C	C				
Level 2 Nonresidential	C		C			
DC Fast Charging (DCFC)	C		C			

[2] EPRI provided Evergy historical data and projection estimates data for EV populations, sales, and emission reductions in September 2020.

There are additional climate and public health benefits associated with EVs that are not financially quantified in this analysis. For example, the Electric Power Research Institute, Inc. (EPRI) estimates between 8,479 and 187,175 metric tons of greenhouse gases could be reduced annually through increased EV adoption within Evergy's Kansas Metro service territory.[3]

Section 2 of this report provides an overview of data and assumptions employed in the analysis and Section 3 summarizes ICF's findings.

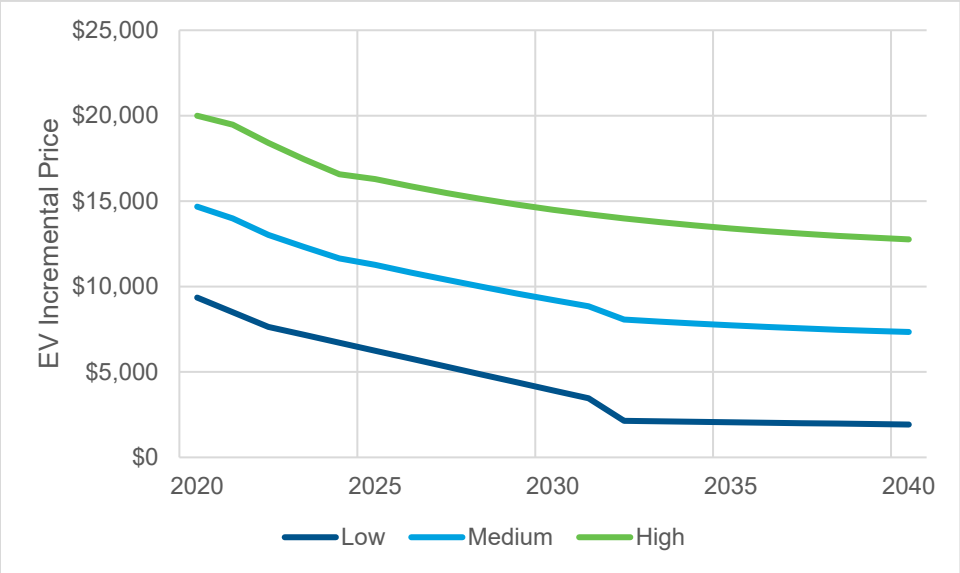
2. Data & Assumptions

Electric Vehicles

EV Pricing

The rate of anticipated decline of EV pricing has become a subject of considerable debate, particularly because of recent market research conducted by analysts such as Bloomberg New Energy Finance (BNEF). BNEF continues to forecast rapidly declining battery prices, which contrasts sharply with more conservative estimates from the U.S. Energy Information Administration (EIA), as outlined in the Annual Energy Outlook (AEO). The range of EV pricing assumptions makes for difficult choices in cost-benefit analyses; in this analysis, ICF used three different pricing outlooks. Figure 1 shows the assumed low, medium, and high EV incremental price trajectories employed in this analysis.

Figure 1. EV Incremental Pricing in ICF Modeling



[3] EPRI provided Evergy historical data and projection estimates data for EV populations, sales, and emission reductions in September 2020.

The low EV incremental pricing (see dark blue line in Figure 1) is consistent with a methodology that ICF developed in partnership with E3 and MJ Bradley as part of a cost-benefit analysis of EV adoption in New York State.[4] In that case, the project team modeled incremental EV pricing based on the cost of the "glider" (a simple vehicle chassis and body) and the cost of batteries ($/kWh), electric drive train ($/kW), and gasoline drivetrain (for PHEVs, in units of $/kW). The incremental vehicle pricing of the Ford Fusion was used as a baseline.

The high EV incremental pricing is consistent with 2020 AEO projections (see green line in Figure 1) across the various light-duty vehicle segments included in EIA's modeling.

The medium EV incremental pricing is an average of the low and high projections.

EV Purchase Incentives

ICF assumed that the federal EV tax credit (i.e., the Qualified Plug-in Electric Drive Motor Vehicle Credit) will be available until 2025. Note, however, that the federal tax credit has a nuanced sunset provision—the tax credit is phased out for each manufacturer based on total vehicle sales. The phase-out is described here:

> The qualified plug-in electric drive motor vehicle credit phases out for a manufacturer's vehicles over the one-year period beginning with the second calendar quarter after the calendar quarter in which at least 200,000 qualifying vehicles manufactured by that manufacturer have been sold for use in the United States (determined on a cumulative basis for sales after December 31, 2009) ("phase-out period"). Qualifying vehicles manufactured by that manufacturer are eligible for 50 percent of the credit if acquired in the first two quarters of the phase-out period and 25 percent of the credit if acquired in the third or fourth quarter of the phase-out period. Vehicles manufactured by that manufacturer are not eligible for a credit if acquired after the phase-out period.[5]

Tesla and General Motors have already passed the 200,000-vehicle threshold. Given that there is no specific date for a phase out of the federal tax credit, ICF assumed that it would be available through 2025.

EV Operations and Maintenance Costs

Market research indicates that EVs have lower operations and maintenance (O&M) costs than conventional vehicles because of fewer oil changes, less wear and tear on brakes, and other factors. These cost savings are in addition to those related to avoided gasoline fuel costs. For the purposes of this analysis ICF used maintenance cost assumptions from the Argonne National Laboratory's Alternative

[4] See Benefit-Cost Analysis of Electric Vehicle Deployment in New York State, February 2019, https://www.nyserda.ny.gov/-/media/Files/Publications/Research/Transportation/19-07-Benefit-Cost-Analysis-EV-Deployment-NYS.pdf

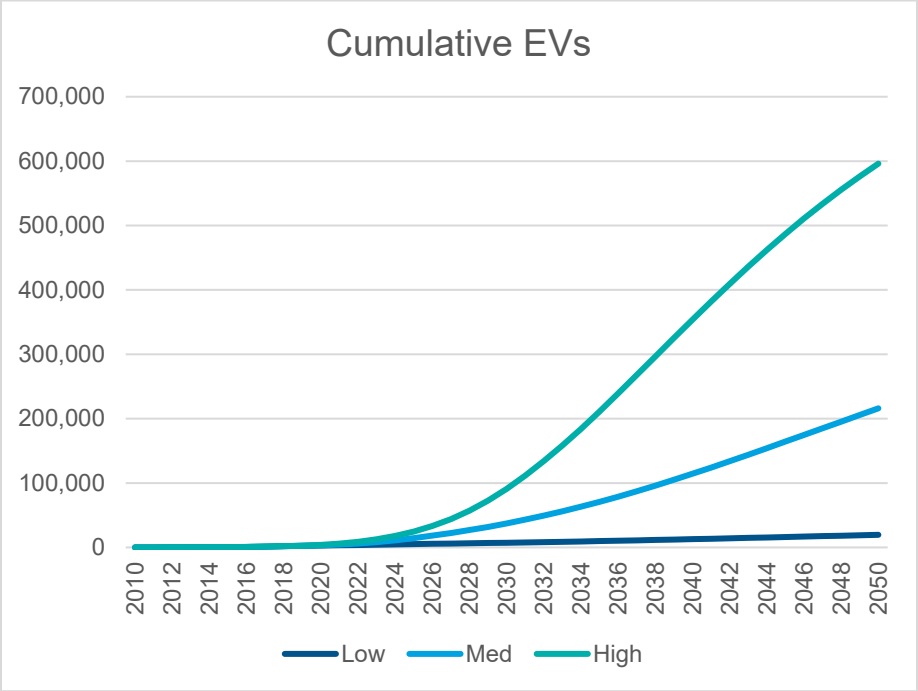
[5] Internal Revenue Service. Plug-In Electric Drive Vehicle Credit (IRC 30D), Accessed January 2021 online via https://www.irs.gov/businesses/plug-in-electric-vehicle-credit-irc-30-and-irc-30d.

Fuel Life-Cycle Environmental and Economic Transportation (AFLEET) tool. ICF assumed a 1.7 cents per mile difference between EVs and conventional vehicles; assuming 13,000 annual vehicles miles traveled (VMT), which results in $221 O&M savings per vehicle per year.

EV Adoption

Like forecasting battery EV pricing trajectories, EV adoption trajectories can stir considerable debate among stakeholders—including advocates and detractors of electrification alike. EPRI provided low, medium, and high EV population projections with their associated energy (MWh) impacts for each Evergy jurisdiction past 2019.[6] ICF used these projections to estimate year-by-year EV adoption out to 2040 within the Evergy Kansas Metro service territory for this analysis. Figure 2 shows EPRI's low, medium, and high EV adoption scenarios.

Figure 2. EPRI Evergy Kansas Metro EV Adoption Scenarios Used in ICF Modeling



ICF explored potential market impacts of the Coronavirus pandemic on these EV projections, and while there may be short-term impacts, the long-term impacts were not significant enough to warrant adjusting the original EPRI projections. It is also anticipated that the pandemic may not impact electric car sales as much as the overall passenger car market.[7]

[6] EPRI EV projections use the methodology outlined in "Plug-in Electric Vehicle Market Projections: Scenarios and Impacts," Report 3002011613 (December 2017). EPRI calibrates projections based on county-level EV registration data.

[7] As shown in IEA's Global EV Outlook 2020, https://www.iea.org/reports/global-ev-outlook-2020

Fuel Pricing

Electric Rates for EV Charging

ICF's modeling uses a weighted mix of residential and commercial rates to reflect the distribution of a typical EV's charging load profile. EPRI and Evergy provided the charging load profiles used in this analysis, which estimate that typical EVs use 70% residential charging, 20% workplace charging, and 10% public charging. ICF used Evergy's Kansas Metro Residential, Small General Service, Medium General Service and Public Charging rates, which resulted in an average rate of $0.13~~11~~/kWh. Further, ICF escalated residential rates in line with electric supply cost escalation rates at an average annual rate of 3%. This is intended to be a conservative assumption and does not reflect Evergy's expectations for future retail rates.

Energy Supply Costs

To calculate the incremental dollar costs to society and the utility customer resulting from the changes in electrical loads, ICF used energy supply costs—including the energy costs and capacity costs. Evergy provided the energy supply costs and projections used in this analysis. Evergy's energy costs are sourced from the Company's Integrated Resource Plan process, which develops a Southwest Power Pool (SPP) Locational Marginal Price forecast. Capacity supply costs include cost for generation and changes in SPP transmission fees.

Evergy's generation costs are based on a probability analysis of plant retirements and load forecast scenarios. In years where net capacity is long, a market-based approach is used to value capacity. In years where capacity is short, the levelized $/kW-year of a combustion turbine is used to value capacity.

SPP transmission fees are based on the monthly system peak demand. The estimated changes in SPP transmission fees used in this analysis are based on the impacts of utility programs (EV or otherwise) on monthly system peak demand.

Gasoline Pricing

Gasoline pricing assumptions were developed using a combination of wholesale gasoline pricing, EIA projections for the 2020 AEO, and applicable state and federal taxes. Table 2 below summarizes the gasoline pricing assumptions applied in the modeling.

Table 2. Gasoline Pricing Components used in ICF Modeling

Parameter	Description
Wholesale price of gasoline	ICF used 2020 national average for wholesale gasoline prices and projected based on energy prices reported for the Transportation sector from the AEO 2020 Reference Case. Inclusive of Distribution & Marketing Costs.
Federal excise tax	Held constant at 18.4 ¢/gallon.
State (KS) gasoline taxes	Held constant at 24.0 ¢/gallon.

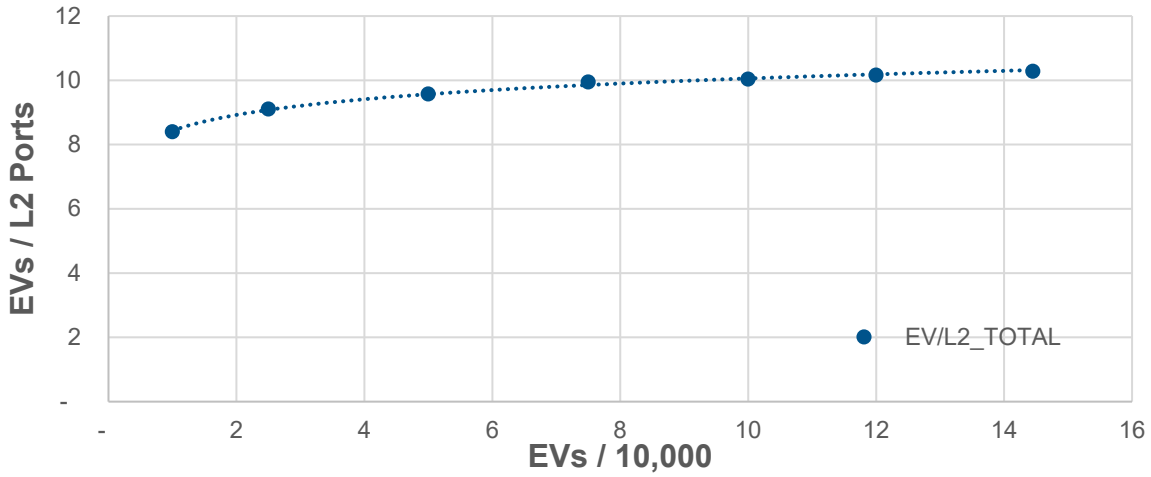
EV Charging Infrastructure

Charging Infrastructure Deployment

ICF developed assumptions for the quantity of chargers needed to support the EPRI EV adoption scenarios based on outputs from the National Renewable Energy Laboratory's EVI-Pro Lite tool.[8] These projections vary by level of charging (Level 2 and DCFC) and by charging location (residential and non-residential).

- For residential charging, ICF assumed 20% of single-family homes and 10% of multi-family homes with EVs will upgrade to Level 2 charging through 2035. Past 2035 this factor increases to 40% for single-family homes and 25% of multi-family homes. These estimates are based on feedback and territory insights from Evergy.
- For non-residential Level 2 charging, ICF fit a curve to outputs from the EVI-Pro Lite tool across different EV adoption rates for the Kansas City area to estimate the amount of public and workplace charging that would be needed (see Figure 3).

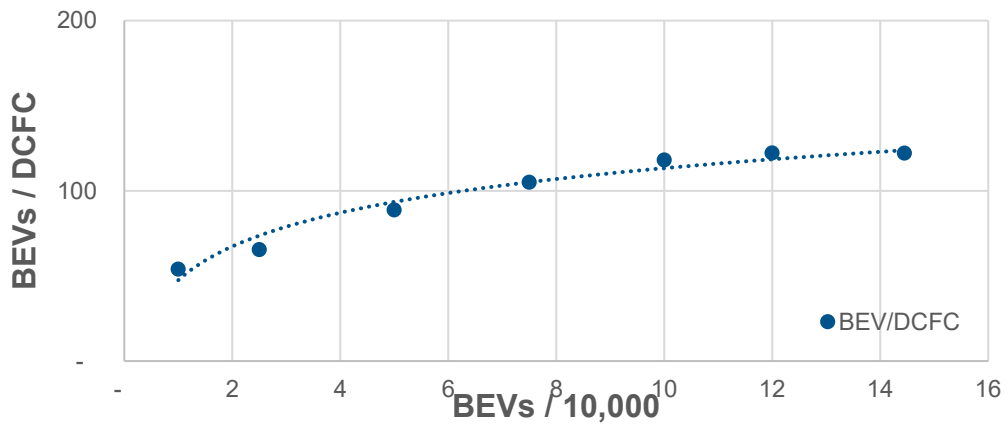
Figure 3. Level 2 Ports as a Function of EVs in Evergy's Kansas Metro Service Territory



[8] Electric Vehicle Infrastructure Projection Tool (EVI-Pro) Lite, via the Alternative Fuels Data Center, accessible online at https://afdc.energy.gov/evi-pro-lite.

- For DCFC (assumed to be units providing at least 50 kW), ICF fit a curve to outputs from the EVI-Pro Lite tool across different BEV adoption rates for the Kansas City area to estimate the amount of DCFCs that would be needed (see Figure 4).

Figure 4. DC Fast Chargers as a Function of BEVs in Evergy's Kansas Metro Service Territory



These relationships were used to estimate the quantity of Level 2 ports and DCFCs that would need to be installed to support the projected EV adoption in Evergy's Kansas Metro service territory.

Charging Infrastructure Costs

ICF's analysis applied the following cost assumptions for residential charging, commercial (non-residential) charging, and DCFC infrastructure.

Table 3. Charging Infrastructure Costs used in ICF Modeling

Charger Type	Ports per EVSE	Cost Assumption
Residential L1	N/A	$0
Residential L2	1	$1,200
Commercial L2	2	$14,000
DCFC	1	$75,000

- For residential charging installations, ICF assumed a total cost to the EV driver of $1,200, including $500 for the charger and total installation costs of $700 per Level 2 charger. ICF assumed Level 1 infrastructure would utilize existing outlets at no cost.
- For commercial charging installations, ICF used data provided by various stakeholders across multiple jurisdictions, including actuals from Evergy installations to date, concluding that the average cost for Level 2 dual-port installations was around $14,000. This cost is inclusive of the EV charger, necessary make-ready, and installation.
- For DCFC, ICF assumed that equipment would be able to deliver up to 150 kW, with a total cost of $75,000 per unit. This estimate is informed by actual costs from Evergy installations to date, as well as data provided by various stakeholders across multiple jurisdictions, and includes the charging station, site make-ready, and installation costs.

In this analysis, ICF assumed the participants (EV drivers) would bear the burden of the residential charging infrastructure costs. To conservatively represent the impacts of the utility involvement in the market, ICF applied the commercial L2 and DCFC infrastructure costs as a cost to all Evergy customers. The estimated infrastructure costs include the EV charging equipment, make-ready (both customer-side and utility-side facilities), and equipment installation. It is important to note that actual infrastructure costs can vary significantly based on the project and site. Utility-side facilities may not be required in all applications. ICF leveraged actual cost data and insight from Evergy's charging station installation experience in addition to available cost figures from other sources to derive cost assumptions.

3. Summary Results

ICF's analysis demonstrates that there are net customer benefits associated with EV adoption within Evergy's Kansas Metro service territory. There is a net present value (NPV) of approximately $~~46~~72.3 million in customer benefits from 2021 through 2040 under the medium EV adoption scenario, which is equivalent to customer benefits of $~~1,068~~1,679 per EV deployed. It is important to note that this analysis does not include ancillary benefits, such as health and environmental benefits, that would likely increase the estimated benefits of EVs to customers. Other benefits not included are those resulting from improving the utility load factor and better distribution asset management.

Participants (EV drivers within Evergy's Kansas Metro service territory) benefit the most when EV pricing is assumed to be low and when they can take advantage of lower electric rates relative to gasoline prices. ICF estimates a NPV participant benefit of $~~77.1~~50.8 million, or $~~1,790~~1,179 per EV deployed, when the low incremental EV pricing scenario is used with the medium EV adoption scenario. This becomes a maximum NPV cost of $~~194.4~~220.7 million for EV drivers or -$~~4,510~~5,121 per EV deployed when the high incremental EV pricing assumption is employed.

The societal impacts of EV adoption are most sensitive to EV pricing. Under the low incremental EV pricing scenario and medium EV adoption scenario, ICF reports a net benefit to society of $123.2 million, valued at approximately $2,858 per EV deployed. However, as EV pricing increases to the high incremental cost, ICF reports net societal costs of $148.3 million or nearly -$3,442 per EV deployed.

The subsections below review the variations observed in ICF's analysis across low, medium, and high scenarios for incremental EV pricing and EV adoption.

Variation in EV Pricing

ICF's modeling is most sensitive to EV pricing (the capital costs to purchase an EV). ICF views this as reinforcement of the concept that increased adoption is needed to help reduce EV pricing through increased demand. In addition to efforts by the utility to support increased adoption, as well as technology advancements (e.g., batteries), ICF expects that more EVs available from automakers and government initiatives have the potential to increase demand and drive down costs. Furthermore, lower incremental EV pricing will also reduce the impact as the federal tax credit is phased out with higher adoption.

The tables below summarize the net societal, participant, and customer impacts across the low, medium, and high incremental EV pricing scenarios. The other parameters, including EV adoption and electricity rates, are unchanged.

EV Adoption	Medium Scenario		
EV Pricing	Low Scenario		
Rate (Res / Comm)	Residential, Small General Service, Medium General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	$123.2	$~~77.1~~150.8	$~~46~~72.3
Per EV Deployed	$2,858	$~~1,790~~1,179	$~~1,068~~1,679

EV Adoption	Medium Scenario		
EV Pricing	Medium Scenario		
Rate (Res / Comm)	Residential, Small General Service, Medium General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	-$12.6	-$~~58.6~~84.9	$~~46~~72.3
Per EV Deployed	-$292	-$~~1,360~~1,971	$~~1068~~1,679

EV Adoption	Medium Scenario		
EV Pricing	High Scenario		
Rate (Res / Comm)	Residential, Small General Service, Medium General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	-$148.3	-$~~194.4~~220.7	$~~46~~72.3
Per EV Deployed	-$3,442	-$~~4,510~~5,121	$~~1,068~~1,679

Variation by EV Adoption Scenarios

The tables below show the variation in societal, participant, and customer impacts as a function of changing the rate of EV adoption in Evergy's Kansas Metro service territory across the low, medium, and high adoption scenarios. Other parameters—including EV pricing and rates—are otherwise unchanged. As EV adoption increases, so do the societal, participant, and customer net benefits.

EV Adoption	Low Scenario		
EV Pricing	Low Scenario		
Rate (Res / Comm)	Residential, Small General Service, Medium General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	$41.7	$~~29.6~~24	$~~12.1~~17.7
Per EV Deployed	$5,375	$~~3,818~~3,092	$~~1,557~~2,283

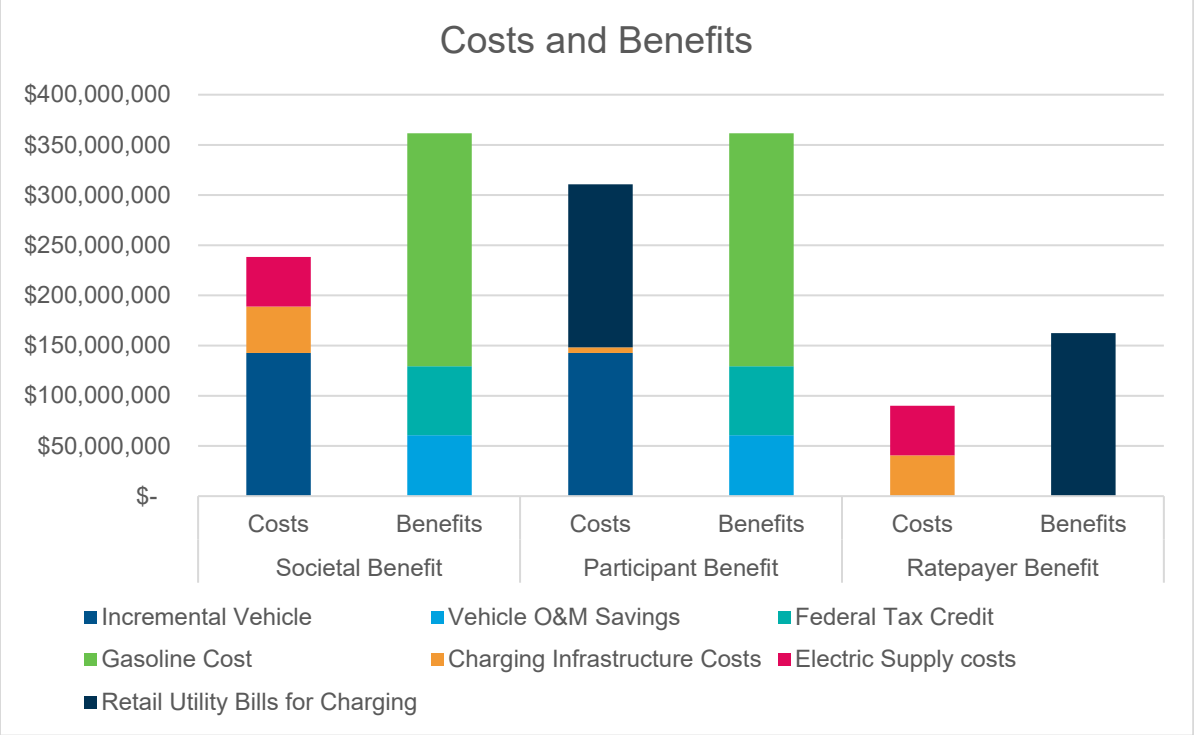
EV Adoption	Medium Scenario		
EV Pricing	Low Scenario		
Rate (Res / Comm)	Residential, Small General Service, Medium General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	$123.2	$~~77.1~~50.8	$~~46~~72.3
Per EV Deployed	$2,858	$~~1,790~~1,179	$~~1,068~~1,679

EV Adoption	High Scenario		
EV Pricing	Low Scenario		
Rate (Res / Comm)	Residential, Small General Service, Medium General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	$239.1	$~~127~~62.7	$~~112.1~~176.4
Per EV Deployed	$2,143	$~~1,138~~562	$~~1,004~~1,581

Conclusion

Increased EV adoption with low incremental EV pricing will benefit EV drivers, Evergy's customers, and society throughout the Kansas Metro service territory. Figure 5 below highlights how the NPV benefits outweigh the costs from the societal, participant, and customer perspectives under the medium EV adoption scenario and low incremental EV pricing scenario. It is important to note that this analysis does not include ancillary benefits that would likely increase the estimated benefits of EVs to customers, including improving the utility load factor and better distribution asset management.

Figure 5. Impacts of Medium EV Adoption Scenario with Low Incremental EV Pricing



Cost Effectiveness Evaluation of On-Road Transportation Electrification

Evergy, Kansas Central

Revised May~~February~~ 2021

Prepared for:
Evergy

Prepared by:
ICF

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Executive Summary

Evergy has identified critical investments in transportation electrification that will further enable electric vehicle (EV) adoption in its Kansas Central service territory, including innovative programs focused on supporting charging infrastructure build-out across a variety of customer applications. This cost effectiveness evaluation (also referred to as a cost-benefit analysis) serves as an important background document supporting Evergy's investments. ICF's analysis shows that increased EV adoption can yield net societal and customer benefits, while also benefiting EV drivers—and that these benefits have the potential to increase with more rapid EV adoption. Evergy's proposed transportation electrification programs are important steps to realizing the broader benefits characterized in ICF's analysis.

ICF's analysis concludes that all utility customers benefit from EV adoption. Specifically, ICF estimates a net present value (NPV) of approximately $~~25~~46.9 million in customer benefits through 2040 under a medium EV adoption scenario, which is equivalent to customer benefits of $~~535~~971 per EV adopted.[1] Utility customers include all that pay Evergy for electrical service, including residential, commercial, and industrial sectors. This analysis employs the conservative assumption that all Evergy customers bear commercial charging infrastructure costs required to support the projected level of EV adoption.

In addition to the Evergy customer perspective, ICF considered the impact of EV adoption from participant and societal perspectives. For this analysis, a "participant" is defined as an EV driver in Evergy's service territory and "society" is defined as the general society within the Kansas Metro service territory. The societal benefits are primarily economic, though there are environmental benefits that are not financially quantified in this analysis.

ICF's analysis demonstrates a *societal* net benefit ranging from approximately $1,942 per EV to $5,164 per EV with a low incremental vehicle pricing scenario depending on the EV adoption scenario (i.e., low, medium, high).

Also with a low incremental vehicle pricing scenario, ICF's analysis demonstrates a *participant* net benefit ranging from approximately $~~1,382~~955 per EV to $~~4,384~~3,872 per EV depending on the EV adoption scenario. The benefit level is also dependent on whether participants can take advantage of federal tax incentives or lower cost non-residential charging (e.g., when a charging facility can reduce the fees it collects from EV drivers).

ICF's analysis does not include the potential benefits of improved utility load factor and avoided distribution costs through improved asset management associated with managed charging and other efforts to shift EV charging activity to off-peak periods. Even modest benefits from improved utility load factor and distribution asset management will likely offset any cost increases presented by ICF in this evaluation. Actively managing charging may also help decrease net societal costs by reducing the increased demand through better utilization of charging infrastructure. While it was not assessed as part of this cost effectiveness evaluation, multiple studies conducted by ICF and others demonstrate the

[1] Across different assumptions, these benefits range from $~~4.5~~7.5 million to $~~83.4~~147.1 million. On a per vehicle basis, this benefit translates to between approximately $~~560~~971 and $~~780~~1,292 per EV adopted.

beneficial impact of managed charging. A comparison between the costs of charging that increases peak demand compared to no impacts on peak demand provides a proxy for potential benefits from managed charging.

1. Introduction

Evergy has identified multiple investments in transportation electrification that will further encourage EV adoption in Kansas. With the help of Evergy's Clean Charge Network, the EV market in Evergy's Kansas Central service territory has grown over the past five years, with EVs on the road increasing by 322% from 473 EVs in 2015 to 1,997 in September, 2020.[2] Roughly 55% of those light-duty EVs are battery electric vehicles (BEVs) and 45% of EVs are plug-in hybrid electric vehicles (PHEVs).

This cost effectiveness evaluation serves as an important background document supporting Evergy's development of innovative programs and infrastructure investments to encourage EV adoption in its Kansas Central service territory. This analysis focuses on light-duty vehicles, currently the industry sector with the greatest opportunity to electrify, though medium-duty and heavy-duty vehicle electrification opportunities are emerging.

Table 1 below summarizes the costs and benefits for each of the three perspectives—societal, participant (or EV driver), and customer—considered in this analysis, with costs listed in red (C) and benefits listed in green (B). It is important to note that non-monetized benefits that are sometimes considered in the societal cost test, such as emission reductions, were not incorporated into this cost effectiveness evaluation. The analysis considers the impacts of increased EV adoption from 2021 through 2031, and across the added vehicles' lifespans through 2041. The ongoing costs and benefits are indicated in Table 1 with asterisks.

Table 1. Summary of Costs and Benefits

	Costs			Benefits		
Energy Costs	Societal	Participant	Customer	Societal	Participant	Customer
Energy Supply*	C		C			
Capacity Supply*	C		C			
Retail Electricity Bills*		C				B
Vehicle Costs						
Incremental Vehicle Price	C	C				
Federal Tax Credit				B	B	
O&M Costs*				B	B	
Avoided Gasoline Costs*				B	B	
Charging Infrastructure Costs						
Level 2 Residential	C	C				
Level 2 Nonresidential	C		C			
DC Fast Charging (DCFC)	C		C			

[2] EPRI provided Evergy historical data and projection estimates data for EV populations, sales, and emission reductions in September 2020.

There are additional climate and public health benefits associated with EVs that are not financially quantified in this analysis. For example, the Electric Power Research Institute, Inc. (EPRI) estimates between 6,335 and 285,259 metric tons of greenhouse gases could be reduced annually through increased EV adoption within Evergy's Kansas Central service territory.[3]

Section 2 of this report provides an overview of data and assumptions employed in the analysis and Section 3 summarizes ICF's findings.

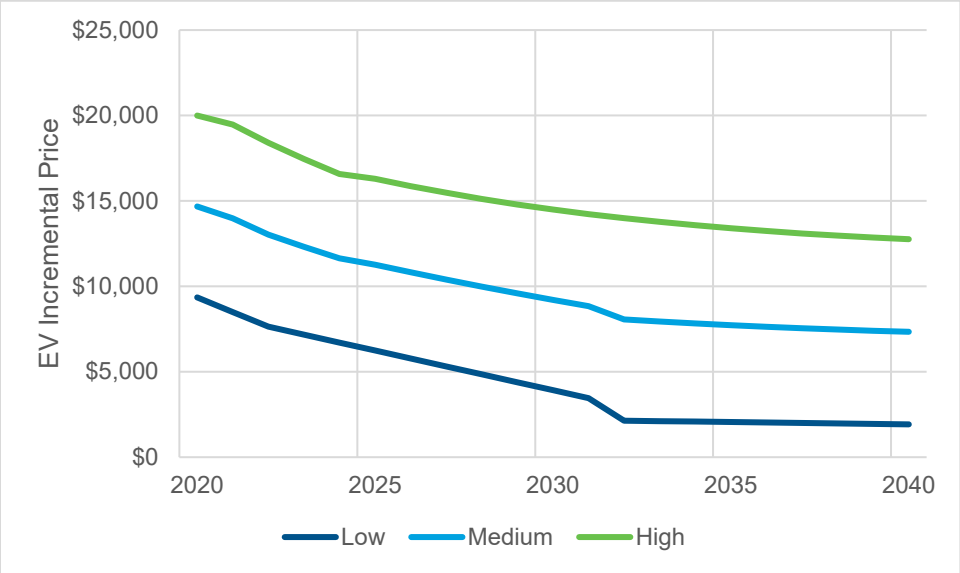
2. Data & Assumptions

Electric Vehicles

EV Pricing

The rate of anticipated decline of EV pricing has become a subject of considerable debate, particularly because of recent market research conducted by analysts such as Bloomberg New Energy Finance (BNEF). BNEF continues to forecast rapidly declining battery prices, which contrasts sharply with more conservative estimates from the U.S. Energy Information Administration (EIA), as outlined in the Annual Energy Outlook (AEO). The range of EV pricing assumptions makes for difficult choices in cost-benefit analyses; in this analysis, ICF used three different pricing outlooks. Figure 1 shows the assumed low, medium, and high EV incremental price trajectories employed in this analysis.

Figure 1. EV Incremental Pricing in ICF Modeling



[3] EPRI provided Evergy historical data and projection estimates data for EV populations, sales, and emission reductions in September 2020.

The low EV incremental pricing (see dark blue line in Figure 1) is consistent with a methodology that ICF developed in partnership with E3 and MJ Bradley as part of a cost-benefit analysis of EV adoption in New York State.[4] In that case, the project team modeled incremental EV pricing based on the cost of the "glider" (a simple vehicle chassis and body) and the cost of batteries ($/kWh), electric drive train ($/kW), and gasoline drivetrain (for PHEVs, in units of $/kW). The incremental vehicle pricing of the Ford Fusion was used as a baseline.

The high EV incremental pricing is consistent with 2020 AEO projections (see green line in Figure 1) across the various light-duty vehicle segments included in EIA's modeling.

The medium EV incremental pricing is an average of the low and high projections.

EV Purchase Incentives

ICF assumed that the federal EV tax credit (i.e., the Qualified Plug-in Electric Drive Motor Vehicle Credit) will be available until 2025. Note, however, that the federal tax credit has a nuanced sunset provision—the tax credit is phased out for each manufacturer based on total vehicle sales. The phase-out is described here:

> The qualified plug-in electric drive motor vehicle credit phases out for a manufacturer's vehicles over the one-year period beginning with the second calendar quarter after the calendar quarter in which at least 200,000 qualifying vehicles manufactured by that manufacturer have been sold for use in the United States (determined on a cumulative basis for sales after December 31, 2009) ("phase-out period"). Qualifying vehicles manufactured by that manufacturer are eligible for 50 percent of the credit if acquired in the first two quarters of the phase-out period and 25 percent of the credit if acquired in the third or fourth quarter of the phase-out period. Vehicles manufactured by that manufacturer are not eligible for a credit if acquired after the phase-out period.[5]

Tesla and General Motors have already passed the 200,000-vehicle threshold. Given that there is no specific date for a phase out of the federal tax credit, ICF assumed that it would be available through 2025.

EV Operations and Maintenance Costs

Market research indicates that EVs have lower operations and maintenance (O&M) costs than conventional vehicles because of fewer oil changes, less wear and tear on brakes, and other factors. These cost savings are in addition to those related to avoided gasoline fuel costs. For the purposes of this analysis ICF used maintenance cost assumptions from the Argonne National Laboratory's Alternative Fuel Life-Cycle Environmental and Economic Transportation (AFLEET) tool. ICF assumed a 1.7 cents per

[4] See Benefit-Cost Analysis of Electric Vehicle Deployment in New York State, February 2019, https://www.nyserda.ny.gov/-/media/Files/Publications/Research/Transportation/19-07-Benefit-Cost-Analysis-EV-Deployment-NYS.pdf

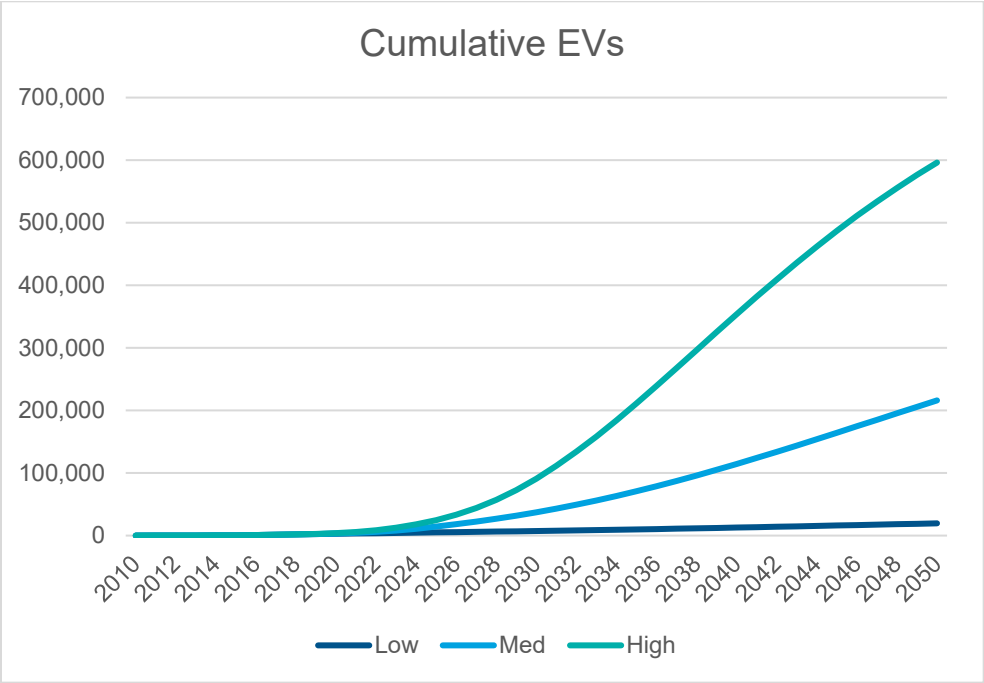
[5] Internal Revenue Service. Plug-In Electric Drive Vehicle Credit (IRC 30D), Accessed January 2021 online via https://www.irs.gov/businesses/plug-in-electric-vehicle-credit-irc-30-and-irc-30d.

mile difference between EVs and conventional vehicles; assuming 13,000 annual vehicles miles traveled (VMT), which results in $221 O&M savings per vehicle per year.

EV Adoption

Like forecasting battery EV pricing trajectories, EV adoption trajectories can stir considerable debate among stakeholders—including advocates and detractors of electrification alike. EPRI provided Evergy with low, medium, and high EV population projections with their associated energy (MWh) impacts for each Evergy jurisdiction past 2019.[6] ICF used these projections to estimate year-by-year EV adoption out to 2040 within the Evergy Kansas Central service territory for this analysis. Figure 2 shows EPRI's low, medium, and high EV adoption scenarios.

Figure 2. EPRI Evergy Kansas Central EV Adoption Scenarios Used in ICF Modeling



ICF explored potential market impacts of the Coronavirus pandemic on these EV projections, and while there may be short-term impacts, the long-term impacts were not significant enough to warrant adjusting the original EPRI projections. It is also anticipated that the pandemic may not impact electric car sales as much as the overall passenger car market.[7]

[6] EPRI EV projections use the methodology outlined in "Plug-in Electric Vehicle Market Projections: Scenarios and Impacts," Report 3002011613 (December 2017). EPRI calibrates projections based on county-level EV registration data.

[7] As shown in IEA's Global EV Outlook 2020, https://www.iea.org/reports/global-ev-outlook-2020

Fuel Pricing

Electric Rates for EV Charging

ICF's modeling uses a weighted mix of residential and commercial rates to reflect the distribution of a typical EV's charging load profile. EPRI and Evergy provided the charging load profiles used in this analysis, which estimate that typical EVs use 70% residential charging, 20% workplace charging, and 10% public charging. ICF used Evergy's Kansas Central Residential, Small General Service, Medium General Service and Public Charging rates, which resulted in an average rate of $0.11/kWh. Further, ICF escalated residential rates in line with electric supply cost escalation rates at an average annual rate of 3%. This is intended to be a conservative assumption and does not reflect Evergy's expectations for future retail rates.

Energy Supply Costs

To calculate the incremental dollar costs to society and the utility customer resulting from the changes in electrical loads, ICF used energy supply costs—including the energy costs and capacity costs. Evergy provided the energy supply costs and projections used in this analysis. Evergy's energy costs are sourced from the Company's Integrated Resource Plan process, which develops a Southwest Power Pool (SPP) Locational Marginal Price forecast. Capacity supply costs include cost for generation and changes in SPP transmission fees.

Evergy's generation costs are based on a probability analysis of plant retirements and load forecast scenarios. In years where net capacity is long, a market-based approach is used to value capacity. In years where capacity is short, the levelized $/kW-year of a combustion turbine is used to value capacity.

SPP transmission fees are based on the monthly system peak demand. The estimated changes in SPP transmission fees used in this analysis are based on the impacts of utility programs (EV or otherwise) on monthly system peak demand.

Gasoline Pricing

Gasoline pricing assumptions were developed using a combination of wholesale gasoline pricing, EIA projections for the 2020 AEO, and applicable state and federal taxes. Table 2 below summarizes the gasoline pricing assumptions applied in the modeling.

Table 2. Gasoline Pricing Components used in ICF Modeling

Parameter	Description
Wholesale price of gasoline	ICF used 2020 national average for wholesale gasoline prices and projected based on energy prices reported for the Transportation sector from the AEO 2020 Reference Case. Inclusive of Distribution & Marketing Costs.
Federal excise tax	Held constant at 18.4 ¢/gallon.
State (KS) gasoline taxes	Held constant at 24.0 ¢/gallon.

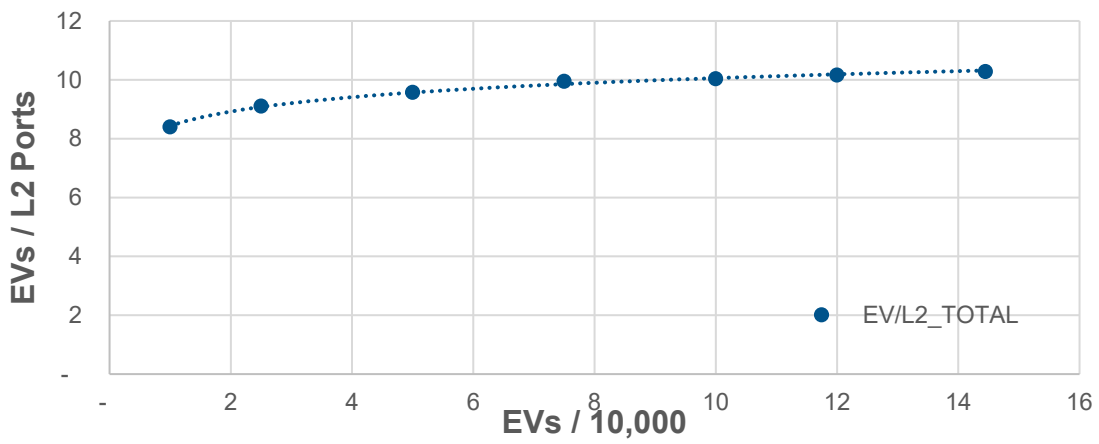
EV Charging Infrastructure

Charging Infrastructure Deployment

ICF developed assumptions for the quantity of chargers needed to support the EPRI EV adoption scenarios based on outputs from the National Renewable Energy Laboratory's EVI-Pro Lite tool.[8] These projections vary by level of charging (Level 2 and DCFC) and by charging location (residential and non-residential).

- For residential charging, ICF assumed 20% of single-family homes and 10% of multi-family homes with EVs will upgrade to Level 2 charging through 2035. Past 2035 this factor increases to 40% for single-family homes and 25% of multi-family homes. These estimates are based on feedback and territory insights from Evergy.
- For non-residential Level 2 charging, ICF fit a curve to outputs from the EVI-Pro Lite tool across different EV adoption rates for the Kansas City area to estimate the amount of public and workplace charging that would be needed (see Figure 3).

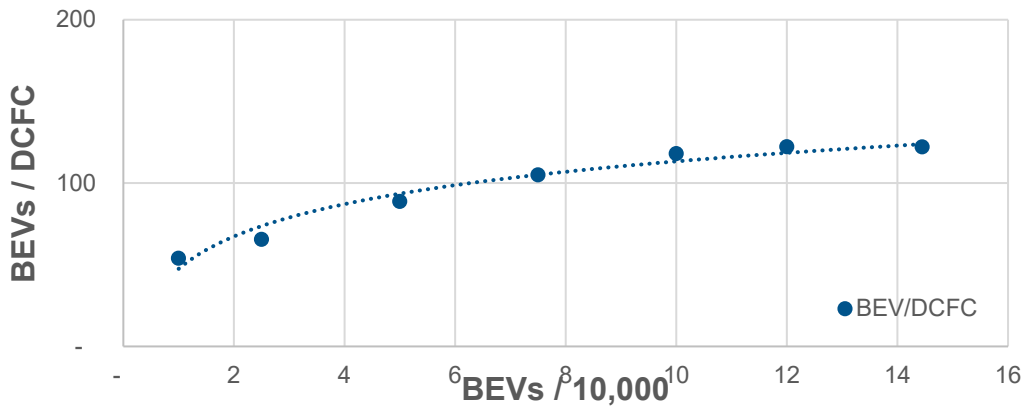
Figure 3. Level 2 Ports as a Function of EVs in Evergy's Kansas Central Service Territory



[8] Electric Vehicle Infrastructure Projection Tool (EVI-Pro) Lite, via the Alternative Fuels Data Center, accessible online at https://afdc.energy.gov/evi-pro-lite.

- For DCFC (assumed to be units providing at least 50 kW), ICF fit a curve to outputs from the EVI-Pro Lite tool across different BEV adoption rates for the Kansas City area to estimate the amount of DCFCs that would be needed (see Figure 4).

Figure 4. DC Fast Chargers as a Function of BEVs in Evergy's Kansas Central Service Territory



These relationships were used to estimate the quantity of Level 2 ports and DCFC chargers that would need to be installed to support the projected EV adoption in Evergy's Kansas Central service territory.

Charging Infrastructure Costs

ICF's analysis applied the following cost assumptions for residential charging, commercial (non-residential) charging, and DCFC infrastructure.

Table 3. Charging Infrastructure Costs used in ICF Modeling

Charger Type	Ports per EVSE	Cost Assumption
Residential L1	N/A	$0
Residential L2	1	$1,200
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DCFC	1	$75,000

- For residential charging installations, ICF assumed a total cost to the EV driver of $1,200, including $500 for the charger and total installation costs of $700 per Level 2 charger. ICF assumed Level 1 infrastructure would utilize existing outlets at no cost.
- For commercial charging installations, ICF used data provided by various stakeholders across multiple jurisdictions, including actuals from Evergy installations to date, concluding that the average cost for Level 2 dual-port installations was around $14,000. This cost is inclusive of the EV charger, necessary make-ready, and installation.
- For DCFC, ICF assumed that equipment would be able to deliver up to 150 kW, with a total cost of $75,000 per unit. This estimate is informed by actual costs from Evergy installations to date, as well as data provided by various stakeholders across multiple jurisdictions, and includes the charging station, site make-ready, and installation costs.

In this analysis, ICF assumed the participants (EV drivers) would bear the burden of the residential charging infrastructure costs. To conservatively represent the impacts of the utility involvement in the market, ICF applied the commercial L2 and DCFC infrastructure costs as a cost to all Evergy customers. The estimated infrastructure costs include the EV charging equipment, make-ready (both customer-side and utility-side facilities), and equipment installation. It is important to note that actual infrastructure costs can vary significantly based on the project and site. Utility-side facilities may not be required in all applications. ICF leveraged actual cost data and insight from Evergy's charging station installation experience in addition to available cost figures from other sources to derive cost assumptions.

3. Summary Results

ICF's analysis demonstrates that there are net customer benefits associated with EV adoption within Evergy's Kansas Central service territory. There is a net present value (NPV) of approximately $46~~25~~.9 million in customer benefits from 2021 through 2040 under the medium EV adoption scenario, which is equivalent to customer benefits of $~~535~~971 per EV deployed. It is important to note that this analysis does not include ancillary benefits, such as health and environmental benefits, that would likely increase the estimated benefits of EVs to customers. Other benefits not included are those resulting from improving the utility load factor and better distribution asset management.

Participants (EV drivers within Evergy's Kansas Central service territory) benefit the most when EV pricing is assumed to be low and when they can take advantage of lower electric rates relative to gasoline prices. ICF estimates a NPV participant benefit of $~~88.8~~67.7 million, or $~~1,837~~1,401 per EV deployed, when the low incremental EV pricing scenario is used with the medium EV adoption scenario. This becomes a maximum NPV cost of $~~210~~231 million for EV drivers or -$~~4,346~~4,782 per EV deployed when the high incremental EV pricing assumption is employed.

The societal impacts of EV adoption are most sensitive to EV pricing. Under the low incremental EV pricing scenario and medium EV adoption scenario, ICF reports a net benefit to society of $114.6 million, valued at approximately $2,372 per EV deployed. However, as EV pricing increases to the high incremental cost, ICF reports net societal costs of $184.1 million or nearly -$3,811 per EV deployed.

The subsections below review the variations observed in ICF's analysis across low, medium, and high scenarios for incremental EV pricing and EV adoption.

Variation in EV Pricing

ICF's modeling is most sensitive to EV pricing (the capital costs to purchase an EV). ICF views this as reinforcement of the concept that increased adoption is needed to help reduce EV pricing through increased demand. In addition to efforts by the utility to support increased adoption, as well as technology advancements (e.g., batteries), ICF expects that more EVs available from automakers and government initiatives have the potential to increase demand and drive down costs. Furthermore, lower incremental EV pricing will also reduce the impact as the federal tax credit is phased out with higher adoption.

The tables below summarize the net societal, participant, and customer impacts across the low, medium, and high incremental EV pricing scenarios. The other parameters, including EV adoption and electricity rates, are unchanged.

EV Adoption	Medium Scenario		
EV Pricing	Low Scenario		
Rate (Res / Comm)	Residential, Small General Service, Medium General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	$114.6	$~~88.8~~67.7	$~~25.9~~46.9
Per EV Deployed	$2,372	$~~1,837~~1,401	$~~535~~971

EV Adoption	Medium Scenario		
EV Pricing	Medium Scenario		
Rate (Res / Comm)	Residential, Small General Service, Medium General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	-$34.8	-$~~60.6~~81.7	$~~25.9~~46.9
Per EV Deployed	-$719	-$~~1,255~~1,691	$~~535~~971

EV Adoption	Medium Scenario		
EV Pricing	High Scenario		
Rate (Res / Comm)	Residential, Small General Service, Medium General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	-$184.1	-$~~210~~231	$~~25.9~~46.9
Per EV Deployed	-$~~3,415~~3,811	-$~~4,510~~4,782	$~~535~~971

Variation by EV Adoption Scenarios

The tables below show the variation in societal, participant, and customer impacts as a function of changing the rate of EV adoption in Evergy's Kansas Central service territory across the low, medium, and high adoption scenarios. Other parameters—including EV pricing and rates—are otherwise unchanged. As EV adoption increases, so do the societal, participant, and customer net benefits.

EV Adoption	Low Scenario		
EV Pricing	Low Scenario		
Rate (Res / Comm)	Residential, Small General Service, Medium General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	$30	$~~25.5~~22.5	$~~4.5~~7.5
Per EV Deployed	$5,164	$~~4,384~~3,872	$~~780~~1,292

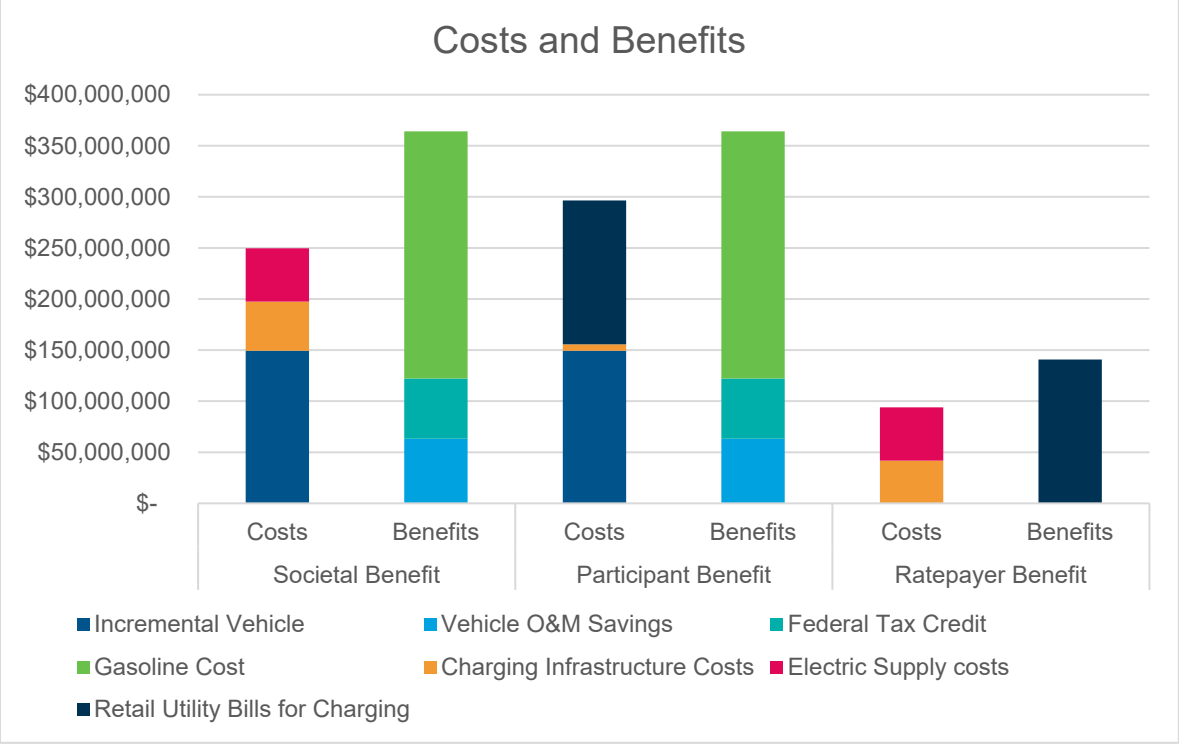
EV Adoption	Medium Scenario		
EV Pricing	Low Scenario		
Rate (Res / Comm)	Residential, Small General Service, Medium General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	$114.6	$~~88.8~~67.7	$~~25.9~~46.9
Per EV Deployed	$2,372	$~~1,837~~1,401	$~~535~~971

EV Adoption	High Scenario		
EV Pricing	Low Scenario		
Rate (Res / Comm)	Residential, Small General Service, Medium General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	$289.3	$~~205.9~~142.2	$~~83.4~~147.1
Per EV Deployed	$1,942	$~~1,382~~955	$~~560~~988

Conclusion

Increased EV adoption with low incremental EV pricing will benefit EV drivers, Evergy's customers, and society throughout the Kansas Central service territory. Figure 5 below highlights how the NPV benefits outweigh the costs from the societal, participant, and customer perspectives under the medium EV adoption scenario and low incremental EV pricing scenario. It is important to note that this analysis does not include ancillary benefits that would likely increase the estimated benefits of EVs to customers, including improving the utility load factor and better distribution asset management.

Figure 5. Impacts of Medium EV Adoption Scenario with Low Incremental EV Pricing



Appendix D. Technology Overview

D.1 Vehicle Technology

Transportation electrification involves the use of electricity to power vehicles and other modes of transportation, either completely or in part. Battery electric vehicles (BEVs) are powered by an electric motor using stored energy in an onboard battery pack instead of a conventional internal combustion engine (ICE) fueled by gasoline or diesel fuel. Plug-in hybrid electric vehicles (PHEVs) are powered by both an electric battery and an ICE. Typically, BEVs and PHEVs are collectively referred to as "EVs." To charge the battery, EVs must be plugged into an outlet or charging equipment, also called electric vehicle supply equipment (EVSE).

Because EVs run on electricity, EVs emit less (or no) exhaust emissions and are more energy efficient compared to ICE vehicles. The absence of an engine means that BEVs do not contain the typical liquid fuel components, such as a fuel pump, fuel line, or fuel tank. As a result, BEVs have fewer moving parts and require less maintenance than ICE vehicles.

Although passenger vehicles constitute the largest share of EV sales today, other vehicle segments and applications are rapidly electrifying. In particular, urban transit buses, school buses, commercial vans, light trucks, and a variety of off-road vehicles are increasingly becoming commercially available. At the time of this filing, heavy-duty vehicles including refuse and short-haul freight trucks are in demonstration stages and are expected to follow the first wave of commercial EVs.[88]

D.2 Charging Technology

EV customers have several charger options that deliver charging speed and efficiency at incrementally higher power rating levels. Each of these charging levels serve different vehicle applications and use cases, with L1 and L2 dominant in home and workplace charging, L2 and DCFC suitable for public charging, and both L2 and DCFC needed for fleet charging. Currently the most common EV charging levels are:

- **Level 1 (L1):** This refers to charging via a standard 120 V outlet. L1 charging is capable of charging at a rate of approximately 3-5 miles of range per hour.[89] L1 charging remains a viable home charging option for EV owners who drive relatively few miles per day.
- **Level 2 (L2):** This refers to charging at a voltage between 208 and 240 V. L2 charging is capable of charging at a rate of 8-24 miles of range per hour depending on the EV and charging circuit amperage.[90] L2 charging is suitable for most charging events in which the driver may be parked for several hours at long dwell time locations like home or the workplace. In addition, L2 charging has the advantage of being approximately 7-15% more energy efficient than L1 charging.[91]
- **Direct Current Fast Charging (DCFC):** In addition to the more common L1 and L2 charging, the demand for DCFC is increasing to meet the needs of current and future EV drivers. DCFC refers to charging at much higher voltages and currents compared to L1 and L2 charging. DCFC can charge compatible EVs at a rate over 10 times faster than L2 charging, thereby supporting long distance travel via EV. DCFCs are attractive

[88] CALSTART, "Drive to Zero's Zero-emission Technology Inventory (ZETI) Tool Version 5.9." Available at: https://globaldrivetozero.org/tools/zero-emission-technology-inventory/.
[89] EPRI, "Consumer Guide to EV Charging", 2019, p. 4. Available at: https://www.epri.com/research/products/000000003002016961.
[90] *ibid*
[91] Nissan, "Level 1 vs Level 2 EVSE Energy Consumption of Production EVs" 2020, p. 10. Available at: https://assets.ctfassets.net/ucu418cgcnau/32ufyOQrIVPevk1S5WcSQK/2b072efaf3986cfcba1d4785726098fd/D2-5_A_Comparison_of_AC_Level_1_and_2_Charging_-_EPRI_IWC.pdf.

because they can deliver a full battery charge in approximately 30 minutes, depending on the type of EV, battery size, and state-of-charge, which is similar to fueling an ICE at a gas station. DCFCs are particularly important for users such as fleet vehicles, long-distance highway drivers, and rideshare drivers who need to return to their routes quickly. Compared to L2 charging stations, DCFCs are more expensive to install and have a more intense power demand.

Connector Types: It is worth noting that not all EVs on the road are compatible with all chargers and station types, as a result of automakers making different choices regarding the use of disparate industry standards for charging equipment and connectors. SAE J1772 connectors are generally compatible with all EV, while only some EVs can be charged with CHAdeMO or SAE CCS Combo connector types for DCFC. Tesla HPWC and Supercharger connections are only compatible with Tesla models.[92] Additionally, PHEVs commercially available today cannot use DCFC. Given these differences, the mix of charging types needed will continue to evolve according to the stock of EVs on the road.

[92] ChargeHub, "2020 Guide On How To Charge Your Electric Car With Charging Stations," 2020. Available at: https://chargehub.com/en/electric-car-charging-guide.html.

Appendix E. Evergy's Transportation Electrification Experience

E.1 Clean Charge Network

At the time of the Clean Charge Network (CCN) launch in 2015, Evergy provided the largest utility-owned and operated public network of EV charging stations in the country. The Company's vision when launching the CCN was to address the barriers to widespread electric vehicle (EV) adoption by establishing a network of public charging stations to help address range anxiety and charging access concerns.

In the five years since the CCN launched, Evergy observed significant growth in EV adoption, charging session, energy consumption, unique drivers, and charging utilization. Today, the CCN supports more than 8,000 EVs in operation across the entire Evergy service territory, which represents a 620% increase compared to a 2014 baseline prior to the program's launch.[93]

To date, approximately 50% of CCN EV charging stations have been installed at locations that primarily support driver workplace charging. Approximately 42% of stations have been installed at retail and other public venues, and 8% of CCN EV chargers have been installed at multi-family locations.

E.2 Partnerships and Collaborations

Evergy works with customers to support their transportation electrification (TE) efforts. This includes transit agencies, commercial fleets, and individual EV drivers. Evergy also recognizes the value of sharing knowledge with other utilities and organizations pursuing TE in some way. Evergy staff participate in industry working groups, present information in public forums, and respond to inquiries about Evergy's experience.

In addition, as mentioned in this report, Evergy is partnering with other utilities through the Midwest Memorandum of Cooperation. Other partners to this memorandum of cooperation include Ameren Missouri, Ameren Illinois, Consumers Energy, DTE Energy, and Oklahoma Gas and Electric, demonstrating the growing support across the region for further TE actions by utilities.

E.3 Evergy Fleet Commitments

Evergy recognizes the value of leading by example, as well as testing technology with our customers. Evergy's own fleet electrification goal is that 100% of new light-duty vehicle purchases by 2030 will be electric. In addition, Evergy plans to electrify 35% of its overall vehicle fleet including light-duty, medium-duty, and heavy-duty vehicles by 2030.

[93] Based on EPRI vehicles in operation data, as of September 2020.

E.4 Building Awareness

Evergy has significant experience educating and building awareness among customers to support EV adoption. Since the launch of the CCN, Evergy has found that education is one of the most impactful activities that a utility can do, as the Company is well-connected to customers and able to fill a knowledge and education gap about EVs and EV charging that few parties can offer. Select activities that demonstrate Evergy's experience are summarized below.

E.4.1 CCN Website and Advertising

When designing the digital website and advertising opportunities for the launch of the CCN, it became clear there was not a one-stop-shop where online visitors — in Kansas City and elsewhere — could get a full picture of the idea of driving electric and gain information about available models. While there are many excellent online resources about EVs, some are too technical for the typical consumer, some focus on a specific vehicle and not the full breadth of options available, and some share information but not in a consumer-benefit focused fashion. Evergy deployed microtargeting to direct the ads to reach those already in the car-buying cycle. Tactics included Gmail sponsored ads (on a charge-per-click basis), Cars.com ads, paid search, automotive site retargeting, and sponsored Facebook posts. The team supplemented these digital efforts with a bill insert, kiosk advertisements in the busy Power & Light District and a digital billboard.[94]

E.4.2 Dealer/Manufacturer Partnerships

To continue the education outreach started in the CCN's first year, Evergy conducted a training program to educate salespeople at local dealerships on the CCN, tax discounts, and EV selling tips. Store-front and waiting room advertising materials supplemented the training, and dealerships who became Clean Charge "certified" could earn financial incentives for selling all-electric cars. The CCN also capitalized on a long-term partnership with Nissan, becoming the first utility in the country to offer a manufacturer level group buy discount on the new Nissan LEAF. This Nissan-funded program, which offered KCP&L customers $10,000 off the retail price, sold 211 Nissan LEAFs in a five-month period. For reference, five LEAFs were sold in the region the previous entire year. The campaign was deemed so successful that Nissan rolled it out to other utilities across the country.[95]

E.4.3 Community Events

Though its primary focus is on drivers already in the buying cycle, Evergy continues to seed the pipeline by building awareness about the idea of driving electric at community and corporate events. Outreach activities include mini electric car shows at the Kansas City River Market, Earth Day fairs and weekend-long festivals.

Evergy realized early on that EV drivers are a valued resource in the outreach arsenal. These individuals are passionate, incredibly knowledgeable about the specifics of driving electric, and willing to go above and beyond to help share information about EVs. The Evergy communications team developed a CCN affinity group and have continually engaged EV drivers.

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[94] KCP&L, "Ahead of the Charge: How KCP&L Helped Transform Kansas City into an EV Mecca," 2018. Available at: https://cleanchargenetwork.com/wp-content/uploads/2018/10/CCN-White-Paper.pdf.
[95] *ibid*

Appendix F. Stakeholder Letters of Support

Wichita Transit
CITY OF WICHITA

December 28, 2020

Kansas Corporation Commission
1500 SW Arrowhead Road
Topeka, KS 66604

Re: Letter of Support for Case #
Evergy Transportation Electrification Proposed Programs

Dear Chairwoman Duffy and Commissioners:

On behalf of the City of Wichita and Wichita Transit, we submit this Letter of Support as a customer in the above-captioned proposal, and a ready recipient of the benefits and vision behind Evergy's Transportation Electrification proposal.

Wichita Transit provides public transportation services to the community of Wichita, Kansas.

Wichita Transit currently operates eleven 100% battery-electric buses with plans to operate additional battery-electric buses in the future. Our current initiatives include further electrification of the Wichita Transit bus fleet and additional investment in our facilities to include the design and construction of a multimodal center that features electric vehicle charging for both buses and personal automobiles.

We are confident in the success of Evergy's proposal because it includes the following:

- Further development of innovative partnerships that have proven valuable to our organization
- Develops customer-centric solutions to overcome the barriers to EV adoption
- Creates infrastructure solutions that optimize grid benefits for our future transit facilities
- Fuel and cost of ownership savings that translate to more efficient use of our public funding
- Lowering emissions, creating a safer and more desirable environment for the community

We strongly endorse Evergy's proposal and urge your serious consideration for approval. We appreciate and look forward to seeing Evergy's implementation of the proposed transportation electrification program and the benefits that it will provide to program participants, customers, and Kansas residents.

Thank you for your consideration.

Sincerely,

Mike Tann
Director of Transit

Cc: Nick Voris, Evergy

CLIMATE ACTION KC

www.climateactionkc.com
info@mkccac.org

ClimateActionKC

February 3, 2021

Kansas Corporation Commission
1500 SW Arrowhead Road
Topeka, KS 66604

Re: Letter of Support for Evergy's Transportation Electrification Proposed Programs

Dear Chairwoman Duffy and Commissioners:

Climate Action KC (CAKC) is dedicated to supporting the expansion of electric vehicle infrastructure and incentives throughout the Kansas City metropolitan region. In our regional Climate Action Plan, CAKC prioritizes expansion of EV charging infrastructure, improving access to low-income communities, and municipal fleet electrification. While we know that more concentrated, mixed land use is critical to reducing vehicle-related emissions, electric vehicle technology has the potential to greatly reduce emissions produced by the transportation sector. Emissions modeling by the Mid America Regional Council (MARC) indicates that electrification of 75% of our passenger and freight vehicles would reduce greenhouse gas emissions by 35% from 2015 levels.

To effectively support the efficient electrification of public and private vehicles, accessible charging infrastructure needs to be deployed effectively throughout the region. Thanks to ongoing public, private, and utility investments, the electric vehicle network across the Kansas City region covered by Evergy has grown substantially in recent years, but gaps remain in the system, especially in lower-income communities and neighborhoods. Continued growth of this system, paired with Evergy's recent commitment to increasing electricity generated by renewable energy sources, ensures that more of our communities stand to benefit from access to clean technology and infrastructure. Reducing fossil fuel emissions generated by passenger vehicles and electricity production also reduces low atmosphere smog (particulate, ozone, nitrogen oxide, and other heavy chemicals), which yields two important results: improving the health of our citizenry through reductions in asthma and other respiratory illnesses, and reducing the urban heat-island effect, which is one of the greatest climate change risks to our region.

CAKC supports identifying and prioritizing EV charging station opportunities and potential funding sources and supports direct incentives for electric vehicles on the local, state, and federal level. As an equitable consideration, CAKC supports purchase incentives for used and new EVs and EV carsharing to increase access to low-income communities. Expanding charging infrastructure to underserved communities should be prioritized after extensive neighborhood engagement, outreach, and input.

CAKC further supports educating public agencies about funding opportunities for alternative fuel vehicle purchasing and encourages the submission of applications for this funding. Additionally, CAKC supports informing local governments about purchasing electric vehicles through the Kansas City Regional Purchasing Cooperative (KCRPC).

We appreciate your consideration of these priorities and look forward to working together as a region toward these shared goals.

With Gratitude,
The Climate Action KC Executive Board

600 Broadway, Suite 200
Kansas City, Missouri 64105-1659

816-474-4240
816-421-7758 FAX
www.marc.org

MARC
MID-AMERICA REGIONAL COUNCIL

January 20, 2021

Kansas Corporation Commission
1500 SW Arrowhead Road
Topeka, KS 66604

Re: Letter of Support for Evergy's Transportation Electrification Proposed Programs

Dear Chairwoman Duffy and Commissioners:

The Mid-America Regional Council (MARC) Air Quality Forum, created in accordance with Section 174 of the Clean Air Act to coordinate the development and implementation of air quality policy in the Greater Kansas City region, offers this letter of support for Evergy's Transportation Electrification proposal.

According to the Kansas City Regional Greenhouse Gas Inventory, on-road transportation accounts for 34% of all greenhouse gas emissions. And, we know that transportation contributes significantly to regional ozone pre-cursor emissions and particulate matter in the region, a detriment to the public health of residents. The vision underlying Evergy's Transportation Electrification proposal directly addresses these concerns and is highly aligned with the vision and strategy of MARC's Clean Air Action Plan (2018), Smart Moves 3.0: Regional Transit and Mobility Plan (2017), the Connected KC 2050 Regional Transportation Plan (2020) and the regional Climate Action Plan (2021). All of these plans call for aggressive electrification of the fleet—including personal, municipal, transit and commercial vehicles—to meet critical greenhouse gas mitigation targets and further improve the quality of the air we breathe. The current pace of electrification is slow, which we believe is partially attributable to the costs of upgrading home electric circuits, costs of installing charging stations, and caps limiting Evergy's expansion of the Clean Charge network.

We believe that Evergy's proposal represents a critical step towards fleet electrification which will enhance air quality, promote economic development, reduce transportation and energy costs, take advantage of existing grid flexibility, improve the equity of access to charging infrastructure and advance community resilience.

We strongly endorse Evergy's proposal and urge your serious consideration for approval. We appreciate and look forward to the implementation of this proposal and the benefits that it will provide to program participants, customers, and Kansas residents.

Thank you for your consideration.

Sincerely,

Scott Burnett
County Legislature, Jackson County, Missouri
Missouri Co-Chair, MARC Air Quality Forum

Angela Markley
Commissioner, Unified Government
of Wyandotte County/Kansas City, Kansas
Kansas Co-Chair, MARC Air Quality Forum

Cc: Nick Voris, Evergy

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Rob Roberts
Commissioner
Miami County,
Kansas

1st Vice Chair
Jimmy Odom
Commissioner
Cass County,
Missouri

2nd Vice Chair
Harold Johnson Jr.
Commissioner
Unified Government
of Wyandotte County/
Kansas City, Kansas

Treasurer
Eileen Weir
Mayor
Independence,
Missouri

Secretary
Carson Ross
Mayor
Blue Springs,
Missouri

Executive Director
David A. Warm

Department of Commerce
1000 S.W. Jackson St., Suite 100
Topeka, KS 66612-1354

Phone: (785) 296-3481
Fax: (785) 296-5055
KansasCommerce.gov

David C. Toland, Secretary

Laura Kelly, Governor

February 1, 2021

Kansas Corporation Commission
1500 SW Arrowhead Road
Topeka, KS 66604

Re: Letter of Support for Evergy Transportation Electrification Proposed Programs

Dear Chairwoman Duffy and Commissioners:

On behalf of the Kansas Department of Commerce, we submit this Letter of Support as a stakeholder in the above-captioned proposal, and a potential recipient of the benefits and vision behind Evergy's Transportation Electrification proposal.

As the state's lead economic development agency, the Kansas Department of Commerce strives to empower individuals, businesses and communities to achieve prosperity in Kansas. Our work focuses on growing and diversifying the Kansas economy and we believe the programs described by Evergy in this filing support our work.

We are confident in the success of Evergy's proposal because it includes the following:

- Lower emissions for customers and the community
- Represents a valuable strategic vision for economic development purposes
- Ensures benefits of transportation electrification are equitably distributed
- Serves diverse customer use cases informed by market demand
- Will allow customers to reduce their costs and emissions
- A more flexible grid and potential downward pressure on rates.

We are encouraged by Evergy's proposal and urge your consideration for approval. We appreciate and look forward to seeing Evergy's implementation of the proposed transportation electrification program and the benefits that it will provide to program participants, customers, and Kansas residents.

Thank you for your consideration.

Sincerely,

William P. Murphy, CEcD
Deputy Secretary, Business Development

Cc: Nick Voris, Evergy

Metropolitan ENERGY CENTER

transforming energy use in America's Heartland since 1983

January 28, 2021

Kansas Corporation Commission
1500 SW Arrowhead Road
Topeka, KS 66604

Re: Letter of Support for Evergy Transportation Electrification Proposed Programs

Dear Chairwoman Duffy and Commissioners:

On behalf of Metropolitan Energy Center, I submit this Letter of Support as a stakeholder in the above-captioned proposal and a ready advocate for the benefits and vision behind Evergy's Transportation Electrification proposal.

Our mission is to create resource efficiency, environmental health, and economic vitality in the Kansas City region and beyond. We provide resources, outreach, and training to make energy efficiency and alternative fuels commonplace.

Through our Central Kansas and Kansas City Regional Clean Cities Coalitions, we work to reduce petroleum use in transportation across the state. Transportation electrification is an important part of that work.

We are confident in the success of Evergy's proposal and we will directly benefit because the program includes the following:

- Lower emissions and improved air quality for customers and the community
- Valuable opportunities for regional clean technology jobs and economic development
- Service for transit, freight and consumer transportation needs informed by market demand
- Allows customers to reduce their transportation costs and emissions
- Creates the potential for a more flexible grid and downward pressure on rates

We strongly endorse Evergy's proposal and urge your serious consideration for approval. We appreciate and look forward to seeing Evergy's implementation of the proposed transportation electrification program and the benefits that it will provide to program participants, customers, and Kansas residents.

Thank you for your consideration.

Very truly yours,

Kelly M. Gilbert
Executive Director
kelly@metroenergy.org

cc: Nick Voris, Evergy

Bridging The Gap

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BNIM Architects

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www.bridgingthegap.org

Founded 1992

Printed on recycled paper.

January 28, 2021

Kansas Corporation Commission
1500 SW Arrowhead Road
Topeka, KS 66604

Re: Letter of Support for Evergy Transportation Electrification Proposed Programs

Dear Chairwoman Duffy and Commissioners:

Bridging The Gap (BTG), an environmental non-profit serving Kansas and Missouri since 1992, is pleased to submit this Letter of Support as a stakeholder and strong supporter of Evergy's Transportation Electrification proposal. BTG's mission is to "connect environment, economy and community" through a broad range of programming: restoring tree canopies and prairies, recycling, installing energy and water efficiency devices in homes, and maintaining green infrastructure for stormwater management.

Bridging The Gap is deeply involved in climate change planning for the region, serving on several committees for Climate Action KC, founded by two Kansas officials, Mayor Mike Kelly of Roeland Park, KS and Councilwoman Lindsey Constance of Shawnee, KS. Bridging The Gap also serves on the Climate Protection Plan Steering Committee for the City of Kansas City, Missouri. Bridging The Gap is deeply committed to electrification of all vehicles as a key means of reducing the greenhouse gas emissions which are driving climate change. In Kansas, the state's vast wind power potential, combined with electrification of vehicles described in Evergy's proposal, offers the potential for emission-free automobile transportation.

We strongly support Evergy's proposal because it will:

- Create lower emissions for customers and the community, not only reducing greenhouse gases, but air pollution and pulmonary disease in Kansas
- Ensure that benefits of transportation electrification are equitably distributed
- In the long run, allow customers to reduce their costs
- Provide a more flexible grid and potential downward pressure on rates

We urge your serious consideration for approval of this proposal, which offers so many benefits to Kansas, and would point out that our region is fortunate to be home to the leading utility company in the country in vehicle electrification. We appreciate and look forward to seeing Evergy's implementation of the proposed transportation electrification program and the benefits that it will provide to program participants, customers, and Kansas residents.

Thank you for your consideration.

Sincerely,

Kristin Riott
Executive Director
(816) 561-1066
Kristin.riott@bridgingthegap.org

Cc: Nick Voris, Evergy

City of Roeland Park
4600 W. 51st Street
Roeland Park, KS 66205
(913) 722-2600

February 1, 2021

Kansas Corporation Commission
1500 SW Arrowhead Road
Topeka, KS 66604

Re: Letter of Support for
Evergy Transportation Electrification Proposed Programs

Dear Chairwoman Duffy and Commissioners:

In my role as Mayor of Roeland Park, Kansas, I submit this Letter of Support as a municipal leader and a ready partner the benefits and vision behind Evergy's Transportation Electrification proposal.

Our city is dedicated to providing efficient and effective infrastructure that promotes sustained growth, connects neighborhoods and centers, is aesthetically pleasing, environmentally sound and meets the current and future needs of the community. Evergy's proposal helps meet these goals. Roeland Park is the home of the first electric vehicle charging station in the State of Kansas and has dedicated itself to replacement of fleet vehicles with electric vehicles. It is installing an EV charging carport to support this electrical fleet.

I am confident in the success of Evergy's proposal because it includes the following:

- Lower emissions for customers and the community
- Ensures benefits of transportation electrification are equitably distributed
- Supports a more flexible grid and potential downward pressure on rates

I strongly endorse Evergy's proposal and urge your serious consideration for approval. I appreciate and look forward to seeing Evergy's implementation of the proposed transportation electrification program and the benefits that it will provide to program participants, customers, and Kansas residents.

Thank you for your consideration.

/s/ Mike Kelly
Mayor Mike Kelly

February 10, 2021

Kansas Corporation Commission
1500 SW Arrowhead Road
Topeka, KS 66604

Re: Letter of Support
Evergy Transportation Electrification Proposed Programs

Dear Chairman French and Commissioners:

Overall

I have had a chance to review both the high-level overview and the specific program components of an imminent filing by Evergy to the Commission for transportation electrification (TE) infrastructure. We strongly support these programs and urge the Commission to approve these programs in a timely way after the review by Staff and constructive engagement with EV-related stakeholders.

The Alliance for Transportation Electrification, a 501(c)(6) non-profit corporation, is led by utilities, electric vehicle (EV) infrastructure firms and service providers, automobile manufacturers, and EV charging industry stakeholders and affiliated trade associations. We started with 20 organizations at the launch in early 2018. By taking a "big tent" approach to advance the industry, we have grown rapidly to include about 50 national dues-paying members and affiliated organizations. We are actively involved in over twenty regulatory and other state proceedings around the country today.

At a high-level, these two filings build on the leadership position nationally that KCP&L (predecessor to Evergy) has established in the Kansas City metro area through its Clean Charge Network (CCN), and related initiatives. It invested early, and invested well in EV infrastructure programs that met the needs of its customers and the communities. We at the Alliance often hear questions about the "chicken and egg" dilemma, or "build and they will come" challenge that regulators pose to us and other EV advocates who engage around the country on EV-related issues. But for Evergy, that question was settled several years ago, and with the multiple public announcements of General Motors and other OEMs on more EV product offerings, the utility is in a good position to use this foundational infrastructure to build out further to meet the needs of customers and vehicle growth in the near future.

Second, in these filings, Evergy aims to target some of the charging gaps by end use in its service territories, and to allow customers outside of the metro areas to build out EV infrastructure in less served areas. Since over 80 percent of the residential charging is done at home, it is critical to have a viable and robust resident charging program and encourage smart charging in off-peak hours. Similarly, for the business and commercial customers, including fleets, it is important to target their specific needs with rebates, TOU (rates), and use of technology to achieve managed charging.

Finally, the guiding principles enunciated by Evergy are sound and reflect the best practices of other utility filings in other jurisdictions. Broadly speaking, those design principles are: lower long-term customer costs, reduce emissions, deliver economic benefits, support customer goals, increase long-term grid flexibility, and drive equitable outcomes. As regulated utilities who are obligated to serve all customers regardless of income and geography, it is vital that Evergy design its programs to ensure that the overall benefits of beneficial electrification can be accessed by all customers to their benefit as ratepayers. They should also provide environmental benefits through reduced emissions of CO2 and other air pollutants that enhance public health, and promote a vibrant transportation and automotive industry increasingly integrated with electric power companies. The Evergy filings meet those tests.

Specific Comments

The structure of these filings is based on various rebate programs and levels, by end use, which has proven to be an effective way of providing incentives to the third-party competitive market and vendors of EVSE (electric vehicle supply equipment) and network operators. The level of rebates for the residential sector are scoped at 50 percent or up to $500 with a limit of one rebate per residence, which is consistent with other jurisdictions such as Michigan and Minnesota. For the commercial sector, the rebates are $2,500 per port for Level 2, and $20,000 per port with per location caps ranging from $25,000 to $65,000. Importantly, these rebates will cover both the EVSE and the necessary make-ready infrastructure, which will be built out by Evergy to the stub where the equipment sits. Again, these rebate levels reflect the current cost structure in the industry, and best practices in other jurisdictions; if anything, they are scoped at the lower end of the rebate spectrums.

The overall budgets for the rebate programs, customer education and program administration are reasonable, and reflect the differing circumstances and current state of infrastructure in the two States. Over five years, a budget of $12.8 million is established for Missouri, while a budget of $19.3 million is set for Kansas. This illustrates the significant amount of work already invested in the Kansas City metro area and Missouri locations over the past several years through KCP&L, and the relative lack of infrastructure on the Kansas side. It is important that this difference in EV infrastructure readiness be resolved in the near future given the large amount of new vehicles coming in to the fleet in the next few years, especially in the light truck and SUV vehicle types.

Besides range anxiety, customer surveys and research indicate that one of the leading barriers to greater EV adoption is the lack of consumer awareness. Even in some of the leading EV adoption States, the level of consumer awareness is still surprisingly low. The utilities can play a key role, along with the OEMs, dealers, NGOs, and others in the EV ecosystem, in helping to raise awareness of the consumer benefits of electrification through web portals, ride and drives, and other means. The Alliance recently did a joint white paper on this subject of what we call "E&O" (education and outreach) by the utilities which can be accessed on our website (Plug in America and Alliance for Transportation Electrification), "The Missing Piece on Meeting Transportation Electrification Goals: Utility Education and Outreach Programs." Available at: https://evtransportationalliance.org). The Evergy filings call for reasonable budget E&O activities which build on its earlier work in energy efficiency products and programs, and generally using the "trusted energy advisor" relationship in this regard.

Moreover, the CCN program have proven to be successful and the foundation of EV charging infrastructure that enables engagement with vendors and third-party service providers as well who

bring new technology and software to the utility. We urge you to support the expansion of the CCN in Kansas.

Finally, we urge the Commissions to consider building regulatory flexibility, with accountability of course, into the regulatory process over the next five years since the EV markets and technologies are changing rapidly. The relative costs of EV charging infrastructure are expected to continue to decline in the future, but the analysis of utilization of the EVSE and charging infrastructure is quite use-case specific. As with other new technologies, such as lighting equipment such as CFLs, then LED bulbs, heat pumps, and perhaps grid-connected water heaters, neither the utility or outside expert can predict exactly the load profiles, utilizations, and grid impacts of these new technologies today as they are purchased by customers, host sites and integrated in the grid. General rate cases, or specific rate filings as this one, sometimes takes many months and sometimes over a year to resolve issues with stakeholders and Commission staff, and ultimately decisions by Commissioners. For EV programs and infrastructure, a more flexible and streamlined approach should be considered for the revisions of programs and re-allocation of budgets, within certain guard rails, over this five-year period.

In summary, thank you for the opportunity to provide some early comments on these important regulatory filings which accelerate the pace of infrastructure for transportation electrification. We look forward to engaging with further comments and answer any questions during the regulatory review and decision-making process in the weeks ahead.

Sincerely,

Philip B. Jones

Philip B. Jones, Executive Director
Alliance for Transportation Electrification
1402 Third Avenue, Ste. 1315
Seattle, WA 98101

cc: Matt Dority, Director of Regulatory Affairs, Evergy

Appendix G. Witness Details

Testimony Report – Witness Details			
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Testimony Report – Witness Details		
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Appendix A	Detailed Program Descriptions: ETS Rate, BEVCS Rate	Brad Lutz
Appendix B	Program Tariff Sheets: TE Rebates	Nick Voris
Appendix B	Program Tariff Sheets: ETS, BEVCS	Brad Lutz
Appendix C	Cost Effectiveness Evaluation	Ambika Coletti (ICF)
Appendix D	Technology Overview	Ed Hedges
Appendix E	Evergy's Transportation Electrification Experience	Kimberly Winslow
Appendix F	Stakeholder Letters of Support	Nick Voris
Appendix G	Witness Details	All witnesses

Evergy Transportation Electrification Portfolio Filing Report

Updated May 5, 2021

Accelerating Transportation Electrification in Kansas

Evergy's proposed transportation electrification filing represents an investment aimed at supporting EV adoption for the benefit of all customers. Over five years, Evergy seeks to empower customers with electrification solutions that leverage carbon-free resources to improve the environment, lower long-term energy costs, and enhance grid operation, with a focus on access, affordability, and durability of solutions.

EVs Benefit All Customers

- LOWER LONG-TERM ENERGY COSTS
- REDUCED EMISSIONS
- ECONOMIC BENEFITS
- GRID FLEXIBILITY
- SUPPORT CUSTOMER GOALS
- DRIVE EQUITABLE OUTCOMES

By the Numbers

5 PROGRAM YEARS

NEW REBATES **3**

2 NEW TOU RATES

TOTAL KS INVESTMENT **$19.3M**

$72M KS METRO TOTAL CUSTOMER BENEFITS

KS CENTRAL TOTAL CUSTOMER BENEFITS **$47M**

OF EVS ESTIMATED IN TERRITORY:

Jurisdiction	Sept. 2020	2025
KS Central	1,997	11,967
KS Metro	3,030	14,471

Evergy's proposed filing addresses a broad range of TE customer needs

REBATES

Residential ★
- Homeowners/Renters
- Developers/Builders

Commercial ★
- Highway Corridor
- Workplace
- Multifamily
- Fleet
- Public Charging

RATES

Off-Peak Incentives ★
- Electric Transit Service Rate
- Business EV Charging Service Rate

OTHER

Customer Education & Outreach ★

Clean Charge Network
- Highway Corridor
- Underserved

★ *Indicates a new TE program component for Evergy*

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Public

Terminology

Abbreviations

AC	alternating current
BEB	battery electric bus
BEV	battery electric vehicles
BEVCS	Business EV Charging Service (rate)
CCN	Clean Charge Network
DC	direct current
DCFC	DC fast charging
EPRI	Electric Power Research Institute
ETS	Electric Transit Service (rate)
EV	electric vehicle
EVSE	electric vehicle supply equipment
EVSP	electric vehicle service providers
ICE	internal combustion engine
KCATA	Kansas City Area Transportation Authority
KCC	Kansas Corporation Commission
kW	kilowatt
kWh	kilowatt-hour
LGA	Large General Service-Space Heating (rate schedule)
LMI	low- and moderate-income
L1	AC Level 1 charging
L2	AC Level 2 charging
PHEV	plug-in hybrid electric vehicle
REC	renewable energy credit
TMTA	Topeka Metro Transit Authority
TCO	total cost of ownership
TE	transportation electrification
TOU	time-of-use (rate)
V	volt

Definitions

Battery density – The functional energy density stored in a battery pack for use in a battery electric vehicle. As battery density increases, EVs can travel longer distances before recharging without requiring larger, heavier batteries to achieve the same distance range. BloombergNEF reports that battery density in EVs tripled between 2010 and 2020 and battery prices have declined as density increased.[1]

Battery electric vehicle (BEV) – A type of vehicle that is only powered through a battery pack. It must be charged by electric vehicle supply equipment.

CCS Combo – The trade name of the DCFC connector used by most U.S. and German automakers. The connector supports L2 and DCFC charging by incorporating the SAE Standard J1772 connector with two additional DC contacts for high-power DC charging.

CHAdeMO – The trade name of a DCFC connector originally developed and used by five major Japanese automakers.

Charge port – Commonly refers to the EV connector component of the EV charging equipment. EV charging stations may provide one or more EV connectors.

Charging station – Commonly used to refer to a permanently mounted EVSE device as well as a location with multiple chargers (e.g., gas station).

Clean Charge Network (CCN) – The Evergy owned and operated electric vehicle charging network that includes more than 900 public charging stations. There are currently 29 CCN stations in the Kansas Central jurisdiction, 267 in Kansas Metro, 393 in Missouri Metro, and 244 in the Missouri West jurisdiction.[2]

Demand charges – Charges within an electric rate structure, based on the customer's peak capacity usage, traditionally used to recover the nonfuel costs of generation and transmission. The charges often scale proportionately with the highest power capacity (kW) drawn by a user during any given 15-minute period over the course of a billing cycle and can depend on the time of day that the demand occurs (peak or off-peak). Demand charges are commonly charged to commercial and industrial customers to incentivize these customers to level out their load and avoid steep increases in usage that could overload the distribution system.[3]

DC 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 EV charging station with three phase 480V (AC) input. DCFC is typically used for high-speed public charging applications.

Electric vehicles (EV) – The collective term used for battery electric vehicles and plug-in hybrid electric vehicles.

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[1] Bloomberg New Energy Finance (BloombergNEF), "Electric Vehicle Outlook 2020," 2020. Available at: https://about.newenergyfinance.com/electric-vehicle-outlook/.
[2] Clean Charge Network (CCN) station totals as of February 2021.
[3] National Association of Regulatory Utility Commissioners (NARUC), "Electric Vehicles (EVs): Key Trends, Issues, and Considerations for State Regulators," October 2019, p. 26. Available at: https://pubs.naruc.org/pub/32857459-0005-B8C5-95C6-1920829CABFE.

Electric vehicle service providers (EVSP) – Companies that produce and operate EV charging networks.

Electric vehicle supply equipment (EVSE) – An industry term for equipment that communicates with and supplies electric power to the electric vehicle. EVSE is often referred to as the 'charger.' The EVSE may be a permanently mounted device or a plug-connected cord-set provided by the EV manufacturer.

Level 1 AC charging (L1) – A level of EV charging that supplies charging power (1.4-1.9 kW) at 120V AC through a SAE Standard J1772 connector. L1 charging is commonly accomplished with a manufacturer provided cord-set plugged into a standard wall outlet. L1 charging is often used in residential applications and occasionally workplace applications.

Level 2 AC charging (L2) – A level of EV charging that supplies charging power (3.8-19.2 kW) at 208V or 240V AC, typically 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. L2 charging is often used for residential, workplace, and public charging applications.

Low- and moderate-income (LMI) – Households experiencing individual or combined household earnings at or below the eligibility threshold for the Low Income Energy Assistance Program (LIEAP) in Kansas.

Make-ready infrastructure – Customer-side facilities between the utility meter and EVSE required to install new EV charging equipment.

Plug-in hybrid electric vehicle (PHEV) – A type of vehicle that is powered through an electric motor and internal combustion engine. The electric battery is recharged through external EV charging equipment, or EVSE.

Time-of-use rate (TOU) – Type of rate used by utility companies to bill customers based on when they use electricity. The cost of energy per kilowatt hour (kWh) varies based on the period when electricity is used.

Total cost of ownership (TCO) – The capital and operating costs of an asset over the asset's lifespan. EVs typically are more expensive than an ICE vehicle to purchase upfront, but offer lower fuel, service, and maintenance costs over the lifespan of the vehicle, which offers a potentially lower TCO than an ICE.

Transportation electrification (TE) – The use of electricity from external sources of electrical power, such as the electrical grid, for all or part of vehicles, vessels, trains, boats, or other equipment that are mobile sources of air pollution and greenhouse gases and the related programs and charging and propulsion infrastructure investments to enable and encourage this use of electricity.[4]

[4] California Public Utilities Commission, "Public Utilities Code §237.5," January 1, 2016. Available at: https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?lawCode=PUC&sectionNum=237.5.

1. Introduction and Portfolio Summary

Evergy (also referred to as the "Company") is on the cusp of a transformational period of change to create a stronger and more capable grid for the future and to deliver greater value and benefits for all customers and stakeholders. Through the Company's Sustainability Transformation Plan, Evergy intends to make investments in critical utility infrastructure and unlock significant operational efficiencies that keep customer electricity rates competitive. Over the next five years, Evergy expects to upgrade transmission and distribution infrastructure to improve reliability, lower operating costs, provide customers further access to renewable energy, and enhance the customer experience. These investments will further ensure that the grid is ready to power the expected growth of electric vehicles (EVs) in Kansas.

Transportation electrification (TE) refers to the transition from automotive vehicles primarily powered by internal combustion engines (ICE) to vehicles powered partially or fully by electricity. Like many utilities across the country, TE presents an opportunity for Evergy to serve its customers, better manage the grid, and maximize the benefits of electrification for all stakeholders. While early adopters have contributed significantly to the EV technology transition, mass market EV adoption requires intentional investment by utilities to ensure underserved communities are able to access EV benefits.

Evergy's cost effectiveness evaluation finds that EV adoption results in a net benefit for all Evergy customers, not just EV drivers. Specifically, the Company estimates a net present value (NPV) of approximately $72 million in benefits to Kansas Metro customers and $47 million in benefits to Kansas Central over the next 10 years (2021-2031), assuming a medium EV adoption scenario and a low incremental vehicle cost.

This report outlines Evergy's request for TE programs and rates to support EV adoption, enable off-peak charging, educate customers and other key stakeholders, and inform Evergy's future efforts to maximize the benefits of TE for all customers. Evergy's proposed portfolio includes (1) rebates to encourage the installation of Level 2 (L2) charging in existing homes, (2) rebates to developers to install L2 charging in the construction of new homes, (3) rebates to incent installation of commercial EV charging infrastructure by third parties, (4) rates that encourage off-peak fleet and commercial EV charging, (5) customer education and program administration for the proposed programs and rates and (6) additional charging stations to build on the success of Evergy's Clean Charge Network (CCN).

A summary of each proposed program, rate, and requested regulatory treatment is included in Section 4 with additional details in Appendix A. Proposed tariffs for these programs and rates are included in Appendix B. Cost effectiveness evaluations demonstrating benefits for all customers are described in Section 3.4 and Appendix C.

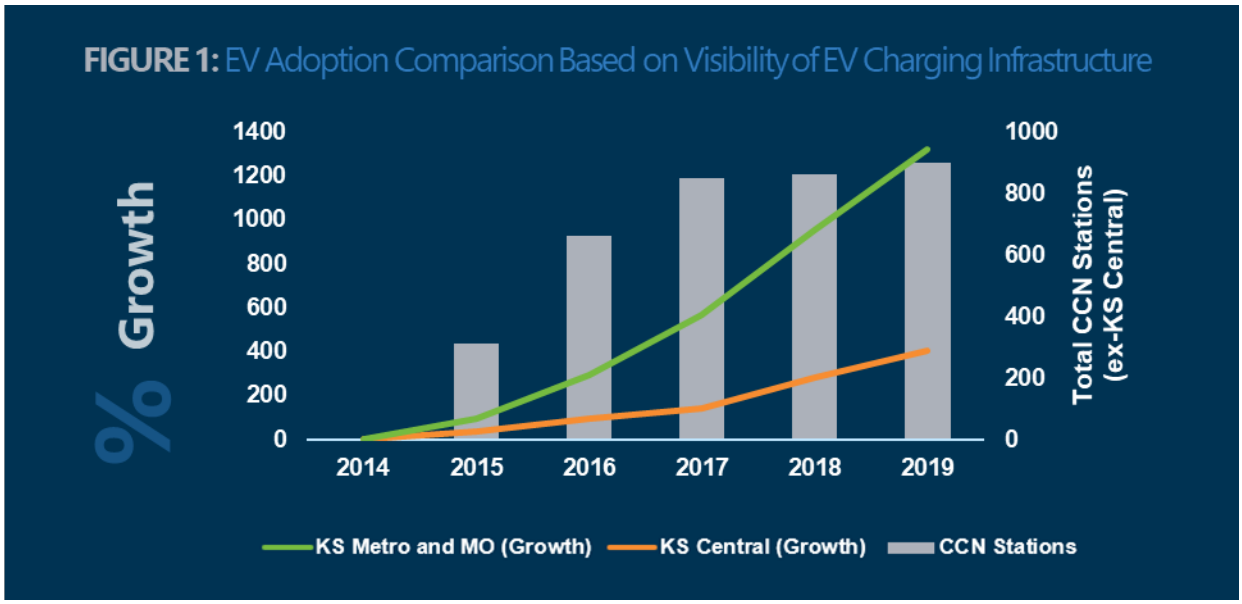
1.1 Evergy's Role and Experience with Transportation Electrification

Evergy's proposed TE portfolio builds upon the success of the Company's current TE programs and customer offerings. Evergy has a history of accelerating EV adoption in its service territory. Evergy has accomplished this in many ways, which include partnering with regional transit agencies to support electrification, deploying time-of-use (TOU) rates that favor both customers and the grid, and developing robust and award-winning website and marketing materials for its CCN. Evergy's biggest success with respect to TE to date has been the CCN, which highlights Evergy's commitment to beneficial TE. With the launch of approximately 1,000 EV charging stations in 2015, Evergy made a name for itself as a leader in the EV charging

space.[5] The Company's proposed portfolio will build on the successes of the CCN by further supporting EV market growth and Evergy customer needs, which will continue to expand as EVs become viable for new vehicle categories such as medium- and heavy-duty vehicles.

Evergy's proposed programs and rates are informed by the Company's involvement serving customers who have taken bold steps as early adopters of EVs. Evergy has learned from these early use cases and has applied these lessons and additional industry knowledge to the proposed portfolio design. For example, it is important that Evergy continue to educate customers on the benefits of managed charging. The proposed rebates and rates pave the way to customer-managed charging, which is an important step towards a future that includes utility-managed EV charging.

Evergy's extensive experience with the CCN corroborates industry studies that link local EV adoption to the presence of a robust public charging network.[6] In the past six years, Evergy has installed more than 900 stations in its Missouri and Kansas Metro jurisdictions as part of its CCN build-out.[7] The Kansas Central jurisdiction has very few charging stations, making it a helpful baseline for comparison of EV growth. As shown in Figure 1, Evergy's Kansas Metro and Missouri jurisdictions realized a threefold growth rate in passenger vehicle EV adoption compared to the Kansas Central jurisdiction.[8]



Evergy is uniquely positioned to support its customers, remove barriers to EV adoption, and directly invest in the deployment of TE solutions. The Electric Power Research Institute

[5] CCN, "Kansas City Leads Country in EV Growth." Available at: https://cleanchargenetwork.com/kansas-city-leads-country-in-electric-vehicle-growth-with-kcpl-clean-charge-network/.

[6] National Renewable Energy Laboratory (NREL) analysis concluded that DCFC will be needed every 3 miles in urban areas and every 70 miles along highway corridors to sufficiently support EV adoption.
U.S. Department of Energy (DOE), "National Plug-In EV Infrastructure Analysis," September 2017. Available at: https://www.energy.gov/sites/prod/files/2017/09/f36/NationalPlugInElectricVehicleInfrastructureAnalysis_Sept2017.pdf.

[7] The CCN was developed and launched prior to the merger of Kansas City Power and Light (KCP&L) and Westar, and therefore the CCN is largely represented in legacy KCP&L jurisdictions (Missouri West, Missouri Metro and Kansas Metro). As of February 2021, these three jurisdictions have 904 stations within the CCN, whereas Kansas Central (legacy Westar) has fewer than 30 charging stations.

[8] Evergy Kansas Metro and Missouri jurisdictions realized a 1300% rate of growth since 2014 compared to Kansas Central 400% rate of growth.

(EPRI) projects that, under a medium adoption scenario, the total number of EVs in Evergy's Kansas service territory will grow to 26,438 by 2025 and 77,369 by 2030.[9] Given these projections and Evergy's overall responsibility for grid management, it is critical for Evergy to be proactively engaged to support the next wave of EV customers, understand and plan for possible future grid-level challenges, and maximize benefits for all customers.

This proposed portfolio represents the next step in this long-term engagement with Evergy's customers and is designed to further many of these goals. For example, the proposed rate tariffs are structured to address emerging load profiles for customers such as public transit fleets, commercial vehicles, and workplaces. In so doing, Evergy is better able to align costs with cost causation and encourage "grid friendly" charging practices.

1.2 The Benefits of Transportation Electrification

TE presents a wide range of benefits, including lower costs, greater grid flexibility, reduced emissions, and a variety of local economic benefits. At the same time, recent announcements by major automakers like General Motors clearly signal a serious commitment toward electrified transportation.[10] Rather than being reactive, Evergy's proposed TE portfolio aligns with the Company's grid modernization plans and promotes grid-friendly integration of EVs through incentives and customer education. Looking ahead, this portfolio will provide valuable insights that inform Evergy's future TE initiatives, planning approaches, and other grid management activities.

1.2.1 Lower Total Energy Costs

The growing cost advantages of electrification produce both direct benefits for EV owners/operators and indirect benefits for other Evergy customers. Direct benefits include the annual fuel and maintenance cost savings of an EV within Evergy's territory. While there is currently an upfront cost premium of several thousand dollars to purchase a passenger EV compared to an ICE vehicle (depending on the vehicle and without applying purchase incentives), the costs to own and operate an EV are lower due to reduced maintenance needs and lower fuel costs.[11] For example, in Kansas, electricity is about half the cost of gasoline on a gallon equivalent basis.[12] The corresponding lifetime fuel cost savings of an EV compared to an ICE range from $7,000 to $12,800.[13]

Beyond the direct benefits realized by EV owners, TE has the potential to reduce long-term costs for all customers by spreading the utility's fixed costs across a wider base of sales. Cost effectiveness evaluations are included in this filing and estimate the net cost or benefit of passenger EV adoption from three perspectives: the Evergy customer, participant (i.e., EV driver), and societal. The results of these evaluations (detailed in Section 3.4) show **net benefits from all perspectives** including a customer benefit estimated at approximately $1,680 per EV in the Kansas Metro jurisdiction and $970 per EV in Kansas Central.

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[9] Electric Power Research Institute (EPRI) EV projections use the methodology outlined in "Plug-in EV Market Projections: Scenarios and Impacts," Report 3002011613 (December 2017). EPRI calibrates projections based on county-level EV registration data.
[10] New York Times, "General Motors Will Sell Only Zero-Emission Vehicles by 2035," January 28, 2021. Available at: https://www.nytimes.com/2021/01/28/business/gm-zero-emission-vehicles.html.
[11] Argonne National Laboratory (ANL), "Alternative Fuel Life-Cycle Environmental and Economic Transportation (AFLEET) Tool 2019," accessed January 25, 2020. Available at: https://greet.es.anl.gov/afleet.
[12] DOE, "eGallon," accessed December 29, 2020. Available at: https://www.energy.gov/maps/egallon.
[13] ANL, "AFLEET Tool 2019," accessed January 25, 2020. Available at: https://greet.es.anl.gov/afleet.

1.2.2 Increased Grid Flexibility

Managing and maintaining the grid to serve customers safely, reliably, and affordably is a core responsibility for Evergy. The regional generation mix is becoming increasingly reliant on intermittent generation from renewable sources such as wind and solar.[14] As fossil fuels continue to decrease in the regional generation mix, Evergy can more effectively utilize wind resources at night by shifting EV charging load off-peak to align with periods of low-cost wind generation.

Utilities should enable customers to manage their charging and incentivize the shift of charging to off-peak periods when the grid is underutilized, which increases system efficiency, increases utilization of off-peak capacity, and helps to mitigate the impact of EV-related demand. An EPRI and Evergy analysis on the impact of managed charging with residential TOU rates shows that the charging load consumed during the system peak hour is reduced to less than 40% of the load resulting from unmanaged charging.[15] Evergy, in its last rate case, introduced a TOU pilot rate as an option for residential customers.[16] Incentives like the TOU rate can help EV drivers shift their home charging to off-peak times, which can enable better grid management.

1.2.3 Reduced Emissions

ICE vehicles emit varying amounts of particulate matter (PM) and ozone-forming nitrogen oxides (NOx), which are known to cause or exacerbate respiratory and cardiovascular diseases. Since plug-in hybrid electric vehicles (PHEVs) have fewer tailpipe emissions than ICEs and battery electric vehicles (BEVs) have zero tailpipe emissions, EV adoption can reduce the negative health effects and environmental degradation caused by emissions from the transportation sector. Notably, these effects can be amplified in low-income and disadvantaged communities, which are often situated along major traffic corridors and thus exposed to greater amounts of transportation related pollution.[17]

In addition to the above benefits, the lifecycle carbon emissions of EVs are less than those from comparable ICE vehicles.[18] FuelEconomy.gov estimates that a 2020 Chevy Bolt operating in Kansas produces about 60% less carbon dioxide than the average new gasoline vehicle.[19] With Evergy's commitment to reduced carbon emissions and expanded generation from renewable sources such as wind and solar, charging on Evergy's grid has the potential to be even less carbon intensive.[20]

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[14] Evergy, "Our Energy Mix." Available at: https://www.evergy.com/smart-energy/renewable-resources/our-energy-mix.

[15] EPRI, "KCP&L CCN: Phase 2 Analysis and Valuation of PEV Adoption." 2018. 3002012248, p. VIII.

[16] See KCC Case No. 18-WSEE-328-RTS (Westar/EKC) and Case No. 18-KCPE-480-RTS (KCP&L/EKM).

[17] Center for Climate and Energy Solutions (C2ES), "Electrified Transportation for All: How Electrification Can Benefit Low-Income Communities," November 2017. Available at: https://www.c2es.org/site/assets/uploads/2017/11/electrified-transportation-for-all-11-17-1.pdf.

[18] ANL, "Cradle-to-Grave Lifecycle Analysis of U.S. Light-Duty Vehicle-Fuel Pathways: A Greenhouse Gas Emissions and Economic Assessment of Current (2015) and Future (2025-2030) Technologies," June 1, 2016. Available at: https://afdc.energy.gov/files/u/publication/cradle_to_grave_report.pdf.

[19] FuelEconomy.gov, "Greenhouse Gas Emissions from Electric and Plug-in Hybrid Vehicles," accessed January 25, 2021. Available at: https://www.fueleconomy.gov/feg/Find.do?action=bt2.

[20] Evergy, "Evergy Announces Plan to Reduce Carbon Emissions 80 percent, Adds 660 megawatts of Wind Energy to its Portfolio," January 30, 2020. Available at: https://www.evergy.com/about-evergy/newsroom/2020/january/evergy-announces-plan-to-reduce-carbon-emissions.

1.2.4 Economic Benefits

The deployment of EVs across Evergy's territory is a powerful tool for spurring direct economic benefits for the region. The following are several examples of these benefits:

- Nearly all cash benefits of investing in EV charging infrastructure stay within the state, while most investment related to ICE vehicle usage leaves the state.[21]
- Direct fuel savings to EV owners are realized locally, as are the economic benefits of generating and delivering electricity via the local distribution grid for EVs.
- Local infrastructure deployment of EV charging stations will generate employment opportunities for local installers, contractors, and electricians.
- As the second largest auto manufacturing hub in the country, growing demand for EVs will drive benefits to the greater Kansas City region.[22] For example, Ford recently announced it is investing $100 million in its Kansas City Assembly Plant and adding 150 full-time jobs to manufacture the electric E-Transit van.[23]
- The ability to accommodate interstate EV travel will increase economic activity in Kansas. Retail, food service, and other local businesses may attract new business from EV drivers while they take advantage of direct current fast charging (DCFC) stations along highway corridors and other locations.[24]

1.3 Evergy's Proposed Transportation Electrification Portfolio Summary

Evergy's proposed TE portfolio will provide benefits that include lower customer costs over time, reduced emissions, economic benefits, support of customer goals, increased grid flexibility, and a focus on equitable outcomes as described in Section 3.3. In this filing, Evergy submits for approval the following portfolio elements and requests:

- **Residential customer and developer rebates** to support more efficient home EV charging and to prepare homes for an EV future. Evergy requests that the Kansas Corporation Commission (KCC or "the Commission") approve a five-year budget to fund these rebates. See Sections 4.1 and 4.2 for more details.
- **Commercial rebates** to support investment in charging infrastructure by third parties for a range of EV use cases and locations. Evergy requests that the Commission approve a five-year budget to fund these rebates. See Section 4.3 for more details.
- **Commercial TOU EV rates** that serve the load profiles of electric transit fleets and commercial fleets and charging sites, offer more predictable and lower fuel costs for EV customers, and align rates with the costs of delivering power. The proposed rates will remain in effect unless changed in future rate cases. See Sections 4.4 and 4.5 for more details.
- **Customer education and program administration,** which includes efforts to encourage the adoption of EVs and to support Evergy customers in making informed decisions as they navigate the EV transition, as well as manage the rebate programs and rate offerings. See Section 4.6 for more details.

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[21] King, Chris, "The Untold Story of the Economic Benefits of EVs," February 14, 2020. Available at: https://www.linkedin.com/pulse/untold-story-economic-benefits-electric-vehicles-chris-king/?articleId=6579408416211636225.
[22] Kansas City Area Development Council, "Automotive Manufacturing." Available at: https://thinkkc.com/business/industries/automotive-manufacturing.
[23] Ford Motor Company, "Ford Taps Kansas City to Assemble All-Electric Ford E-Transit; Build Out $3.2B North American EV Manufacturing Footprint," November 10, 2020. Available at: https://media.ford.com/content/fordmedia/fna/us/en/news/2020/11/09/ford-kansas-city-all-electric-ford-e-transit.html.
[24] Atlas Public Policy, "Public EV Charging Business Models for Retail Site Hosts," April 2020. Available at: https://atlaspolicy.com/wp-content/uploads/2020/04/Public-EV-Charging-Business-Models-for-Retail-Site-Hosts.pdf.

- Authorization to use a **deferral accounting mechanism** to track program costs (incentive rebates and other program costs such as customer education and program administration) for recovery of prudently incurred costs in future rate cases through expense amortization over a period of five years. See Section 4.7 for more details.
- Request that the Commission find that it is prudent from a decisional perspective for Evergy to move forward with its **limited and targeted CCN expansion plans for Kansas** announced in this filing. See Sections 4.7 and 4.8 for more details.

Table 1 provides a five-year proposed budget outlined by jurisdiction:

Table 1: Proposed Five-Year Portfolio Budget

PROGRAM COMPONENT	KS METRO	KS CENTRAL	KS TOTAL
Residential Customer EV Outlet Rebate	$.85M	$.70M	$1.6M
Residential Developer EV Outlet Rebate	$.05M	$.05M	$.1M
Commercial EV Charger Rebate	$8.9M	$6.5M	$15.4M
Customer Education and Program Administration	$1.5M	$1.1M	$2.6M
$ TOTAL	$11.3M	$8.4M	$19.7M

Summaries of the new rebate programs and rates are in Appendix A. Proposed tariffs for the rates and programs are included in Appendix B.

2. Transportation Electrification Growth Trends

In response to accelerating EV adoption and overall EV market growth, utilities and regulatory commissions across the country are demonstrating that utilities have a role and responsibility to invest in TE efforts that benefit all customers, the electricity system, and the public. According to the Edison Electric Institute, Evergy is among 48 utilities across 29 states and the District of Columbia that have received regulatory approval to invest more than $2.6 billion in TE programs as of June 2020.[25] These investments are intended to support the deployment of approximately 4,400 DCFC stations and 144,000 L2 chargers, among other TE efforts.[26]

When Evergy launched the CCN in 2015, the Company was at the forefront of domestic utilities that recognized the need and benefits of utility support for transportation electrification. Since then, many other utilities have pursued sizable transportation electrification programs. For example, the Colorado Public Utilities Commission recently approved Xcel Energy's $110 million transportation electrification plan, which will install up to 20,000 charging stations, provide EV charging infrastructure rebates, add EV rates, and offer customer programs to manage new charging load.[27] In New Jersey, Public Service Electric & Gas Company was approved to spend $166 million over six years to support EV charging infrastructure development across residential, commercial, and highway corridor locations.[28]

As illustrated above, recently approved programs and portfolios vary, but typically include one or more of the following elements: customer incentives (e.g., rebates) for charging infrastructure; utility investment in charging infrastructure; rate design; and customer education and outreach. Ultimately, whether packaged together or pursued individually, these activities seek to reduce barriers for customers, support increased TE, and provide utilities with valuable insights to inform future activities. While Evergy's filing is significantly smaller than these examples and somewhat conservative compared to a growing number of its peers, Evergy believes the size and scope of its filing is appropriate for the timeframe of this proposal given anticipated EV and charging infrastructure demand.

2.1 National EV Adoption

Cumulative EV sales nationwide surpassed 1.7 million as of December 2020, approximately one decade after models like the Nissan LEAF and Chevrolet Volt first entered the market.[29] Going forward, increased EV adoption will be driven by multiple factors, including expanding affordable vehicle model offerings, supportive policies and initiatives, growing consumer confidence resulting in-part from increased access to charging infrastructure, and increasing mainstream awareness of EV benefits.

While more than 50 light-duty EV models are already available for sale in the United States, recent announcements demonstrate automakers' increasing commitment to

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[25] Edison Electric Institute, "Electric Transportation State Biannual Regulatory Update: June 2020." https://www.eei.org/issuesandpolicy/electrictransportation/Documents/FINAL_ET%20Biannual%20State%20Regulatory%20Update_June%202020.pdf

[26] Atlas Public Policy, EV Hub, "Utility Filings Dashboard," accessed January 4, 2021. Available at: https://www.atlasevhub.com/materials/electric-utility-filings/.

[27] Xcel Energy, "2021-2023 Transportation Electrification Plan." Available at: https://www.xcelenergy.com/company/rates_and_regulations/filings/transportation_electrification_plan.

[28] Public Service Electric & Gas Company (PSE&G), "PSE&G Gains Approval to Jump-Start EV Charging in New Jersey," January 27, 2021. Available at: https://nj.pseg.com/newsroom/newsrelease208.

[29] ANL, "Light Duty Electric Drive Vehicles Monthly Sales Updates," December 2020. Available at: https://www.anl.gov/es/light-duty-electric-drive-vehicles-monthly-sales-updates.

electrification.[30,31,32,33,34] In addition, the Alliance for Automotive Innovation, a group representing auto makers producing 99% of the cars and trucks sold in the United States, announced that its members will invest $250 billion in vehicle electrification by 2023.[35] This lends further support for the expectation that by 2030, EVs on the road are projected to top 20 million (i.e., 20% of new U.S. car sales).[36]

In another sign of the rapid shift towards TE, states such as California and Massachusetts have taken steps to ban the sale of new ICE vehicles by 2035.[37] These actions build on existing state policy (i.e., zero emission vehicle standards) that require a certain percentage of vehicles offered for sale in a state to comply with specified emissions requirements. Adding to state-level policies and initiatives, President Biden's administration has recently signaled robust federal government support for EV market growth.[38]

As EVs become more attractive to mainstream vehicle owners through increased awareness of benefits and familiarity with the technology, some fleets and other users will look to electric options because of local, state, and federal policies that promote TE as a means of reducing greenhouse gas emissions. Beyond the light-duty market, there are an increasing number of electric options to replace transit buses, school buses, delivery vans, and other medium- and heavy-duty vehicles. Manufacturers such as Blue Bird, Ford, Lion, and Thomas Built produce electric school buses, while BYD, New Flyer, Proterra, Gillig, and other manufacturers offer transit bus options.[39] Notably, environmental benefits of TE and particularly medium- and heavy-duty electrification become even more significant as the electricity generation sector replaces fossil fuels with renewable energy sources such as wind and solar.

Finally, the growth of electrification can be attributed in part to increasing battery density and declining battery costs. The average battery density has increased at rates of 4-5% per year, which has also allowed for efficiency improvements.[40] For example, Model Year 2020 light-duty vehicles have a U.S. Environmental Protection Agency estimated range that exceeds

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[30] EV Adoption, "EV Models Currently Available in the US," accessed December 6, 2020. Available at: https://evadoption.com/ev-models/.

[31] By 2025 Volvo plans to limit its offerings to only hybrids and EVs and by 2030 Volkswagen intends to offer an EV version of all 300 of its models. Ford recently announced that it will invest $29 billion in autonomous vehicles and EVs through 2025, a dramatic ramp-up of its spending in those areas.

[32] Volvo Car Corporation, "The Future is Electric," 2020. Available at: https://group.volvocars.com/company/innovation/electrification.

[33] Reuters, "Volkswagen Accelerates Push into Electric Cars with $40 Billion Spending Plan," November 17, 2017. Available at: https://www.reuters.com/article/us-volkswagen-investment-electric/volkswagen-accelerates-push-into-electric-cars-with-40-billion-spending-plan-idUSKBN1DH1M8.

[34] Utility Dive, "Ford Bets $29B on Leading the 'Electric Vehicle Revolution," February 9, 2021. Available at: https://www.utilitydive.com/news/ford-bets-29b-on-leading-the-electric-vehicle-revolution/594782/.

[35] Utility Dive, "Carmakers in US to spend $250B on electrification by 2023, push for national standard, group says," February 10, 2021. Available at: https://www.utilitydive.com/news/carmakers-in-us-to-spend-250b-on-electrification-by-2023-push-for-nationa/594833/.

[36] Edison Electric Institute and Institute for Electric Innovation, "EV Sales Forecast and the Charging Infrastructure Required Through 2030," November 18, 2020. Available at: https://www.edisonfoundation.net/-/media/Files/IEI/publications/IEI_EEI-EV-Forecast-Report_Nov2018.ashx.

[37] E&E News, "Massachusetts Looks to Ban Gas Car Sales by 2035," January 8, 2021. Available at: https://www.eenews.net/climatewire/stories/1063722047/.

[38] The White House, "Executive Order on Tackling the Climate Crisis at Home and Abroad," January 27, 2021. Available at: https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/.

[39] DOE, Alternative Fuels Data Center (AFDC), "Alternative Fuel and Advanced Vehicles Search," accessed January 24, 2021. Available at https://afdc.energy.gov/vehicles/search/.

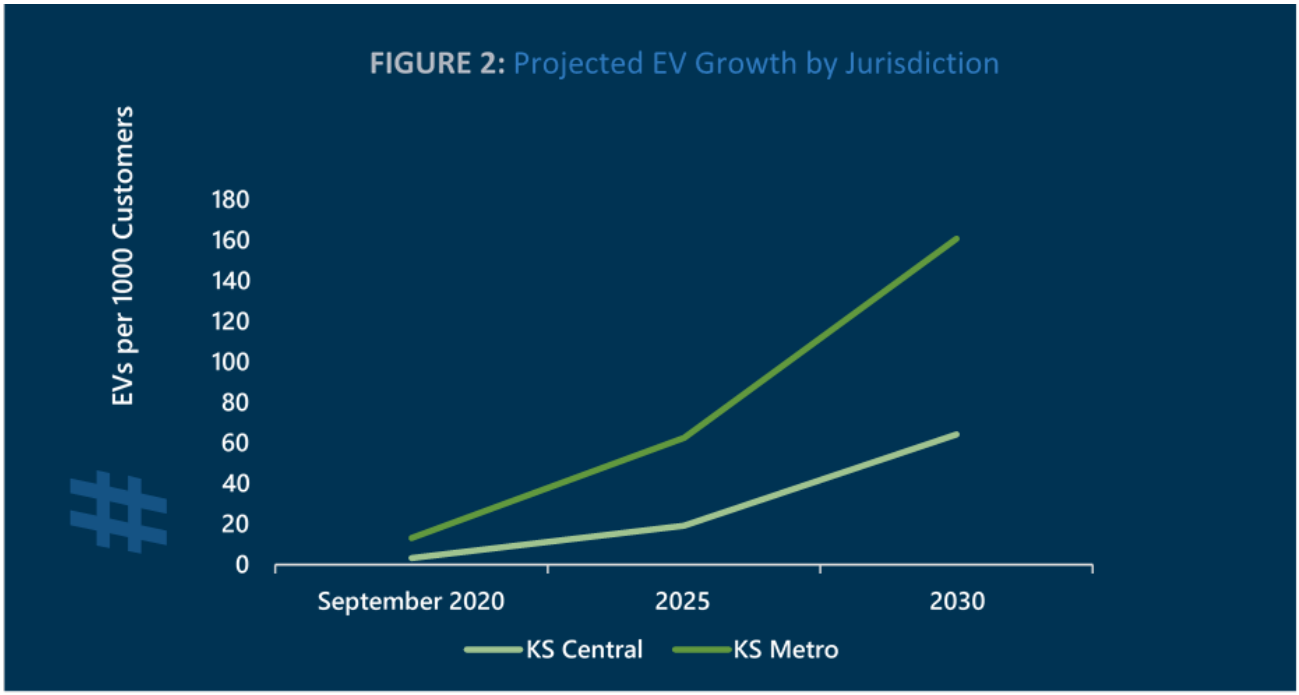
[40] BloombergNEF, "Electric Vehicle Outlook 2020," 2020. Available at: https://about.newenergyfinance.com/electric-vehicle-outlook/.

250 miles.[41] Meanwhile, battery costs fell 89% between 2010 and 2020, with the volume-weighted average reaching $126 per kilowatt-hour (kWh). By 2023, its estimated that the average battery cost will decrease an additional 20%.[42] Appendix D provides a more detailed overview of EV and charging technology.

2.2 Evergy Territory EV Adoption

In the context of national trends, Evergy customers find themselves with increasing options and considerations related to TE. Equipped with the lessons learned from its experience installing and operating the CCN, Evergy is well positioned to support customers along this journey.[43]

The number of light-duty EVs operating in the Kansas Central service territory was estimated to be 1,997 as of September 2020, with approximately 55% being BEVs and 45% PHEVs. EPRI projects that, under a medium adoption scenario, the total number will grow to 11,967 by 2025 and 40,123 by 2030.[44] Similarly, in Kansas Metro there were approximately 3,030 EVs on the road as of September 2020, with the same split between BEVs and PHEVs. EPRI's projections under a medium adoption scenario, suggest there will be 14,471 EVs by 2025 and 37,246 by 2030. Figure 2 illustrates the projected growth curves for each jurisdiction.



[41] DOE, "Fact of the Week #1167: Median Driving Range of All-Electric Vehicles Tops 250 Miles for Model Year 2020," January 4, 2021. Available at: https://www.energy.gov/eere/vehicles/articles/fotw-1167-january-4-2021-median-driving-range-all-electric-vehicles-tops-250.

[42] BloombergNEF, "EV Outlook 2020," 2020. Available at: https://about.newenergyfinance.com/electric-vehicle-outlook/.

[43] Refer to Appendix E for a detailed narrative of Evergy's CCN Experience.

[44] EPRI EV projections use the methodology outlined in "Plug-in Electric Vehicle Market Projections: Scenarios and Impacts," Report 3002011613 (December 2017). EPRI calibrates projections based on county-level EV registration data.

Evergy has consistently referenced EPRI's EV projections and sales data, specifically focusing on the medium adoption scenario. Evergy has found that, based on "look-back" comparisons between EPRI-provided projections and actual EV adoption statistics, EPRI's methodology is reasonable and projections have a high level of accuracy.

Looking beyond the light-duty market, battery electric buses (BEB) have seen increased attention and adoption in Evergy Kansas Central's service territory among the various transit authorities. Examples of current bus-related activities in Kansas include:

- In 2019, the City of Topeka received a grant award from the Federal Transit Administration's Low- or No-Emission (Low-No) Bus program to purchase three BEBs by 2022.[45,46]
- The City of Lawrence received a similar grant award in 2020 and has committed to purchasing five electric buses.[47,48]
- The City of Wichita was also a Low-No grant recipient and has committed to transitioning more than 50 buses in its fleet to electric by 2030. Currently, the City has 11 Proterra BEBs in service.[49]

[45] Federal Transit Administration (FTA), "Fiscal Year 2019 Low or No-Emission (Low-No) Bus Program Projects," March 17, 2020. Available at: https://www.transit.dot.gov/funding/grants/fiscal-year-2019-low-or-no-emission-low-no-bus-program-projects.
[46] The Topeka Capital Journal, "Topeka Metro gets $1.7M federal grant for electric buses," July 25, 2019. Available at: https://www.cjonline.com/news/20190725/topeka-metro-gets-17m-federal-grant-for-electric-buses.
[47] FTA, "Fiscal Year 2020 Low or No-Emission (Low-No) Bus Program Projects," August 6, 2020. Available at: https://www.transit.dot.gov/funding/grants/fiscal-year-2020-low-or-no-emission-low-no-bus-program-projects.
[48] The University Daily Kansan, "Lawrence City Commission Approves Switch to 98% Renewable Energy," June 10, 2020. Available at: https://www.kansan.com/news/lawrence-city-commission-approves-switch-to-98-renewable-energy/article_7b13f664-ab60-11ea-97b1-97905d876f34.html.
[49] The Wichita Eagle, "Why Wichita Says New Electric Buses Are Better Than Their Diesel Predecessors," October 25, 2020. Available at: https://www.kansas.com/news/business/article246275365.html.

3. Customer Benefits of Transportation Electrification

Evergy is committed to helping customers and stakeholders realize the benefits of TE and achieve their unique goals. Evergy's proposed TE portfolio was designed as a holistic approach to addressing barriers across the marketplace in support of achieving greater levels of EV adoption and benefits for all customers in the Company's service territory. As described below and summarized in Table 2, customers and stakeholders are interested in EV adoption for a variety of reasons.

- **Residential Customers** are interested in lower transportation and energy costs, incentives, and the environmental and health benefits of reduced vehicle noise and emissions.[50]
- **Commercial Customers** are interested in lower vehicle total cost of ownership (TCO), reduced noise and pollution, and support to meet their own sustainability and decarbonization goals.[51,52,53]
- **Municipalities** are interested in TE for greater economic development and workforce opportunities, environmental and health benefits of reduced vehicle noise and pollution, support of access to technology and energy services for underserved communities, and achievement of community sustainability and decarbonization goals.[54,55,56]
- **Regional organizations** are interested in TE to help achieve the region's clean energy and environmental goals, availability of funding to invest in EV adoption, opportunities to develop partnerships with new companies and organizations in a position to bring EV-related jobs to the area.[57]
- **Evergy** is interested in TE as an opportunity to engage more proactively and expansively with its customers to offer additional energy services, growth of flexible and beneficial load to support grid management activities, greater capacity utilization, and the achievement of environmental and clean energy goals.

[50] NREL, "Plug-in Electric Vehicle Showcases: Consumer Experience and Acceptance," July 2020. Available at: https://afdc.energy.gov/files/u/publication/pev_showcases_consumer_experience_acceptance.pdf.
[51] McKinsey and Company, "What's sparking EV adoption in the truck industry?" September 26, 2017. Available at: https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/whats-sparking-electric-vehicle-adoption-in-the-truck-industry.
[52] Ceres, "The Road to Fleet Electrification," 2020. Available at: https://www.ceres.org/sites/default/files/reports/2020-05/The%20Road%20to%20Fleet%20Electrification.pdf.
[53] Greenbiz, "Building the Business Case for Fleet Electrification," December 12, 2018. Available at: https://www.greenbiz.com/article/curves-road-fleet-electrification-sponsored.
[54] AFDC, "Massachusetts School Fleets Get Answers through Electric Bus Testing," July 17, 2020. Available at: https://afdc.energy.gov/case/3092.
[55] Bloomberg, "American Cities Drive Fleet Electrification Efforts Across United States," July 19, 2019. Available at: https://www.bloomberg.org/blog/american-cities-drive-fleet-electrification-efforts-across-united-states/.
[56] C2ES, "Greening City Fleets," November 28, 2018. Available at: https://www.c2es.org/2018/11/greening-city-fleets/.
[57] Climate Action KC, "Regional Climate Action Plan," January 2021. Available at: http://climateactionplan.cleanwaterkcmetro.org/wp-content/uploads/2021/01/Climate-Action-Plan-single-up_med-res.pdf.

Table 2: Common Customers & Stakeholder Interests in TE

	Clean Energy Targets	Environment & Health	Sustainability Goals	Economic Development	Cost Savings	Beneficial Load Growth
Residential Customers		✓			✓	
Commercial Customers		✓	✓		✓	
Municipalities		✓	✓	✓		
Regional Organizations	✓	✓	✓	✓		
Utility	✓	✓	✓	✓	✓	✓

Given the Company's ability to reach its customer base and across the community as an energy provider, Evergy believes it is well-positioned to ensure local TE investment is impactful and favorable to its customers and other stakeholders. The following sections provide more insight to many of the TE benefits introduced above.

3.1 Economic Benefits

The economic case for TE is strengthening by the year. The growing cost advantages of electrification produce both direct benefits for EV owners/operators and indirect benefits for other Evergy customers.

3.1.1 Total Energy Cost Benefits

Passenger EV owners and operators within Evergy's territory realize TCO savings. While there is currently an upfront cost premium of several thousand dollars to purchase a passenger EV compared to an ICE vehicle (depending on the vehicle and without applying purchase incentives), the costs to own and operate an EV are lower due to reduced maintenance needs and lower fuel costs.[58] For example, in Kansas, electricity is about half the cost of gasoline on a gallon equivalent basis.[59] The corresponding lifetime fuel cost savings of an EV compared to an ICE range from $7,000 to $12,800.[60]

Beyond the direct benefits enjoyed by EV owners, TE has the potential to reduce long-term costs for all customers. The results of Evergy's cost effectiveness evaluations (detailed in Section 3.4) show net benefits for Evergy customers, meaning that EV adoption can put downward pressure on rates as electricity consumption by EVs spreads the fixed costs of the utility across a wider base of sales. Additionally, EVs can be charged during off-peak periods when the grid is underutilized, which increases system efficiency, increases utilization of off-peak capacity, and helps to mitigate the impact of EV-related demand.

[58] ANL "AFLEET Tool 2019," accessed January 25, 2020. Available at: https://greet.es.anl.gov/afleet.
[59] DOE, "eGallon," accessed December 29, 2020. Available at: https://www.energy.gov/maps/egallon.
[60] ANL, "AFLEET Tool 2019," accessed January 25, 2020. Available at: https://greet.es.anl.gov/afleet.

3.1.2 Regional Economic Benefits

The deployment of EVs across Evergy's territory will contribute to direct economic benefits to the region in the form of employment, infrastructure spending, and greater demand for electricity and other goods and services at EV charging sites. As described previously, the direct fuel savings to EV owners are realized locally, as are the economic benefits of generating and delivering electricity for EVs via the local distribution grid.

Incentives, rebates, and other sources of state-provided funding for TE will also spur investment in the state. For example, Volkswagen (VW) Settlement funding is available for vehicle owners to receive vouchers to help purchase a new cleaner vehicle and retire their older and less efficient vehicles.[61] VW Settlement funding for EVs is complementary to Evergy's proposed program to help reduce the upfront cost of EV and charging station purchases not covered by the proposed rebates.

3.2 Sustainability Benefits

The emissions-reducing attributes of EVs make TE attractive to Evergy customers that have set goals related to sustainability (i.e., decarbonization, energy efficiency, clean energy, etc.). In addition to commercial customers, TE is being pursued by municipalities and other government entities that have established strategic energy and environmental goals. For example, the Kansas City Climate Action Playbook sets goals for participating cities.[62] Additionally, the Greater Kansas City Clean Air Action Plan establishes a goal to increase the use of EVs in the region to over 90,000 vehicles by 2028.[63] Beyond these regional initiatives, recent commitments to electrify U.S. federal fleet vehicles, such as the U.S. Postal Service fleet, may also lead to new EV growth in Evergy territory.[64]

As BEBs become increasingly more viable and attractive, cities and their public transit agencies are considering electrification or are already actively electrifying their bus fleets. As noted previously, several cities within Evergy's service territory have received federal grants to fund BEBs. In these cases, Evergy provided various types of support including grant application assistance and infrastructure needs assessments.

Additional examples of Evergy's fleet customers' commitments to electrification are detailed in their Letters of Support in Appendix F.

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[61] U.S. Environmental Protection Agency, "Volkswagen Clean Air Act Civil Settlement." Available at: https://www.epa.gov/enforcement/volkswagen-clean-air-act-civil-settlement.

[62] Climate Action KC, "Regional Climate Action Plan," January 2021. Available at: http://climateactionplan.cleanwaterkcmetro.org/wp-content/uploads/2021/01/Climate-Action-Plan-single-up_med-res.pdf

[63] Mid-America Regional Council Air Quality Program, "Greater Kansas City Clean Air Action Plan 2018 Update," 2018. Available at: https://www.marc.org/Environment/Air-Quality/pdf/CAAP2018Update.aspx.

[64] The White House, "Executive Order on Tackling the Climate Crisis at Home and Abroad," January 27, 2021. Available at: https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/.

Commercial Fleet Commitments

Several commercial fleets operating in Evergy territory have committed to electrify some or all fleet vehicles to support their corporate environmental sustainability goals. Evergy's TE offerings can bolster the business case for a variety of fleet electrification use cases, including:

Last-mile parcel delivery: Amazon has committed to electrify parcel delivery vans as part of sustainability goals to achieve zero-emission operations by 2040.[65]

EV trucks and retail charging: Walmart has committed to electrify 100% of its fleet by 2040, including Class 8 long-haul trucks. Walmart will also serve as a site host for public L2 and DCFC charging at store locations.[66]

Parcel delivery box trucks: UPS has committed to source 40% of ground fuel from low carbon or alternative fuels by 2025 and has ordered 10,000 electric vans from Arrival, and EV manufacturer.[67]

3.3 Equity Considerations

Lack of awareness of EV benefits and options, barriers to affording and accessing EVs, or the impracticality of EVs for the customer's use case have all contributed to low levels of EV adoption.[68] In this filing, a focus on underserved communities will help drive equitable outcomes across the Company's TE portfolio. Transportation costs including vehicle purchases, maintenance, and fuel constitute a larger portion of household expenses for low- and moderate-income (LMI) customers.[69] Therefore, the cost saving attributes of EVs will be even more beneficial for LMI households and communities served by EVs.

LMI customers who have less access to personal car ownership rely heavily on public transit and rideshare or transportation network companies (TNCs), many of which have committed to electrify their fleets.[70] For transit agencies like the Kansas City Area Transportation Authority (KCATA) that offer free bus fare, cutting operational costs by electrifying the fleet will be even more beneficial for LMI and underserved customers.[71]

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[65] Amazon, "Introducing Amazon's First Custom Electric Delivery Vehicle," October 8, 2020. Available at: https://www.aboutamazon.com/news/transportation/introducing-amazons-first-custom-electric-delivery-vehicle.
[66] InsideEVs, "Walmart to Electrify Entire Fleet By 2040," September 24, 2020. Available at: https://insideevs.com/news/445649/walmart-electrify-entire-fleet-by-2040/.
[67] United Parcel Service of America (UPS), "UPS Invests In Arrival, Accelerates Fleet Electrification With Order Of 10,000 Electric Delivery Vehicles," January 29, 2020. Available at: https://www.pressroom.ups.com/pressroom/ContentDetailsViewer.page?ConceptType=PressReleases&id=1580304360144-453.
[68] The Greenlining Institute, "EVs for All." Available at: https://greenlining.org/resources/electric-vehicles-for-all/.
[69] FTA, "Transportation Needs of Disadvantaged Populations: Where, When, and How?" February 2013. Available at: https://www.transit.dot.gov/sites/fta.dot.gov/files/FTA_Report_No._0030.pdf.
[70] Nature Energy, "Emissions Benefits of EVs in Uber and Lyft Ride-Hailing Services," June 29, 2020. Available at: https://doi.org/10.1038/s41560-020-0632-7.
[71] The Kansas City Area Transportation Authority (KCATA), "KCATA Wins Kansas Department of Transportation Innovation and Technology Grant to Improve Public Transit Integration," December 14, 2020. Available at: https://www.kcata.org/news/name_our_mascot_and_ride_free_in_2008/.

To drive equitable outcomes for all customers, Evergy considered the following customer needs in its design of the proposed TE portfolio:

- **Affordability** – Evergy's TE portfolio aims to reduce household and operating expenses for all customers by offering clean and reliable electricity as a transportation fuel.
- **Accessibility** – Evergy's TE portfolio unlocks new opportunities for Evergy customers to access EV mobility options and EV benefits.
- **Suitability** – Evergy's TE portfolio addresses real needs of EV customers and reflects the current and projected state of the market to support EV adoption.
- **Transparency** – Evergy's TE portfolio seeks to increase consumer awareness of EVs and ensure that all customers have accurate and up-to-date information to make decisions regarding EVs.

3.4 Cost Effectiveness of EV Adoption

Evergy's proposed TE portfolio is designed to support customers in electrifying the transportation sector with the goal of realizing the broader benefits of increased EV adoption in Evergy's Kansas service territory. To quantify these benefits, Evergy conducted cost effectiveness evaluations in partnership with ICF, one for each of the two jurisdictions: Kansas Metro and Kansas Central. ICF's methodology strives to estimate whether EV adoption is a net cost or a net benefit.

3.4.1 Cost Effectiveness Evaluation Results

The analyses conclude that **all Evergy customers benefit from increased EV adoption**, whether or not an EV driver. Specifically, ICF estimates a net present value (NPV) of approximately $47 million in benefits to Kansas Central customers over the next 10 years (2021-2031), assuming a medium EV adoption scenario and a low incremental vehicle cost. On a per vehicle basis, this benefit translates to approximately $970 per EV adopted in the Kansas Central service territory. Applying the same assumptions, results for Kansas Metro customers are $72 million NPV, or $1,680 per EV adopted. The analyses also show that increased EV adoption can yield even greater net societal benefits while also benefiting EV drivers.[72] Table 3 summarizes the cost effectiveness evaluation results by jurisdiction.[73] Refer to Appendix C for the cost effectiveness reports, which detail the assumptions and jurisdictional results.

[72] For the purpose of the cost effectiveness evaluation, a participant is an EV driver in the territory, not specifically those actively participating in one of Evergy's proposed programs.
[73] The results summarized here are based on a medium EV adoption scenario and a low incremental vehicle cost scenario.

Table 3: Cost Effectiveness Evaluation Results

KS CENTRAL	CUSTOMER BENEFIT	PARTICIPANT BENEFIT	SOCIETAL BENEFIT
Ratio	1.50	1.23	1.46
Net	$46,936,550	$67,684,112	$114,620,662
Benefit/EV	$971	$1,401	$2,372

KS METRO	CUSTOMER BENEFIT	PARTICIPANT BENEFIT	SOCIETAL BENEFIT
Ratio	1.80	1.16	1.52
Net	$72,344,433	$50,818,024	$123,162,458
Benefit/EV	$1,679	$1,179	$2,858

3.4.2 Cost Effectiveness Evaluation Methodology

ICF's cost effectiveness evaluation approach incorporates EV population projections and associated load, existing EV charging stations and projected infrastructure needs, technology assumptions (e.g., capital costs), and local market assumptions (e.g., electric rates).[74,75] ICF then applies three tests to allocate the inputs as costs or benefits in order to determine whether increased EV adoption results in net benefits to customers, participants, and society. Table 4 summarizes how the inputs and assumptions are treated in each test.

[74] Sourced from EPRI data provided by Evergy, updated September 2020.
[75] Charging infrastructure needs are modeled using formulas based on NREL's EVI-Pro Lite tool, available at https://afdc.energy.gov/evi-pro-lite.

Table 4: Cost Effectiveness Inputs & Assumptions

Inputs	Customer	Participant	Societal
Incremental Vehicle		Cost	Cost
Vehicle O&M Savings		Benefit	Benefit
Federal Vehicle Tax Credit		Benefit	Benefit
Gasoline Cost		Benefit	Benefit
Charging Infrastructure Costs	Cost	Cost	Cost
Electric Supply Costs (energy & capacity)	Cost		Cost
Retail Utility Bills for EV Charging	Benefit	Cost	

ICF's methodology includes several conservative assumptions. Of specific note is the assumption that public charging infrastructure costs (L2 and DCFC, inclusive of the charging equipment, make-ready, and installation) are borne by Evergy customers. In reality, local businesses and other third parties are likely to install meaningful charging infrastructure within Evergy's territory; indeed, Evergy's proposed TE portfolio includes components designed to incentivize that very outcome. In addition, Evergy's commercial line extension allowance may not always cover the entire upfront cost associated with charging station installation and would then require a customer contribution.

Another conservative facet of the cost effectiveness evaluation is that it does not include the potential benefits of improved utility load factor and avoided distribution costs through improved asset management associated with managed charging and other efforts to shift EV charging activity to off-peak periods. Even modest benefits from improved utility load factor and distribution asset management will likely offset any cost increases. Actively managing charging may also help decrease net societal costs by reducing the increased demand through better utilization of charging infrastructure.

It is important to note that this cost effectiveness evaluation does not include certain non-monetized benefits that are sometimes considered in the societal cost test, such as emission reductions. Further, the analysis does not seek to model the potential impacts of a single program, but rather the costs and benefits that may result from increased EV adoption. It is very difficult to attribute direct program impacts on the EV market as there are numerous complex factors that go into car buying and charging decisions. ICF's methodology is similar to the analyses other utilities have applied to model the impacts of TE, with a focus on the customer benefit.

While the results of the cost effectiveness evaluation support even greater investment in TE than proposed herein, this filing represents a meaningful step toward supporting beneficial TE in Evergy's service territory. As a company, Evergy can positively influence EV adoption

through this TE portfolio by offsetting a small portion of the total infrastructure investment required to support EV market growth over the coming years.

4. Proposed Transportation Electrification Portfolio

Evergy seeks to empower customers with electrification solutions that leverage carbon-free resources to improve the environment, lower customer costs, and enhance grid operation. Evergy's goal is to be forward-looking in its approach to TE and to target actions that deliver the greatest benefits to all customers, with a focus on accessibility, affordability, and durability of solutions.

Evergy believes the utility should play a role in enabling the benefits of TE for customers. To do this, Evergy will create customer-centric solutions to overcome the barriers to EV adoption, with a focus on increasing access to electric transportation options for underserved communities. Evergy will leverage its core competencies to facilitate infrastructure solutions that enable customer adoption and optimize grid benefits. Evergy will be able to better understand where EV charging is occurring on the system by identifying new load from customers receiving rebates and enrolling in EV-specific rates, which will enable further load analysis and inform future efforts to promote better grid management.

Table 5 provides a summary of the investment requested for the proposed programs and rates along with customer education and program administration, specified by jurisdiction:

Table 5: Proposed Five-Year Budget

Program Component	KS Metro	KS Central	KS TOTAL
Residential Customer EV Outlet Rebate	$.85M	$.70M	$1.6M
Residential Developer EV Outlet Rebate	$.05M	$.05M	$.1M
Commercial EV Charger Rebate	$8.9M	$6.5M	$15.4M
Customer Education and Program Administration	$1.5M	$1.1M	$2.6M
TOTAL	$11.3M	$8.4M	$19.7M

4.1 Residential Customer EV Outlet Rebate

Evergy proposes the Residential Customer EV Outlet Rebate for residential customers to reduce the cost of home EV charging. Evergy is targeting the residential sector because light-duty private EV ownership constitutes the majority of existing and projected EV adoption in the Evergy territory over the next five years. With approximately 80% of charging activity typically occurring at home, the residential sector is a strategic way to serve this segment of EV drivers.[76] This rebate aligns with Evergy's equity commitment by reducing the costs associated with installing an EV charger at home and supporting more efficient L2 charging that yields energy savings and reduces household transportation costs.

The Residential Customer EV Outlet Rebate incentivizes the installation of a 240V outlet at residential locations to enable L2 EV charging. Customers are eligible for one rebate per residence to cover 50% of the installation cost, up to $500 per outlet, to install a dedicated 240V circuit (40A or greater, including a NEMA 14-50 outlet). Customers apply for a rebate within six months of the installation of qualified equipment. Customers will complete an online application form and upload the necessary documentation, which will include dated installation receipts and proof of EV registration at the same address. At the time of application, customers will be encouraged to opt into the CCN for their public charging needs.

The Residential Customer EV Outlet Rebate will reduce the costs associated with L2 charger installation at home and provide customers with the ability to charge EVs in less time and with 7-15% less energy. Today, many EV drivers charge at home using the Level 1 (L1) cord-set provided with the EV.[77] The 240V outlet will enable drivers to use either their preferred charger or their vehicle's onboard charge management functionality.

The Residential Customer EV Outlet Rebate complements the EV driver's ability to utilize Evergy's existing TOU pilot rate, creating a foundation for future active charge management programs.[78]

Refer to Appendix A for a program summary, including the estimated rebate quantities. The proposed Residential Customer EV Outlet Rebate program tariff sheets are provided in Appendix B.

Common EV Charging Use Cases

Residential charging – EV charging equipment that is located at a single-family home intended to provide private charging service to the resident.

Public charging – EV charging equipment that is available to the general public or the customers of an establishment that is open to the general public, including but not limited to government facilities, libraries, parks, retail stores, and restaurants.

Fleet charging – Installed at a non-residential location and intended to provide charging service to fleet vehicles of the business that occupies the premise, but not to employees or the general public.

Highway corridor charging – Installed along interstate highways, state highways or other thoroughfares that connect and provide long-distance travel between population centers.

Multi-family charging – EV charging equipment that is located at a residential development with multiple leased or owned dwelling units intended to provide charging service to tenants and visitors, but not to the general public.

Workplace charging – EV charging equipment installed at a non-residential location intended to provide vehicle charging service to employees, visitors, or fleet vehicles of the business that occupies the premise, but typically not to the general public.

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[76] DOE, "Charging at Home." Available at: https://www.energy.gov/eere/electricvehicles/charging-home.
[77] *ibid*
[78] See KCC Case No. 18-WSEE-328-RTS (Westar/EKC) and Case No. 18-KCPE-480-RTS (KCP&L/EKM).

4.2 Residential Developer EV Outlet Rebate

Evergy proposes the Residential Developer EV Outlet Rebate to incentivize developers to pre-wire new homes with adequate circuit capacity to accommodate L2 EV charging by future residents. By targeting new homes, Evergy will ensure that homes are pre-wired for L2 EV charging, which will save customers the cost of upgrading later. In the absence of other mechanisms such as building codes that require EV-ready residential construction, the Residential Developer EV Outlet Rebate provides Evergy with an opportunity to partner with developers to future-proof the residential sector and prepare it for expected growth in demand for EVs. Accordingly, customer education and outreach activities associated with the Residential Developer EV Outlet Rebate will target developers and provide information about the benefits of installing infrastructure at the time of construction.

The Residential Developer EV Outlet Rebate incentivizes the installation of a dedicated 240V circuit (40A or greater, including a NEMA 14-50 outlet) to enable L2 EV charging. Developers are eligible for one $250 rebate per new home constructed according to these requirements. Developers will complete an online application form after the residence has been constructed and upload the necessary documentation to Evergy, which will include the address at which the installation occurred. Residential Developer EV Outlet Rebate program participants are limited to one rebate per residence. Third-party vendors or electric vehicle service providers (EVSPs) are not eligible for these rebates.

The Residential Developer EV Outlet Rebate supports Evergy's equity commitment by reducing the costs associated with enabling L2 EV charging at home. L2 charging allows most EVs to charge during off-peak hours and lowers household transportation costs for future homeowners because it is both faster and more efficient than L1 charging. In addition, by tracking EV-ready home addresses, Evergy expects to have the ability to anticipate where EV charging may occur on the system, which can enable further load analysis to support future grid management activities.

Refer to Appendix A for a program summary, including the estimated rebate quantities. The proposed Residential Developer EV Outlet Rebate program tariff sheets are provided in Appendix B.

4.3 Commercial EV Charger Rebate

Third parties are important contributors to the broader ecosystem of EV charging infrastructure as a complement to Evergy's role in owning and operating the CCN. Evergy proposes the Commercial EV Charger Rebate for third-party EV charging station installations at commercial locations across the Evergy service territory. While residential charging comprises most charging events for light-duty EVs today, the growing market requires an ecosystem of strategically located commercial EV charging sites to reduce range anxiety in drivers and to serve a variety of emerging EV use cases.

To serve these use cases, EV charging should be conveniently located at common destinations such as workplaces, fleet parking sites, public destinations such as retail sites, multi-family dwellings, and along highway corridors. The proposed Commercial EV Charger Rebates are aligned with Evergy's equity commitment by offering affordable and accessible EV charging at locations that meet the practical needs of the market. Among the commercial customers eligible for the Commercial EV Charger Rebates are public service fleets such as urban transit bus, school bus, municipal service fleets, paratransit, rural transit, and public assistance vehicles – all of which have broad benefits for underserved communities.

The Commercial EV Charger Rebates will reduce the costs associated with L2 and DCFC EV charging station installations at a variety of locations (highway, public, workplace, fleet, multi-family) by providing a rebate to cover the customer-side infrastructure and EV charger equipment costs. The program design will incentivize smart, network-capable chargers to enable controllable load management regardless of what type of L2 or DCFC charger is installed. These design considerations will also allow Evergy to collect and analyze charger utilization data for various use cases and better understand where EV charging is occurring on the system. Based on Evergy's review of projected EV growth and the associated infrastructure needs, the Company anticipates that a mix of L2 and DCFC, in addition to Evergy's CCN stations, will be needed at commercial locations to meet the requirements and usage patterns of EV drivers.[79] The rebate structure for each site type is summarized in Table 6.

Table 6: Commercial EV Charger Rebates by Site Type

Site Type	L2 Ports	DCFC Units	Maximum Rebate per Site
Highway	2	2	$45,000
Non-Highway Public	6	2	$55,000
Fleet/Workplace	10	2*	$65,000
Multi-Family	10	0	$25,000

**DCFC is eligible for rebates only in cases where the equipment serves fleet operations.*

Evergy will issue a request for information or request for proposals to develop a list of qualified L2 and DCFC chargers meeting the technical specifications (e.g., network-capable, ENERGY STAR certified L2, safety certification, managed charging capable) and will make the qualified equipment list available to applicants. Evergy will periodically accept submittals from other vendors and update the qualified equipment list for those suppliers that meet the qualifications. Eligible customers, including third-party EVSPs, may apply for a Commercial EV Charger Rebate after qualified equipment has been installed. Customers will complete an online application form and upload the necessary documentation, which will include dated EV charger installation receipts and proof of charger operation at the same address, to receive the rebate. Customers must provide Evergy with access to utilization data, install stations in dedicated EV parking spaces, and agree to participate in potential future demand response (DR) events, if deemed necessary, to minimize grid impacts. Evergy will require that customers provide documentation to prove that chargers have been installed within six months to receive the rebate and must provide documentation annually to demonstrate that EV charging station is

[79] Charging infrastructure needs were modeled using formulas based on NREL's EVI-Pro Lite tool.

operational for five years following the installation. Leased charging stations are eligible for the Commercial EV Charger Rebate with proof that the customer has executed an agreement for no less than five years.

The Commercial EV Charger Rebate complements the line extension allowance available for commercial developers, as illustrated in Figure 3.

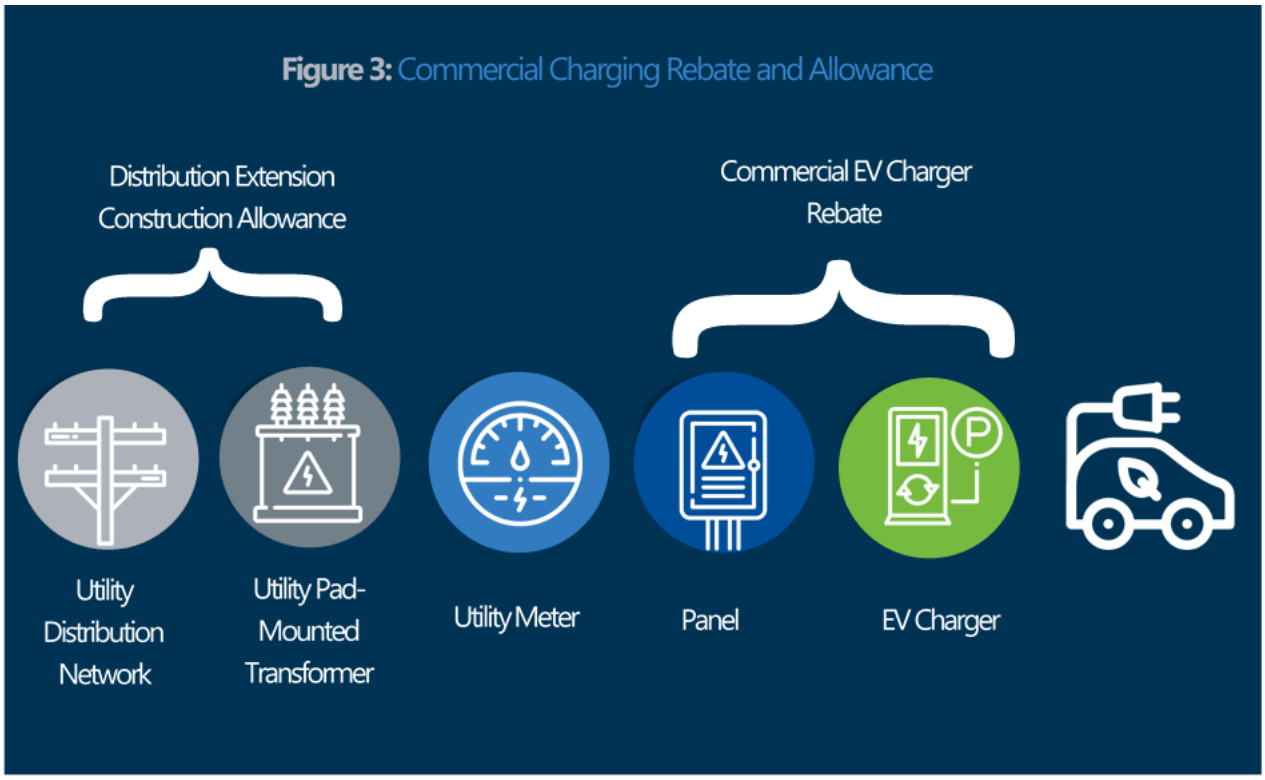

Figure 3: Commercial Charging Rebate and Allowance

A few of the lessons Evergy has learned through its experience with the CCN is the importance of clear and consistent signage, standardized site designs for both L2 and DCFC (i.e., standard requirements for parking lot installations versus wall mounts), and proactive site maintenance plans to ensure that charging stations are safe easy to use. Also, EV charging infrastructure deployment should allow for future expansion when possible. For example, ensuring that capacity upgrades at a location account for greater charging demand and different EV charging technologies will make it easier for the customer to expand in the future.

Many of these factors significantly impact the performance of the charging installations, station uptime, and customer satisfaction. Evergy intends to incorporate these best practices into the Commercial EV Charger Rebate program in the form of program guidance for customers.

Refer to Appendix A for a program summary, including the estimated number of charging ports resulting from the Commercial EV Charger Rebate program. The proposed Commercial EV Charger Rebate program tariff sheets are provided in Appendix B.

4.4 Electric Transit Service Rate

Evergy proposes a new Electric Transit Service (ETS) rate option for transit bus fleet customers in Kansas Metro to increase EV adoption in this vehicle segment, support transit customers in realizing the benefits of BEBs, and offer a rate similar to the existing Kansas Central tariff.[80] As BEB technology becomes increasingly viable, transit bus fleets in Evergy territory are interested in the advantages of improved TCO, operational benefits, and environmental advantages of BEBs. A favorable rate enables transit companies to calculate and compare their fuel costs, a major input into building the business case to purchase BEBs. The proposed transit rate will significantly improve the economics of transit fleet electrification.

The ETS rate aligns with Evergy's equity commitment by directly supporting the electrification of public transit buses, which will benefit underserved customers that rely on transit services and are more exposed to the emissions from diesel transit buses.

The ETS rate is a two-period TOU rate with a 12-hour off-peak period (6 p.m.-6 a.m.) that aligns with typical transit fleet depot charging patterns. The rate removes the demand charge, while retaining a small local facility demand charge to incentivize managed charging. Transit customers must separately meter their EV charging station to participate in the rate and all rate riders and surcharges will apply. Customers will work with their Evergy account manager to determine eligibility and enroll in the rate.

The ETS rate was developed to be revenue neutral with a commercial customer with similar annual consumption on the Large General Service-Space Heating (LGA) rate schedule. The ETS customer and facility charges are equal to the charges in LGA rate schedule. The ETS rate does not include a demand charge as Evergy will not incur any incremental generation and transmission capacity costs to serve these loads. The energy charges were determined by setting the off-peak energy charge equivalent to the third block of the LGA rate which typically represents "third shift" usage. This off-peak energy charge is relatively low but still exceeds Evergy's marginal energy cost. The on-peak energy charge was calculated such that the combination of customer, facility, on-peak, and off-peak energy charges is revenue neutral when compared to a LGA customer with similar annual consumption and the average LGA customer load profile. In this way, the rate design mirrors many features of existing LGA rate, while still meeting the anticipated needs of transit agencies for BEB charging.

In addition to an overall reduction in the cost of operations, most transit agencies expect fleet electrification to provide a reduction in their fleet's carbon emissions. Evergy has included a Carbon Free Energy Option in the ETS tariff for transit agencies that want their fleet's EV charging to be carbon free. Under this option, Evergy will procure renewable energy credits (REC) to offset energy provided from non-carbon free sources.

Evergy anticipates that no customers will immediately be served on the ETS rate and only a nominal amount of consumption is expected to be served pursuant to the rate in the near term. Therefore, any revenue impacts of this new offering will be negligible and will be less than if the load was served under a standard commercial rate. Evergy's objective is to establish the ETS rate as an incremental offering to meet the anticipated future transit needs of customers.

The ETS rate will encourage customers to shift EV charging to off-peak times while better aligning the cost of charging electric transit vehicles with the cost causation from the grid. The rate offers customers potentially lower and more predictable fuel costs for their EV transit fleets, which will help transit agencies justify an electric fleet conversion. The rate will also allow

[80] Evergy Kansas Central, "Electric Transit Service," approved November 24, 2020. Available at: https://www.evergy.com/-/media/documents/billing/kansas-central/other/electric-transit-service-01012021.pdf?la=en.

Evergy to better understand BEB charging patterns, which will enable further load analysis at a time when transit fleet electrification is expected to grow. The TOU rate also mitigates adverse grid impacts from new EV charging load, while increasing grid utilization at off-peak periods. Over time, this will have the effect of creating downward pressure on rates for all customers.

Evergy developed the ETS rate both in response to customer demand today and in anticipation of electrified transit market growth. Prior to Evergy Central's 2018 rate case, the Topeka Metro Transit Authority (TMTA) expressed its desire to purchase BEBs to diversify its fuel sources for its fleet. [81] TMTA sought a special electric rate to lower its electric fuel costs and improve the cost benefit analysis for electrification of its fleet. Evergy introduced in Kansas Central a new ETS tariff in the 2018 rate case that was designed to accommodate the unique charging pattern of transit fleets where the majority of charging would occur at night when parked at the depot. The current Kansas Central ETS tariff has no demand charge with the TOU energy charge.

Wichita Transit was the first transit agency to take service under the ETS tariff, receiving their first buses in December 2019. Transit agencies in Topeka and Lawrence have also begun their fleet conversion. This clearly illustrates that, with a tariff that reflects the unique charging patterns of BEBs, electric transit fleets can be cost competitive with conventional fleets.

KCATA approached Evergy Metro with a similar request. KCATA's bus electrification analysis showed the small general service rate to be uncompetitive with their existing fleet. KCATA has purchased two electric buses to evaluate but requires a rate that will substantially reduce the overall electric fuel costs before they can move forward with electrifying their fleet. For this reason, Evergy is proposing a similar ETS rate option in its Missouri Transportation Electrification Portfolio filing.

Refer to Appendix A for a summary of the rate and Appendix B for the proposed ETS tariff.

4.5 Business EV Charging Service Rate

Evergy proposes a new Business EV Charging Service (BEVCS) rate option for commercial customers to increase EV adoption, meet workplace employee and fleet EV charging needs, support public EVSP networks, and maximize grid benefits of EV charging load at commercial locations. Any commercial customer with an EV charging station is eligible for this rate. While the rate was designed using actual costs and charging patterns at workplace and fleet charging sites, the new rate would be suitable for any commercial EVSP including highway corridors, multi-family dwellings, and other public destinations.

The proposed BEVCS rate aligns with Evergy's equity commitment by directly supporting the electrification of commercial customer vehicles and reducing the cost of commercial EV charging to benefit underserved communities. Additional benefits of this rate for commercial customers include:

- Lower TCO for public fleets in a position to serve all customers, which will reduce the cost of providing public services through school buses, municipal service fleets, paratransit, rural transit, and public assistance vehicles;
- Lower TCO for commercial EV fleets, which will indirectly lower the cost of goods and services for all customers; and
- Affordable commercial charging, which will benefit all customers who charge away from home.

[81] See KCC Case No. 18-WSEE-328-RTS (Westar/EKC).

Commercial rates, which typically include demand charges, have been identified as significant financial obstacles for EVSPs and customers looking to electrify their fleets. DCFCs, which can draw large amounts of power to quickly charge vehicles, are especially susceptible to the impacts of high demand charges when utilization is low. The combination of high power and extremely low load factor is typical for commercial and industrial use cases and can subject fast charging stations to significant demand-based charges. Without substantial utilization and sales, commercial rates with relatively high fixed costs and demand charges inhibit the ability of charging stations to earn profits or fleets to be electrified economically.[82]

The BEVCS tariff is a TOU rate with three time periods designed to address commercial rate challenges for EVSPs and encourage workplace and fleet charging during off-peak times when system costs and grid utilization are lower. The BEVCS rate eliminates the demand charge while retaining a facility demand charge in order to incentivize managed charging. Customers must separately meter their EV charging station to participate in the rate and all rate riders and surcharges will apply. While commercial rebate recipients are not required to enroll in the BEVCS rate, these two TE portfolio components are complementary and will allow customers the flexibility to manage their charging operations according to their unique use case.

For Kansas Metro, the BEVCS rate was developed to be revenue neutral for a commercial customer with similar annual consumption on the LGA rate schedule. The BEVCS customer and facility charges are equal to the charges in the LGA rate schedule. The BEVCS rate does not include a demand charge and will recover these costs in the energy charges. The energy charges were determined by setting the off-peak energy charge equivalent to the third block of the LGA rate which typically represents “third shift” usage. This off-peak energy charge is relatively low but still exceeds Evergy’s marginal energy cost. Evergy then calculated the on-peak and off-peak energy charges such that the combination of customer, facility, on-peak, and off-peak energy charges are revenue neutral when compared to a LGA customer with similar annual consumption and the average LGA customer load profile. In this way, the rate design mirrors many features of the existing LGA rate, while still meeting the anticipated needs of commercial fleets and EVSPs.

For Kansas Central, the BEVCS rate was developed to be revenue neutral with a commercial customer with similar annual consumption on the Medium General Service (MGS) rate schedule. The BEVCS customer charge is equal to the MGS customer charge. The facility charge was set based on the revenue differential between the first and last energy blocks of the Dedicated Off-Peak Service (DOR) tariff. The BEVCS rate does not include a demand charge and will recover these costs in the energy charges. The energy charges were determined by setting the off-peak energy charge equivalent to the MGS rate. Evergy then calculated the on-peak and off-peak energy charges such that the combination of customer, facility, on-peak, and off-peak energy charges are revenue neutral when compared to a MGS customer with similar annual consumption and the average MGS customer load profile. In this way the rate design mirrors many features of the existing MGS rate while still meeting the anticipated needs of commercial fleets and EVSPs.

In addition to an overall reduction in the cost of operations, many commercial fleet operators expect fleet electrification to provide a reduction in their fleet’s carbon emissions. Evergy has included a Carbon Free Energy Option in the BEVCS tariff for customers that want

[82] NARUC, “Electric Vehicles: Key Trends, Issues, and Considerations for State Regulators,” October 2019. Available at: https://pubs.naruc.org/pub/32857459-0005-B8C5-95C6-1920829CABFE.

their fleet's EV charging to be carbon free. Under this option, Evergy will procure RECs to offset energy provided from non-carbon free sources.

Evergy anticipates that few customers will immediately be served on the rate and only a nominal amount of consumption is expected to be served pursuant to the rate in the near term. Therefore, any revenue impacts of this new offering will be negligible and will likely be less than if the load was served under a standard commercial rate. Evergy's objective is to establish the rate as an incremental offering to meet the anticipated future TE needs of customers.

The BEVCS rate will encourage customers to shift EV charging to off-peak times while better aligning the cost of charging EV with the cost causation from the grid. The rate offers customers potentially lower and more predictable fuel costs, which will help customers maximize operational savings of EVs. The rate will also allow Evergy to better understand where EV charging is occurring on the system, which will enable further load analysis to support grid management efforts at a time when EV adoption is expected to grow. The TOU rate mitigates adverse grid impacts from new EV charging load, while increasing grid utilization at off-peak periods.

Refer to Appendix A for a summary of the rate and Appendix B for the proposed tariff sheets.

4.6 Customer Education and Program Administration

Evergy proposes a separate component to conduct outreach and customer engagement related to this portfolio request. Given the significant benefits that EV adoption will bring to all customers, Evergy has a responsibility to help stimulate the EV market and inform customers about those benefits and available incentives, as well as educate customers about managing charging to save money and reduce the potential for negative grid impacts. Evergy's program administration activities will include rebate intake and processing, customer care, and overall program management and coordination.

This portfolio component is aligned to Evergy's equity commitment by ensuring transparency and lessening the barrier for customers to access accurate information about EV benefits and offerings in order to make informed decisions about EV purchases and charger usage. Furthermore, a focus on customer education is considered a best practice among utilities pursuing TE programs and is viewed favorably by other commissions. According to Atlas Public Policy, education components of utility TE filings have been met with an 83% approval rate.[83]

The program will offer customer education to support EV adoption and encourage participation in Evergy's program offerings. This will ensure that customers have the latest information regarding Evergy's EV rebates, tariffs, as well as the benefits of EVs, electric fuel costs, and charging station locations. Evergy will expand its current role of "energy advisor" into the TE space by offering technical assistance to help customers navigate EV-related decisions and to maximize the benefits of EV adoption. For example, Evergy will partner with transit and fleet customers to understand charging needs, evaluate existing capacity, and determine whether new infrastructure is needed to support their projects.

Evergy will use several methods to notify and educate developers about the residential developer rebate availability and benefits. For example, Evergy may create educational materials for developers, certified electricians, and related trade associations to support

[83] Atlas Public Policy, EV Hub, Utility Filings Dashboard, accessed January 4, 2021. Available at: https://www.atlasevhub.com/materials/electric-utility-filings/

education about rebate availability. Evergy's customer education and outreach activities will ensure the eventual homeowners are informed of the intended use of the outlet and are supported in purchasing an L2 EV charger (if desired) and/or participating in available TOU rates and incentives.

Evergy will consider among its awareness-building customer education efforts using communication channels such as Evergy's website, social media, billing messages, and workshops to communicate the benefits of EVs. Evergy may also create materials and resources to support customer participation in the TE portfolio programs, including a participant guide, self-guided tools, and access to technical assistance from program staff to help commercial customers assess and implement their EV adoption and charging infrastructure plans.

Evergy's activities will be informed by the knowledge that potential EV customers typically traverse various stages along the journey to EV car buying and each of these stages requires a different level of education and targeted resources:[84]

- **Pre-purchase** – customers need general education to build awareness of EVs.
- **Purchase** – customers are shopping for a new car and need specific information about EV makes, models, incentives, and charging options to make a purchase decision.
- **Early ownership** – once a customer has purchased a vehicle, they need support to change behaviors including planning their charging, accessing rebates or tariffs, and navigating other new experiences.
- **Continued ownership** – customers become comfortable with their EV and convert to EV enthusiasts.

Refer to Appendix A for a component summary, including the proposed budget.

4.7 Regulatory Considerations

4.7.1 Implementation and Reporting

Evergy proposes to administer the new rebate programs over a five-year period, beginning in the first quarter of 2022 and concluding in the first quarter of 2027. Evergy anticipates a three-month ramp-up period in 2021 to establish key processes, contracts, and operations prior to launching the programs.

Evergy proposes to voluntarily record and report to the Commission quantitative and qualitative measures of the new TE programs' status. Key performance indicators may include, but are not limited to, program participation and enrollment, customer and site types, EV charging installations to date, rebates paid, and customer satisfaction. Evergy believes that tracking and reporting is valuable for several reasons. Given that EV and charging technologies and services are relatively new for both Evergy and customers, regularly measuring and reporting on the outcomes of program implementation will be important to help improve and adapt TE program offerings in the future. Reporting on Evergy's experience is also valuable for stakeholders and other utilities that are pursuing TE efforts. Sharing best practices and lessons learned from Evergy's TE program implementation will be a valuable contribution to the broader industry. Furthermore, program reporting is considered a best practice among utilities pursuing TE programs.

[84] ESource, "Electrification Research Project: EV Marketing Assessment Debrief," January 7, 2020. Available at: https://docs.google.com/presentation/d/1BGihsm3-gD8iIIOmAPNJQRG8opAhe3dE/edit#slide=id.p1.

4.7.2 Cost Recovery

Evergy requests that the Commission authorize the Company to use a regulatory asset tracking mechanism to track and defer the program costs which include rebate incentives and certain associated customer education and administrative costs identified in Table 5 above. This regulatory asset tracking mechanism will provide the Company the ability to track and defer program costs to be considered for inclusion in the Company's cost of service in future rate cases. Evergy will not be able to recover the costs of the programs contemplated in this filing from program inception through the Company's next general rate case and between future rate cases without the requested regulatory asset tracking mechanism.

Evergy is seeking in this proceeding the ability to track and defer program costs for recovery of prudently incurred program costs in future rate cases through expense amortization over a period of five years. Evergy will not seek rate base treatment of the program costs that will be included in the regulatory asset tracking mechanism for the programs identified in Table 5. Evergy will provide the capital to fund the programs from program inception and between rate cases and proposes to be compensated for the capital carrying costs of doing so by retaining any additional revenues the program will produce until rates are reset in subsequent rate cases.

Specifically, Evergy requests the Commission authorize it to defer program costs associated with rebate incentives and customer education and program administrative costs into a regulatory asset from the inception of the programs until the Company's next filed general rate case to then ultimately recover prudently incurred costs for inclusion in cost of service in the Company's next general rate case. The Company proposes program costs be amortized into cost of service through an amortization period of five years. For such program costs that continue past the Company's next filed general rate case, the regulatory asset tracking mechanism will continue to defer program costs for the five-year term of the programs and be included in the Company's cost of service through amortizations in future rate cases. Absent Commission authority to track program costs through a regulatory asset tracking mechanism, the Company is unlikely to have the ability to recover the Company funded program costs. The Company acknowledges that deferred program costs will be subject to prudence review.

As described further in Section 4.8, Evergy intends to expand the CCN in its Kansas service territory. 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 although the Company is not seeking any regulatory asset tracking mechanism treatment for the expansion of additional CCN deployments as part of this filing. Evergy will request recovery of prudently incurred O&M expenses as well as rate base treatment of prudently incurred capital spend associated with the CCN deployments as part of a future general rate case consistent with other capital investments made by the Company and the Commission's decisional prudence determination in this proceeding.

4.7.3 Stakeholder Process

Throughout the development of this filing, Evergy conducted several stakeholder meetings with Staff and other interested parties. The valuable feedback Evergy collected through these meetings helped to inform the proposed design and ensure balance in the approach to addressing stakeholder priorities while meeting the needs of the EV market. In addition, customers and other stakeholders across the TE landscape provided letters that speak to their unique expertise on electrification, interest in EVs, and support for this TE portfolio filing. Refer to Appendix F for Letters of Support.

4.8 Clean Charge Network Expansion

In addition to the new programs and rates described above, Evergy plans to expand the CCN in Kansas to continue meeting the market demand for EV charging aligned to expected EV adoption growth. Evergy intends to stimulate and meet interim market demand in the absence of adequate charging service from third-party EVSPs. For this reason, the CCN expansion complements the commercial rebate offering and will ensure that all charging use cases are well-supported through a combination of these proposed program elements.

The CCN expansion will allow Evergy to continue to collect and analyze charger utilization data for various use cases, better understand where EV charging is occurring on the system, and enable further load analysis to support grid management activities. Evergy will build upon its award-winning customer outreach approach to spread awareness of the CCN, maintain up-to-date information about EV model availability, and hold events to engage customers.[85]

The planned CCN expansion is aligned with Evergy's equity commitment by maintaining a focus on filling gaps in the market and serving underserved communities, with a focus on Kansas Central. Site selection for new CCN stations will prioritize commercial locations in underserved communities, secondary and tertiary highway corridors, and potentially designated charging to support rideshare and TNC use cases. Evergy will use existing CCN data and experience to identify suitable locations to support these use cases.

Table 7 summarizes Evergy's estimated spending plan to install new CCN stations and the estimated number of resulting sites.

Table 7: CCN Expansion Summary

	Spending Plan	Resulting New CCN Sites
KS Metro	$0.6M	3
KS Central	$12.9M	99
KS Total	$13.5M	102

Evergy's planned expansion of the CCN into Kansas Central is intended to deliver public charging locations to priority areas that include a largely underserved area to accelerate EV adoption.

[85] See Appendix E for additional details on Evergy's experience with the CCN.

4.8.1 Highway Corridors

Creating a sufficient charging network decreases "range anxiety" by giving consumers the confidence they can safely reach their intended destination using an EV and be able to find a charger if needed. Range anxiety is still considered a significant barrier to increased EV adoption and is a concern that can be magnified when traveling longer distances on highways.[86] Fast charging hubs along highway corridors enable long distance and inter-city travel for EV drivers. Evergy proposes to expand the CCN to secondary and tertiary highway corridor locations within the service territory by providing DCFCs at strategic locations near highway exits. Currently, DCFC infrastructure is nascent in Evergy's territory. The addition of DCFC to highway corridors supports community-based fast charging for time-sensitive EV drivers while bolstering confidence for Evergy customers with real or perceived range anxiety to adopt an EV. This 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.

Through the Midwest Memorandum of Cooperation, Evergy has partnered with other utilities to create a multi-state EV charging network along major Midwest travel corridors by the end of 2022.[87] This commitment is consistent with Evergy's TE program priority to fill gaps in underserved areas, particularly along highway corridors to ensure that EVs operating across Evergy's territory can complete long-range trips with minimal range anxiety.

4.8.2 Transportation Network Companies

Rideshare and TNC services increasingly provide critical mobility solutions for underserved customers and individuals with limited access to owning or operating their own vehicles due to the high cost of private car ownership, impairments, or other mobility barriers. Evergy proposes to install DCFC infrastructure that can be used by electric rideshare programs, providing the benefits of EVs to customers who may not own a personal vehicle. 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. This aligns with Evergy's equity commitment by removing mobility barriers and supporting affordable, accessible, and suitable EV options which will benefit underserved customers who may depend on shared transportation services.

4.8.3 Other Underserved Areas

Evergy's experience and data indicate that the ratio of EV owners per capita is relatively equal across jurisdictions, with the exception of Kansas Central, which is still nascent in its deployment of EV charging infrastructure. For this reason, Evergy's planned expansion of the CCN into Kansas Central is intended to deliver public charging locations to a largely underserved area to accelerate EV adoption. Infrastructure investment by Evergy can jumpstart the market while also allowing for investment by third parties. Based on the projected EV growth in the next five years and the charging infrastructure needed to support those vehicles, Evergy believes there is opportunity for multiple investment models to serve market needs.

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[86] NREL, "Plug-in Electric Vehicle Showcases: Consumer Experience and Acceptance," July 2020. Available at: https://afdc.energy.gov/files/u/publication/pev_showcases_consumer_experience_acceptance.pdf.

[87] PR Newswire, "Midwest Energy Companies Pledge to Build Nation's Largest Interstate EV Charging Network, Enabling Clean Transportation," Available at: https://www.prnewswire.com/news-releases/midwest-energy-companies-pledge-to-build-nations-largest-interstate-electric-vehicle-charging-network-enabling-clean-transportation-301135689.html.

Appendix A. Detailed Program Descriptions

Residential Customer EV Outlet Rebate	
Objective	The rebate will reduce the costs associated with enabling Level 2 EV charging installation at home, which provides customers with the ability to charge EVs in less time using a more energy-efficient charger (compared to Level 1). L2 charging enables EVs to charge sufficiently in the overnight hours (off peak) more effectively than using L1.
Target Market	Residential customers, primarily single-family homes
Description & Eligibility	The rebate incentivizes the installation of a 240V outlet to enable L2 EV charging. Customers will apply for a rebate after the qualified equipment has been installed and must provide proof of EV registration. Residential customers are limited to one rebate per residence. The customer applying for the rebate must be the Evergy account holder and have the authority to install the outlet.
Implementation Strategy	Customers will complete an online application form and upload the necessary documentation, which will include dated installation receipts provided by a certified electrician and proof of EV registration at the same address. The applicant must agree to participate in Evergy surveys related to their experience with the rebate, driving an EV, interest in TOU rate enrollment, etc.
Risk Management	Evergy will require that customers provide documentation to prove that an EV is registered (i.e., has been purchased or leased) at the installation address, no later than six months from the outlet installation date. Customers will not receive the rebate until documentation has been approved.
Measures & Incentives	Measure: Dedicated 240V, (40A or greater) circuit, including NEMA 14-50 outlet Incentive: 50% of the installation costs up to $500/outlet
Estimated Participation	Estimated rebates by jurisdiction are as follows: KS Metro: 1700 KS Central: 1400 **KS Total: 3100** These estimates are based on the assumption that 90% of EVs are driven by single-family home dwellers, 60% of those homes able to upgrade, and 20% of those new EV purchasers (per EPRI's medium EV adoption projection) will install a 240V outlet to facilitate EV charging.
Estimated Program Budget	KS Metro: $850,000 KS Central: $700,000 **KS Total: $1,550,000** The program budget estimates are based on the assumptions and participation rates noted above. Note: Customer education and program administration budgets are outlined separately.

Residential Developer EV Outlet Rebate	
Objective	The rebate will reduce the costs associated with enabling L2 EV charging at home, which provides customers with the ability to charge EVs faster and more efficiently than L1 charging. By targeting new homes, Evergy will help to ensure homes are pre-wired for L2 EV charging during construction, which will save costly upgrades for homeowners later. The program also seeks to enhance relationships with home developers and educate builders about the benefits of EV-ready construction.
Target Market	Developers of residential dwellings, primarily single-family homes
Description & Eligibility	The rebate incentivizes the installation of a 240V outlet in a location suitable to facilitate L2 EV charging. Developers will apply for a rebate after a qualified residence has been constructed with the outlet installed. Program participants are limited to one rebate per residence. Third-party vendors or EV charging providers are not eligible.
Implementation Strategy	Developers will complete an online application form and upload the necessary documentation, which will include the address at which the installation occurred.
Risk Management	Customer education and outreach activities will aim to inform eventual homeowners of the intent of the 240V outlet and are supported in next steps, such as purchasing an EV charger (if desired). Through Evergy's education activities, new homeowners will receive information about the benefits of charging with L2 and optional TOU rates.
Measures & Incentives	Measure: Dedicated 240V, (40A or greater) circuit, including NEMA 14-50 outlet Incentive: $250 for one outlet installed per home
Estimated Participation	Estimated rebates by jurisdiction are as follows: KS Metro: 200 KS Central: 200 **KS Total: 400** These estimates are based on the assumption that 2% of new homes (calculated from historical building permit statistics) will be EV-ready.
Estimated Program Budget	KS Metro: $50,000 KS Central: $50,000 **KS Total: $100,000** The program budget estimates are based on the assumptions and participation rates noted above. Note: Customer education and program administration budgets are outlined separately.

Commercial EV Charger Rebate	
Objective	The rebates will reduce the costs associated with EV charging installations at a variety of locations (highway, public, workplace, fleet, and multi-family) by providing a rebate toward the make-ready infrastructure and equipment costs. The program will also allow Evergy to better understand where EV charging is occurring on the system, which will enable further load analysis and customer targeting. The program design is intended to be future-looking and incentivize smart, network-capable chargers to enable controllable load management regardless of what type of L2 or DCFC charger is installed.
Target Market	Commercial customers: highway corridors, other public destinations, workplaces, fleets, multi-family dwellings
Description & Eligibility	The rebate incentivizes the installation of Level 2 and DCFC at commercial locations. Customers will apply for a rebate after qualified equipment has been installed. Commercial customers are eligible for rebates associated with varying numbers of L2 and DCFC ports per premise. Leased charging stations are eligible with proof that the customer has executed an agreement for no less than five years.
Implementation Strategy	Evergy will issue an RFI to develop a list of qualified L2 and DCFC chargers meeting the technical specifications (e.g., networked, ENERGY STAR certified L2, safety certification). Evergy will periodically accept submittals from other vendors and update the qualified equipment list for those suppliers that meet the qualifications. Customers will complete an online pre-approval form, prompting Evergy to evaluate individual applications based on needs/priorities, existing infrastructure, and other factors. If pre-approved, customers will complete the rebate application forms and upload the necessary documentation, which will include dated EV charger installation receipts and proof of charger operation at the same address, to receive the rebate. Rebates must be claimed within six months of date of installation. Customers must provide Evergy with access to usage/utilization data, install stations in dedicated EV parking spaces, and agree to future demand response capabilities.
Risk Management	Evergy will require that customers provide documentation to prove that chargers have been installed within six months to receive the rebate and must provide documentation annually to demonstrate that EV chargers are operational for five years following the installation.
Measures & Incentives	Measure: Rebate support for installed customer infrastructure costs and qualified EVSE Incentive: Rebate of $2500 per port for L2 and $20,000 per unit for DCFC, capped at between $25,000-$65,000 per premise (depending on site type)

Commercial EV Charger Rebate	
Estimated Program Budget	Estimated rebate budgets by jurisdiction, based on a projected needs assessment, are as follows: KS Metro: $8.9M KS Central: $6.5M **KS Total: $15.4M** Note: Customer education and program administration budgets are outlined separately.
Estimated Rebated Charging Ports	The estimated number of charging ports to be installed with the estimated rebate budgets are as follows: KS Metro: 1120 L2, 305 DCFC KS Central: 1160 L2, 180 DCFC **KS Total: 2280 L2, 485 DCFC** The ports estimates assume each receives the maximum incentive allowed.

Electric Transit Service (ETS) Rate *(KS Metro)*	
Objective	The ETS rate will encourage customers to shift EV charging to off-peak times while better aligning the cost of charging electric transit vehicles with the cost causation from the grid. The rate offers customers potentially lower and more predictable fuel costs for their electrified transit fleets, which will help transit agencies justify an electric fleet conversion. The rate will also allow Evergy to better understand where EV charging is occurring on the system, which will enable further load analysis and customer targeting at a time when transit fleet electrification is expected to grow. Additionally, the rate mitigates adverse grid impacts from EV charging, increases grid utilization, and creates downward pressure on rates.
Target Market	Public transit fleets
Description & Eligibility	The ETS tariff is a TOU rate with a 12-hour peak that aligns with most fleet depot charging patterns. The rate does not include a demand charge but does include a facility demand charge in order to incentivize managed charging. Customers must separately meter their EVSE to participate in the tariff.
Implementation Strategy	Evergy will conduct targeted outreach to eligible transit customers to engage in rate-specific consultation and make the customer aware of other incentives including the commercial charging infrastructure rebate. Customers will work with their Evergy account manager or the Business Solutions Call Center to determine eligibility and enroll in the rate.
Risk Management	Evergy seeks to offer technical assistance to help the customer navigate the rate selection process in addition to fleet and infrastructure planning.
Estimated Participation	Participation is limited to transit customers and is expected to be low, particularly in initial years of rate availability.
Estimated Budget	Customer education and administration budgets are outlined separately.

Business EV Charging Service (BEVCS) Rate	
Objective	The BEVCS rate will encourage customers to shift EV charging to off-peak times while better aligning the cost of charging EV with the cost causation from the grid. The rate offers customers potentially lower and more predictable fuel costs, which will help customers maximize operational savings of EVs. The rate will also allow Evergy to better understand where EV charging is occurring on the system, which will enable further load analysis and customer targeting at a time when EV adoption is expected to grow. Additionally, the rate mitigates adverse grid impacts from EV charging, increases grid utilization, and creates downward pressure on rates.
Target Market	Commercial customers
Description & Eligibility	The BEVCS tariff is a TOU rate with three peak periods designed to align with actual costs and time periods for workplace and fleet charging. The rate does not include a demand charge but does include a facility demand charge in order to incentivize managed charging. Customers must separately meter their EVSE to participate in the tariff.
Implementation Strategy	Evergy will conduct targeted outreach to eligible commercial customers to engage in rate-specific consultation and make the customer aware of other incentives including the commercial charging infrastructure rebate. Customers will work with their Evergy account manager or the Business Solutions Call Center to determine eligibility and participate in the rate.
Risk Management	Evergy seeks to offer technical assistance to help the customer navigate the rate selection process in addition to fleet and infrastructure planning.
Estimated Participation	Participation is limited to commercial customers with electrified fleets and is expected to be low, particularly in initial years of rate availability.
Estimated Budget	Customer education and administration budgets are outlined separately.

Customer Education and Program Administration	
Objective	The proposed portfolio will include customer education, outreach, and support to encourage EV adoption and participation in Evergy's TE programs. This component will ensure that customers have the latest information regarding Evergy's EV rebates and rates, as well as the benefits of EVs. Evergy will offer technical assistance to help customers navigate EV-related decisions and to maximize the benefits of EV adoption.
Target Market	Customer education and outreach efforts will target all Evergy customers and TE program participants (rebate recipients, fleets, rate enrollees, etc.)
Description – Customer Education & Outreach	Evergy intends to include, at a minimum, the following functions: • Internal staff training focused on customer-facing roles • Material/collateral development and production • Website content specific to new programs • Customer education and outreach related to new programs • Technical assistance to support infrastructure planning and rate assessment
Description – Program Administration	Evergy intends to include the following functions: • Rebate application set-up, intake, and processing (including customer care) • Data collection, including customer surveys • Annual reporting • Overall program management and coordination
Estimated Budget	Estimated as 15% of the total five-year program budget, totaling: KS Metro: $1.5M KS Central: $1.1M **KS Total: $2.6M**

Appendix B. Program Tariff Sheets

Kansas Metro

- Transportation Electrification Program Rebates
- Electric Transit Service (ETS) Rate
- Business EV Charging Service (BEVCS) Rate

Kansas Central

- Transportation Electrification Program Rebates
- Business EV Charging Service (BEVCS) Rate

TRANSPORTATION ELECTRIFICATION PROGRAM

PURPOSE

The purpose of the Transportation Electrification 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.

PROGRAM INCENTIVES

The Program is comprised of three incentives:

- Residential Customer EV Outlet Rebate,
- Residential Developer EV Outlet Rebate, and
- Commercial EV Charger Rebate.

AVAILABILITY

Except as otherwise provided in the terms governing a specific incentive, the Program is available to all existing or potential Evergy customers that commit to installing, owning, and operating qualifying EV charging infrastructure and that are not in collections or have an active payment agreement with Company.

DEFINITIONS

BUILDER: A business entity that constructs residential dwellings.

DEVELOPER: A business entity that develops land through construction of residential dwellings.

TRANSPORTATION ELECTRIFICATION PROGRAM

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.

ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE): Equipment that communicates with and supplies electric power to the electric vehicle. EVSE is often referred to as the 'charger.' The EVSE may be a permanently mounted device or a plug-connected cord-set provided by the vehicle manufacturer.

ELECTRIC VEHICLE (EV): The collective term used for battery electric vehicles and plug-in hybrid electric vehicles.

EV SERVICE PROVIDER (EVSP): A company that produces and operates EV charging networks.

EV OUTLET: A dedicated 240V, 40 amp or greater, circuit, including a NEMA 14-50 outlet intended for Level 2 charging.

FLEET: A non-residential site intended to provide vehicle charging service to fleet vehicles of the business that occupies the site, but not to employees or the general public.

HIGHWAY CORRIDOR: A non-residential site intended to provide EV charging service along interstate highways, state highways or other thoroughfares that connect and provide long-distance travel between population centers.

HOME CHARGING: EVSE that is located at a residential dwelling, typically mounted in a garage, intended to provide EV charging service for the homeowner or renter.

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.

TRANSPORTATION ELECTRIFICATION PROGRAM

MAKE-READY INFRASTRUCTURE: Customer-side facilities between the utility meter and EVSE required to install new EV charging equipment.

MULTIFAMILY: A residential development with multiple leased or owned dwelling units intended to provide charging service to tenants and visitors, but not to the general public.

PORT: EVSE cables and connector that connect to the standard charging inlet in a car. When an EVSE has two sets of cables and can charge two EVs simultaneously, it is referred to as a dual-port EVSE

PUBLIC: A site that is available to the general public or the customers of an establishment that is open to the general public, including but not limited to government facilities, libraries, parks, retail establishments, and restaurants.

QUALIFIED EVSE: EVSE that meet Evergy requirements and have been approved by Evergy.

SITE: The property owned or occupied by the Customer where the EVSE will be installed.

SITE HOST: The business entity participating in the TE Rebate Program that owns, operates, and maintains the EVSE and the customer of record for Evergy that will be responsible for paying the corresponding electric bill.

WORKPLACE: A non-residential site intended to provide vehicle charging service to employees or visitors of the business that occupies the site, but typically not to the general public.

TERM

The Program will begin February 1, 2022, and shall continue for a period of five years, terminating on January 31, 2027. The Company may begin accepting applications prior to February 1, 2022, to the extent that it is able to do so. Applications for incentives under each category will be accepted until the earlier of the date that funding is exhausted for the incentive or January 31, 2027.

TRANSPORTATION ELECTRIFICATION PROGRAM

PROGRAM FUNDING

Total Company-supplied budget for the Program shall not exceed $11.3 million including approximately $1.5 million allocated for customer education and program administrative expenses but not including funds made available from other sources such as private, federal or state grants or programs. Each incentive is also subject to an individual budget estimated as follows:

Category	Budget
Residential Customer EV Outlet Rebate	$ 850,000
Residential Developer EV Outlet Rebate	$ 50,00
Commercial EV Charger Rebate	$ 8,900,000
Customer Education & Program Administration	$ 1,470,000
Total	$ 11,270,000

REGULATIONS

Subject to Rules and Regulations filed with the State Regulatory Commission.

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TRANSPORTATION ELECTRIFICATION PROGRAM

RESIDENTIAL CUSTOMER EV OUTLET REBATE

PURPOSE

The Residential Customer EV Outlet Rebate is designed to enable the residential customer's use of L2 home charging to charge their personal EV. The primary objectives of this rebate are to provide incentives to residential customers to reduce the cost of installing a 240-volt (V) outlet needed to accommodate faster and more energy-efficient L2 charging.

AVAILABILITY

This incentive is available, while funds remain, to residential customers being served under any residential rate schedule owning or renting an EV.

ELIGIBLE MEASURES AND INCENTIVES

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.

PROGRAM PROVISIONS

Customers must request a rebate by submitting an application through the Evergy website (www.evergy.com). Rebates will be distributed on a first-come basis according to the date of the application. Eligible customers must comply with the application instructions and agree to the Terms and Conditions to receive the rebate. By applying for the rebate, the applicant agrees that the project may be subject to on-site inspections by Evergy. A maximum of one (1) rebate is available per residence.

TRANSPORTATION ELECTRIFICATION PROGRAM

The rebate will be issued upon completion of the application process, which will require the applicant to provide proof of outlet installation by a certified electrician, costs, and date as well as proof of ownership or lease of an EV registered at the address in which the outlet was installed. Rebates must be claimed within six (6) months of date of installation. Residential customers must agree to participate in Evergy surveys related to their experience with the rebate and other relevant topics.

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RESIDENTIAL DEVELOPER EV OUTLET REBATE

PURPOSE

The Residential Developer EV Outlet Rebate is designed to enable future residential customer use of L2 home charging to charge their personal EV. The primary objectives of this rebate are to provide incentives to builders and developers to install an EV outlet during construction.

AVAILABILITY

This incentive is available to builders and developers for new residential construction projects while funds remain.

Third-party EVSE vendors or EVSPs are not eligible to apply for a Residential Developer EV Outlet Rebate.

ELIGIBLE MEASURES AND INCENTIVES

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.

PROGRAM PROVISIONS

Builders and developers must request a rebate for a project by submitting an application through the Evergy website (www.evergy.com). Rebates will be distributed on a first-come basis according to the date of the application. Eligible applicants must comply with the application instructions and agree to the Terms and Conditions to receive the rebate. By applying for the rebate, the applicant agrees that the project may be subject to on-site inspections by Evergy. A maximum of one (1) rebate is available per residence.

TRANSPORTATION ELECTRIFICATION PROGRAM

The rebate will be issued upon completion of the application process, which will require the applicant to provide proof of outlet installation by a certified electrician, costs, and date. Rebates must be claimed within six (6) months of date of installation. Rebate recipients must agree to participate in Evergy surveys related to their experience with the rebate and other relevant topics.

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COMMERCIAL EV CHARGING REBATE

PURPOSE

The Commercial EV Charging Rebate is designed to encourage development of EVSE at commercial customer sites. The primary objective of this rebate is to provide incentives to EV charging station site hosts to reduce the cost of make-ready infrastructure and EVSE.

AVAILABILITY

This incentive is available to commercial customers being served under any commercial rate schedule while funds remain.

ELIGIBLE MEASURES AND INCENTIVES

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.

The maximum number of qualified EVSE ports at each site are as follows:

TRANSPORTATION ELECTRIFICATION PROGRAM

Category	Level 2 Ports	DCFC Units	Maximum per Site
Commercial Highway Corridor	2	2	$45,000
Commercial Public	6	2	$55,000
Commercial Workplace or Fleet	10	2 (1)	$65,000
Commercial Multifamily	10	0	$25,000

(1) Only available where EVSE will serve fleet operations

Notwithstanding the limits on incentives at each individual site, business entities who install at public, workplace, fleet or multifamily locations may not receive total incentives under the program of more than $500,000.

PROGRAM PROVISIONS

Evergy will develop and maintain a list of qualified EVSE eligible for rebates and will make the list available on the Evergy website (www.evergy.com). Evergy will also develop and publish criteria for the individual site types: highway corridor, public, workplace, fleet, and multifamily.

Customers must request a rebate for a project by submitting an application through the Evergy website (www.evergy.com). Projects must be pre-approved by the Company before the project start date to be eligible for a rebate. Applications will be evaluated based on site suitability and the rebates will be distributed on a first-come basis according to the date of the customer's application. Eligible customers must comply with the application instructions and agree to the Terms and Conditions to receive the rebate. By applying for the rebate, the applicant agrees that the project may be subject to on-site inspections by Evergy.

A business entity with multiple sites may participate by submitting an application for each site. The maximum amount of each rebate will be calculated based on the number of L2 and/or DCFC EVSE installed up to the maximum allowable amount per site.

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The rebate will be issued upon completion of the project's final application process, which will require the customer to provide proof of equipment purchase, installation, costs, and dates. Rebates must be claimed within six (6) months of date of installation. Customers must agree to provide the Company access to charger utilization data, install stations in dedicated EV parking spaces, and agree to participate in potential future demand response events, if deemed necessary. Additionally, rebate recipients must agree to participate in Evergy surveys related to their experience with the rebate and other relevant topics.

Payment will be made within sixty (60) days of completion of project and validation of customer's W-9 information.

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ELECTRIC TRANSIT SERVICE

AVAILABILTY

Electric service is available under this schedule through one (1) meter point on the Company's existing distribution facilities. Single phase or if present at the location, three phase service is available at the secondary voltage of transformation facilities supplied from the Company's distribution system. At the Company's discretion, service may be provided through more than one metering point where it is economical for the Company to do so.

APPLICABILITY

To any non-residential customer using electric service for the exclusive use of charging electric public transit vehicles. The load served under this Schedule will be separately metered from all other commercial electrical loads and will be used exclusively for the purpose of charging electric transit vehicles. This Schedule allows other ancillary uses, limited to no more than 5 kW, that are specifically related to the provision of electric transit vehicle charging, such as area lighting.

TERM OF SERVICE

Service shall be provided for a fixed term of not less than one (1) year.

CARBON FREE ENERGY OPTION

Customers have the option to elect that all of the electricity under this schedule to be from carbon free resources. The Company, at its sole discretion, agrees to generate or purchase energy from carbon free sources and/or purchase and retire renewable energy credits in an amount at least equal to the level of service purchased under this tariff. The amount of carbon free energy available under this tariff shall be determined by the Company based on the amount of carbon free energy sources and renewable energy credits available to the Company.

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ELECTRIC TRANSIT SERVICE

RATE FOR SERVICE

A. Customer Charge (Per Month) $ 105.97

B. Facility Charge (Per kW of Billing Demand per month) $ 3.069

C. Energy Charge per Pricing Period (Per kWh)

	Summer Season	Winter Season
On-Peak Period	$0.19237	$0.10363
Off-Peak Period	$0.02755	$0.02416

D. Carbon Free Energy Option Charge (Per kWh) $0.00250

MINIMUM MONTHLY BILL

The Minimum Monthly Bill shall be equal to the sum of the Customer Charge and Facilities Charge.

SEASONS

The Summer Season is four consecutive months, beginning and effective June 1 and ending September 30 inclusive. The Winter Season is eight consecutive months, beginning and effective October 1 and ending May 31. Customer bills for meter reading periods including one or more days in both seasons will reflect the usage in each season.

PRICING PERIODS

Pricing periods are established in Central Time year-round. The hours for each pricing period are as follows:

On-Peak: 6 a.m. - 6 p.m., Monday through Friday, excluding Holidays
Off- Peak Period: All other hours

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ELECTRIC TRANSIT SERVICE

HOLIDAYS

Holidays are New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

MONTHLY MAXIMUM DEMAND

The Monthly Maximum Demand shall be the customer's maximum fifteen (15) minute integrated demand measured in kW during the current billing period.

FACILITIES DEMAND

Facilities Demand shall be equal to the highest Monthly Maximum Demand recorded in the last twelve (12) months including the current month. If there are less than eleven (11) previous billing periods, the determination will be made using all available previous billing periods.

ADJUSTMENTS AND SURCHARGES

The rates hereunder are subject to adjustment as provided in the following schedules:

- Energy Cost Adjustment (ECA)
- Energy Efficiency Rider (EER)
- Property Tax Surcharge (PTS)
- Tax Adjustment (TA)
- Transmission Delivery Charge (TDC)

REGULATIONS

Subject to Rules and Regulations filed with the State Regulatory Commission.

BUSINESS EV CHARGING SERVICE

AVAILABILTY

Electric service is available under this schedule through one (1) meter at point on the Company's existing distribution facilities. Single phase or if present at the location, three phase service is available at the secondary voltage of transformation facilities supplied from the Company's distribution system. At the Company's discretion, service may be provided through more than one metering point where it is economical for the Company to do so.

APPLICABILITY

To any non-residential customer using electric service for the exclusive use of charging electric vehicles. The load served under this Schedule will be separately metered from all other commercial electrical loads and will be used exclusively for the purpose of charging electric vehicles. This Schedule allows other ancillary uses, limited to no more than 5 kW, that are specifically related to the provision of electric vehicle charging, such as area lighting.

TERM OF SERVICE

Service shall be provided for a fixed term of not less than one (1) year.

CARBON FREE ENERGY OPTION

Customers have the option to elect that all of the electricity under this schedule to be from carbon free resources. The Company, at its sole discretion, agrees to generate or purchase energy from carbon free sources and/or purchase and retire renewable energy credits in an amount at least equal to the level of service purchased under this tariff. The amount of carbon free energy available under this tariff shall be determined by the Company based on the amount of carbon free energy sources and renewable energy credits available to the Company.

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BUSINESS EV CHARGING SERVICE

RATE FOR SERVICE

A. Customer Charge (Per Month) $ 105.97

B. Facility Charge (Per kW of Billing Demand per month) $ 3.069

C. Energy Charge per Pricing Period (Per kWh)

	Summer Season	Winter Season
On-Peak Period	$0.17979	$0.11522
Off-Peak Period	$0.08298	$0.05458
Super Off-Peak Period	$0.02755	$0.02416

D. Carbon Free Energy Option Charge (Per kWh) $0.00250

MINIMUM MONTHLY BILL

The Minimum Monthly Bill shall be equal to the sum of the Customer Charge and Facilities Charge.

SEASONS

The Summer Season is four consecutive months, beginning and effective June 1 and ending September 30 inclusive. The Winter Season is eight consecutive months, beginning and effective October 1 and ending May 31. Customer bills for meter reading periods including one or more days in both seasons will reflect the usage in each season.

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BUSINESS EV CHARGING SERVICE

PRICING PERIODS

Pricing periods are established in Central Time year-round. The hours for each pricing period are as follows:

On-Peak:	2 p.m. – 8 p.m., Monday through Friday, excluding Holidays
Super Off-Peak	12 a.m. – 6 a.m. every day
Off- Peak Period:	All other hours

HOLIDAYS

Holidays are New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

MONTHLY MAXIMUM DEMAND

The Monthly Maximum Demand shall be the customer's maximum fifteen (15) minute integrated demand measured in kW during the current billing period.

FACILITIES DEMAND

Facilities Demand shall be equal to the highest Monthly Maximum Demands recorded in the last twelve (12) months including the current month. If there are less than eleven (11) previous billing periods, the determination will be made using all available previous billing periods.

BUSINESS EV CHARGING SERVICE

ADJUSTMENTS AND SURCHARGES

The rates hereunder are subject to adjustment as provided in the following schedules:

- Energy Cost Adjustment (ECA)
- Energy Efficiency Rider (EER)
- Property Tax Surcharge (PTS)
- Tax Adjustment (TA)
- Transmission Delivery Charge (TDC)

REGULATIONS

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TRANSPORTATION ELECTRIFICATION PROGRAM

PURPOSE

The purpose of the Transportation Electrification 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.

PROGRAM INCENTIVES

The Program is comprised of three incentives:

- Residential Customer EV Outlet Rebate,
- Residential Developer EV Outlet Rebate, and
- Commercial EV Charger Rebate.

AVAILABILITY

Except as otherwise provided in the terms governing a specific incentive, the Program is available to all existing or potential Evergy customers that commit to installing, owning, and operating qualifying EV charging infrastructure and that are not in collections or have an active payment agreement with Company.

DEFINITIONS

BUILDER: A business entity that constructs residential dwellings.

DEVELOPER: A business entity that develops land through construction of residential dwellings.

TRANSPORTATION ELECTRIFICATION PROGRAM

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.

ELECTRIC VEHICLE SUPPLY EQUIPMENT (EVSE): Equipment that communicates with and supplies electric power to the electric vehicle. EVSE is often referred to as the 'charger.' The EVSE may be a permanently mounted device or a plug-connected cord-set provided by the vehicle manufacturer.

ELECTRIC VEHICLE (EV): The collective term used for battery electric vehicles and plug-in hybrid electric vehicles.

EV SERVICE PROVIDER (EVSP): A company that produces and operates EV charging networks.

EV OUTLET: A dedicated 240V, 40 amp or greater, circuit, including a NEMA 14-50 outlet intended for Level 2 charging.

FLEET: A non-residential site intended to provide vehicle charging service to fleet vehicles of the business that occupies the site, but not to employees or the general public.

HIGHWAY CORRIDOR: A non-residential site intended to provide EV charging service along interstate highways, state highways or other thoroughfares that connect and provide long-distance travel between population centers.

HOME CHARGING: EVSE that is located at a residential dwelling, typically mounted in a garage, intended to provide EV charging service for the homeowner or renter.

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.

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MAKE-READY INFRASTRUCTRE: Customer-side facilities between the utility meter and EVSE required
to install new EV charging equipment.

MULTIFAMILY: A residential development with multiple leased or owned dwelling units intended to provide charging service to tenants and visitors, but not to the general public.

PORT: EVSE cables and connector that connect to the standard charging inlet in a car. When an EVSE has two sets of cables and can charge two EVs simultaneously, it is referred to as a dual-port EVSE

PUBLIC: A site that is available to the general public or the customers of an establishment that is open to the general public, including but not limited to government facilities, libraries, parks, retail establishments, and restaurants.

QUALIFIED EVSE: EVSE that meet Evergy requirements and have been approved by Evergy.

SITE: The property owned or occupied by the Customer where the EVSE will be installed.

SITE HOST: The business entity participating in the TE Rebate Program that owns, operates, and maintains the EVSE and the customer of record for Evergy that will be responsible for paying the corresponding electric bill.

WORKPLACE: A non-residential site intended to provide vehicle charging service to employees or visitors of the business that occupies the site, but typically not to the general public.

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TRANSPORTATION ELECTRIFICATION PROGRAM

TERM

The Program will begin February 1, 2022, and shall continue for a period of five years, terminating on January 31, 2027. The Company may begin accepting applications prior to February 1, 2022, to the extent that it is able to do so. Applications for incentives under each category will be accepted until the earlier of the date that funding is exhausted for the incentive or January 31, 2027.

PROGRAM FUNDING

Total Company-supplied budget for the Program shall not exceed $8.35 million including approximately $1.1 million allocated for customer education and program administration expenses but not including funds made available from other sources such as private, federal or state grants or programs. Each incentive is also subject to an individual budget estimated as follows:

Category	Budget
Residential Customer EV Outlet Rebate	$ 700,000
Residential Developer EV Outlet Rebate	$ 50,000
Commercial EV Charger Rebate	$ 6,500,000
Customer Education & Program Administration	$ 1,087,500
Total	$ 8,337,500

REGULATIONS

Subject to Rules and Regulations filed with the State Regulatory Commission.

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TRANSPORTATION ELECTRIFICATION PROGRAM

RESIDENTIAL CUSTOMER EV OUTLET REBATE

PURPOSE

The Residential Customer EV Outlet Rebate is designed to enable the residential customer's use of L2 home charging to charge their personal EV. The primary objectives of this rebate are to provide incentives to residential customers to reduce the cost of installing a 240-volt (V) outlet needed to accommodate faster and more energy-efficient L2 charging.

AVAILABILITY

This incentive is available, while funds remain, to residential customers being served under any residential rate schedule owning or renting an EV.

ELIGIBLE MEASURES AND INCENTIVES

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.

PROGRAM PROVISIONS

Customers must request a rebate by submitting an application through the Evergy website (www.evergy.com/). Rebates will be distributed on a first-come basis according to the date of the application. Eligible customers must comply with the application instructions and agree to the Terms and Conditions to receive the rebate. By applying for the rebate, the applicant agrees that the project may be subject to on-site inspections by Evergy. A maximum of one (1) rebate is available per residence.

TRANSPORTATION ELECTRIFICATION PROGRAM

The rebate will be issued upon completion of the application process, which will require the applicant to provide proof of outlet installation by a certified electrician, costs, and date as well as proof of ownership or lease of an EV registered at the address in which the outlet was installed. Rebates must be claimed within six (6) months of date of installation. Residential customers must agree to participate in Evergy surveys related to their experience with the rebate and other relevant topics.

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RESIDENTIAL DEVELOPER EV OUTLET REBATE

PURPOSE

The Residential Developer EV Outlet Rebate is designed to enable future residential customer use of L2 home charging to charge their personal EV. The primary objectives of this rebate are to provide incentives to builders and developers to install a EV outlet during construction.

AVAILABILITY

This incentive is available to builders and developers for new residential construction projects while funds remain.

Third-party EVSE vendors or EVSPs are not eligible to apply for a Residential Developer EV Outlet Rebate.

ELIGIBLE MEASURES AND INCENTIVES

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.

PROGRAM PROVISIONS

Builders and developers must request a rebate for a project by submitting an application through the Evergy website (www.evergy.com). Rebates will be distributed on a first-come basis according to the date of the application. Eligible applicants must comply with the application instructions and agree to the Terms and Conditions to receive the rebate. By applying for the rebate, the applicant agrees that the project may be subject to on-site inspections by Evergy. A maximum of one (1) rebate is available per residence.

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TRANSPORTATION ELECTRIFICATION PROGRAM

The rebate will be issued upon completion of the application process, which will require the applicant to provide proof of outlet installation by a certified electrician, costs, and date. Rebates must be claimed within six (6) months of date of installation. Rebate recipients must agree to participate in Evergy surveys related to their experience with the rebate and other relevant topics.

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TRANSPORTATION ELECTRIFICATION PROGRAM

COMMERCIAL EV CHARGING REBATE

PURPOSE

The Commercial EV Charging Rebate is designed to encourage development of EVSE at commercial customer sites. The primary objective of this rebate is to provide incentives to EV charging station site hosts to reduce the cost of make-ready infrastructure and EVSE.

AVAILABILITY

This incentive is available to commercial customers being served under any commercial rate schedule while funds remain.

ELIGIBLE MEASURES AND INCENTIVES

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.

The maximum number of qualified EVSE ports at each site are as follows:

TRANSPORTATION ELECTRIFICATION PROGRAM

Category	Level 2 Ports	DCFC Units	Maximum per Site
Commercial Highway Corridor	2	2	$45,000
Commercial Public	6	2	$55,000
Commercial Workplace or Fleet	10	2 (1)	$65,000
Commercial Multifamily	10	0	$25,000

(1) Only available where EVSE will serve fleet operations

Notwithstanding the limits on incentives at each individual site, business entities who install at public, workplace, fleet, or multifamily locations may not receive total incentives under the program of more than $500,000.

PROGRAM PROVISIONS

Evergy will develop and maintain a list of qualified EVSE eligible for rebates and will make the list available on the Evergy website (www.evergy.com). Evergy will also develop and publish criteria for the individual site types: highway corridor, public, workplace, fleet, and multifamily.

Customers must request a rebate for a project by submitting an application through the Evergy website (www.evergy.com). Projects must be pre-approved by the Company before the project start date to be eligible for a rebate. Applications will be evaluated based on site suitability and the rebates will be distributed on a first-come basis according to the date of the customer's application. Eligible customers must comply with the application instructions and agree to the Terms and Conditions to receive the rebate. By applying for the rebate, the applicant agrees that the project may be subject to on-site inspections by Evergy.

A business entity with multiple sites may participate by submitting an application for each site. The maximum amount of each rebate will be calculated based on the number of L2 and/or DCFC EVSE installed up to the maximum allowable amount per site.

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The rebate will be issued upon completion of the project's final application process, which will require the customer to provide proof of equipment purchase, installation, costs, and dates. Rebates must be claimed within six (6) months of date of installation. Customers must agree to provide the Company access to charger utilization data, install stations in dedicated EV parking spaces, and agree to participate in potential future demand response events, if deemed necessary. Additionally, rebate recipients must agree to participate in Evergy surveys related to their experience with the rebate and other relevant topics.

Payment will be made within sixty (60) days of completion of project and validation of customer's W-9 information.

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BUSINESS EV CHARGING SERVICE

AVAILABILTY

Electric service is available under this schedule through one (1) meter at point on the Company's existing distribution facilities. Single phase or if present at the location, three phase service is available at the secondary voltage of transformation facilities supplied from the Company's distribution system. At the Company's discretion, service may be provided through more than one metering point where it is economical for the Company to do so.

APPLICABILITY

To any non-residential customer using electric service for the exclusive use of charging electric vehicles. The load served under this Schedule will be separately metered from all other commercial electrical loads and will be used exclusively for the purpose of charging electric vehicles. This Schedule allows other ancillary uses, limited to no more than 5 kW, that are specifically related to the provision of electric vehicle charging, such as area lighting.

TERM OF SERVICE

Service shall be provided for a fixed term of not less than one (1) year.

CARBON FREE ENERGY OPTION

Customers have the option to elect that all of the electricity under this schedule to be from carbon free resources. The Company, at its sole discretion, agrees to generate or purchase energy from carbon free sources and/or purchase and retire renewable energy credits in an amount at least equal to the level of service purchased under this tariff. The amount of carbon free energy available under this tariff shall be determined by the Company based on the amount of carbon free energy sources and renewable energy credits available to the Company.

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BUSINESS EV CHARGING SERVICE

RATE FOR SERVICE

A. Customer Charge (Per Month) $118.40

B. Facility Charge (Per kW of Billing Demand per month) $2.32

C. Energy Charge per Pricing Period (Per kWh)

	Summer Season	Winter Season
On-Peak Period	$0.22062	$0.14360
Off-Peak Period	$0.07879	$0.04787
Super Off-Peak Period	$0.01559	$0.01184

D. Carbon Free Energy Option Charge (Per kWh) $0.00250

MINIMUM MONTHLY BILL

The Minimum Monthly Bill shall be equal to the sum of the Customer Charge and Facilities Charge.

SEASONS

The Summer Season is four consecutive months, beginning and effective June 1 and ending September 30 inclusive. The Winter Season is eight consecutive months, beginning and effective October 1 and ending May 31. Customer bills for meter reading periods including one or more days in both seasons will reflect the usage in each season.

BUSINESS EV CHARGING SERVICE

PRICING PERIODS

Pricing periods are established in Central Time year-round. The hours for each pricing period are as follows:

On-Peak:	2 p.m. – 8 p.m., Monday through Friday, excluding Holidays
Super Off-Peak	12 a.m. – 6 a.m. every day
Off- Peak Period:	All other hours

HOLIDAYS

Holidays are New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day.

MONTHLY MAXIMUM DEMAND

The Monthly Maximum Demand shall be the customer's maximum fifteen (15) minute integrated demand measured in kW during the current billing period.

FACILITIES DEMAND

Facilities Demand shall be equal to the highest Monthly Maximum Demand recorded in the last twelve (12) months including the current month. If there are less than eleven (11) previous billing periods, the determination will be made using all available previous billing periods.

BUSINESS EV CHARGING SERVICE

ADJUSTMENTS AND SURCHARGES

The rates hereunder are subject to adjustment as provided in the following schedules:

- Retail Energy Cost Adjustment
- Energy Efficiency Rider
- Environmental Cost Recovery Rider
- Renewable Energy Program Rider
- Property Tax Surcharge
- Tax Adjustment
- Transmission Delivery Charge

Plus all applicable adjustments and surcharges.

REGULATIONS

Service under this rate schedule is subject to Company's General Rules and Regulations presently on file with the State Corporation Commission of Kansas and any modifications subsequently approved.

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Appendix C. Cost Effectiveness Evaluation

- Kansas Metro
- Kansas Central

Cost Effectiveness Evaluation of On-Road Transportation Electrification

Evergy, Kansas Metro

Revised May 2021

Prepared for:
Evergy

Prepared by:
ICF

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Executive Summary

Evergy has identified critical investments in transportation electrification that will further enable electric vehicle (EV) adoption in its Kansas Metro service territory, including innovative programs focused on supporting charging infrastructure build-out across a variety of customer applications. This cost effectiveness evaluation (also referred to as a cost-benefit analysis) serves as an important background document supporting Evergy's investments. ICF's analysis shows that increased EV adoption can yield net societal and customer benefits, while also benefiting EV drivers—and that these benefits have the potential to increase with more rapid EV adoption. Evergy's proposed transportation electrification programs are important steps to realizing the broader benefits characterized in ICF's analysis.

ICF's analysis concludes that all utility customers benefit from EV adoption. Specifically, ICF estimates a net present value (NPV) of approximately $72.3 million in customer benefits through 2040 under a medium EV adoption scenario, which is equivalent to customer benefits of $1,679 per EV adopted.[1] Utility customers include all that pay Evergy for electrical service, including residential, commercial, and industrial sectors. This analysis employs the conservative assumption that all Evergy customers bear commercial charging infrastructure costs required to support the projected level of EV adoption.

In addition to the Evergy customer perspective, ICF considered the impact of EV adoption from participant and societal perspectives. For this analysis, a "participant" is defined as an EV driver in Evergy's service territory and "society" is defined as the general society within the Kansas Metro service territory. The societal benefits are primarily economic, though there are environmental benefits that are not financially quantified in this analysis.

ICF's analysis demonstrates a *societal* net benefit ranging from approximately $2,143 per EV to $5,375 per EV with a low incremental vehicle pricing scenario depending on the EV adoption scenario (i.e., low, medium, high).

Also with a low incremental vehicle pricing scenario, ICF's analysis demonstrates a *participant* net benefit ranging from approximately $562 per EV to $3,092 per EV depending on the EV adoption scenario. The benefit level is also dependent on whether participants can take advantage of federal tax incentives or lower cost non-residential charging (e.g., when a charging facility can reduce the fees it collects from EV drivers).

ICF's analysis does not include the potential benefits of improved utility load factor and avoided distribution costs through improved asset management associated with managed charging and other efforts to shift EV charging activity to off-peak periods. Even modest benefits from improved utility load factor and distribution asset management will likely offset any cost increases presented by ICF in this evaluation. Actively managing charging may also help decrease net societal costs by reducing the increased demand through better utilization of charging infrastructure. While it was not assessed as part of this cost effectiveness evaluation, multiple studies conducted by ICF and others demonstrate the

[1] Across different assumptions, these benefits range from $17.7 million to $176.4 million. On a per vehicle basis, this benefit translates to between approximately $1,581 and $2,283 per EV adopted.

beneficial impact of managed charging. A comparison between the costs of charging that increases peak demand compared to no impacts on peak demand provides a proxy for potential benefits from managed charging.

1. Introduction

Evergy has identified multiple investments in transportation electrification that will further encourage EV adoption in Kansas. With the help of Evergy's Clean Charge Network, the EV market in Evergy's Kansas Metro service territory has grown over the past five years, with EVs on the road increasing by 506% from 500 EVs in 2015 to 3,030 EVs in September, 2020.[2] Roughly 55% of those light-duty EVs are battery electric vehicles (BEVs) and 45% of EVs are plug-in hybrid electric vehicles (PHEVs).

This cost effectiveness evaluation serves as an important background document supporting Evergy's development of innovative programs and infrastructure investments to encourage EV adoption in its Kansas Metro service territory. This analysis focuses on light-duty vehicles, currently the industry sector with the greatest opportunity to electrify, though medium-duty and heavy-duty vehicle electrification opportunities are emerging.

Table 1 below summarizes the costs and benefits for each of the three perspectives—societal, participant (or EV driver), and customer—considered in this analysis, with costs listed in red (C) and benefits listed in green (B). It is important to note that non-monetized benefits that are sometimes considered in the societal cost test, such as emission reductions, were not incorporated into this cost effectiveness evaluation. The analysis considers the impacts of increased EV adoption from 2021 through 2031, and across the added vehicles' lifespans through 2041. The ongoing costs and benefits are indicated in Table 1 with asterisks.

Table 1. Summary of Costs and Benefits

	Costs			Benefits		
Energy Costs	Societal	Participant	Customer	Societal	Participant	Customer
Energy Supply*	C		C			
Capacity Supply*	C		C			
Retail Electricity Bills*		C				B
Vehicle Costs						
Incremental Vehicle Price	C	C				
Federal Tax Credit				B	B	
O&M Costs*				B	B	
Avoided Gasoline Costs*				B	B	
Charging Infrastructure Costs						
Level 2 Residential	C	C				
Level 2 Nonresidential	C		C			
DC Fast Charging (DCFC)	C		C			

[2] EPRI provided Evergy historical data and projection estimates data for EV populations, sales, and emission reductions in September 2020.

There are additional climate and public health benefits associated with EVs that are not financially quantified in this analysis. For example, the Electric Power Research Institute, Inc. (EPRI) estimates between 8,479 and 187,175 metric tons of greenhouse gases could be reduced annually through increased EV adoption within Evergy's Kansas Metro service territory.[3]

Section 2 of this report provides an overview of data and assumptions employed in the analysis and Section 3 summarizes ICF's findings.

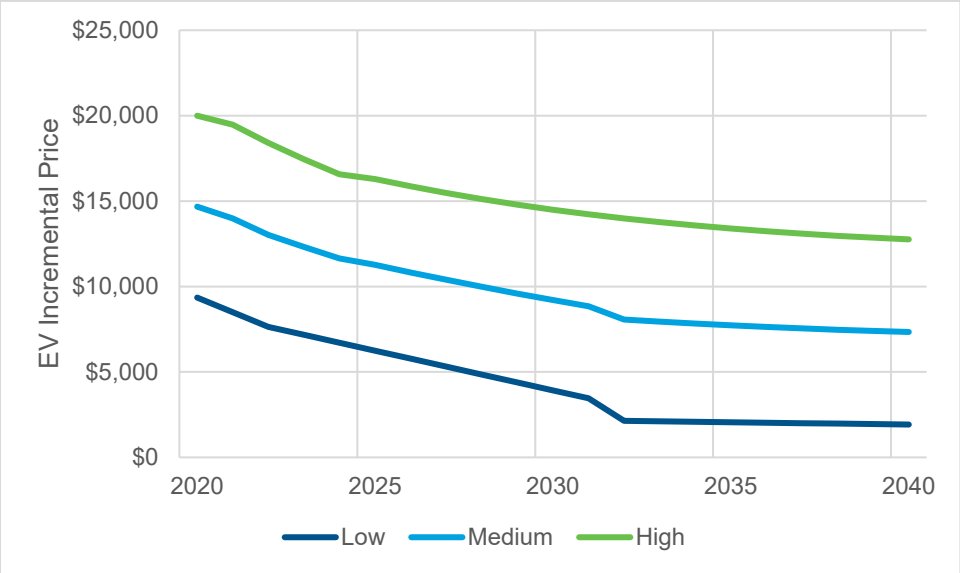
2. Data & Assumptions

Electric Vehicles

EV Pricing

The rate of anticipated decline of EV pricing has become a subject of considerable debate, particularly because of recent market research conducted by analysts such as Bloomberg New Energy Finance (BNEF). BNEF continues to forecast rapidly declining battery prices, which contrasts sharply with more conservative estimates from the U.S. Energy Information Administration (EIA), as outlined in the Annual Energy Outlook (AEO). The range of EV pricing assumptions makes for difficult choices in cost-benefit analyses; in this analysis, ICF used three different pricing outlooks. Figure 1 shows the assumed low, medium, and high EV incremental price trajectories employed in this analysis.

Figure 1. EV Incremental Pricing in ICF Modeling



[3] EPRI provided Evergy historical data and projection estimates data for EV populations, sales, and emission reductions in September 2020.

The low EV incremental pricing (see dark blue line in Figure 1) is consistent with a methodology that ICF developed in partnership with E3 and MJ Bradley as part of a cost-benefit analysis of EV adoption in New York State.[4] In that case, the project team modeled incremental EV pricing based on the cost of the "glider" (a simple vehicle chassis and body) and the cost of batteries ($/kWh), electric drive train ($/kW), and gasoline drivetrain (for PHEVs, in units of $/kW). The incremental vehicle pricing of the Ford Fusion was used as a baseline.

The high EV incremental pricing is consistent with 2020 AEO projections (see green line in Figure 1) across the various light-duty vehicle segments included in EIA's modeling.

The medium EV incremental pricing is an average of the low and high projections.

EV Purchase Incentives

ICF assumed that the federal EV tax credit (i.e., the Qualified Plug-in Electric Drive Motor Vehicle Credit) will be available until 2025. Note, however, that the federal tax credit has a nuanced sunset provision—the tax credit is phased out for each manufacturer based on total vehicle sales. The phase-out is described here:

> The qualified plug-in electric drive motor vehicle credit phases out for a manufacturer's vehicles over the one-year period beginning with the second calendar quarter after the calendar quarter in which at least 200,000 qualifying vehicles manufactured by that manufacturer have been sold for use in the United States (determined on a cumulative basis for sales after December 31, 2009) ("phase-out period"). Qualifying vehicles manufactured by that manufacturer are eligible for 50 percent of the credit if acquired in the first two quarters of the phase-out period and 25 percent of the credit if acquired in the third or fourth quarter of the phase-out period. Vehicles manufactured by that manufacturer are not eligible for a credit if acquired after the phase-out period.[5]

Tesla and General Motors have already passed the 200,000-vehicle threshold. Given that there is no specific date for a phase out of the federal tax credit, ICF assumed that it would be available through 2025.

EV Operations and Maintenance Costs

Market research indicates that EVs have lower operations and maintenance (O&M) costs than conventional vehicles because of fewer oil changes, less wear and tear on brakes, and other factors. These cost savings are in addition to those related to avoided gasoline fuel costs. For the purposes of this analysis ICF used maintenance cost assumptions from the Argonne National Laboratory's Alternative

[4] See Benefit-Cost Analysis of Electric Vehicle Deployment in New York State, February 2019, https://www.nyserda.ny.gov/-/media/Files/Publications/Research/Transportation/19-07-Benefit-Cost-Analysis-EV-Deployment-NYS.pdf

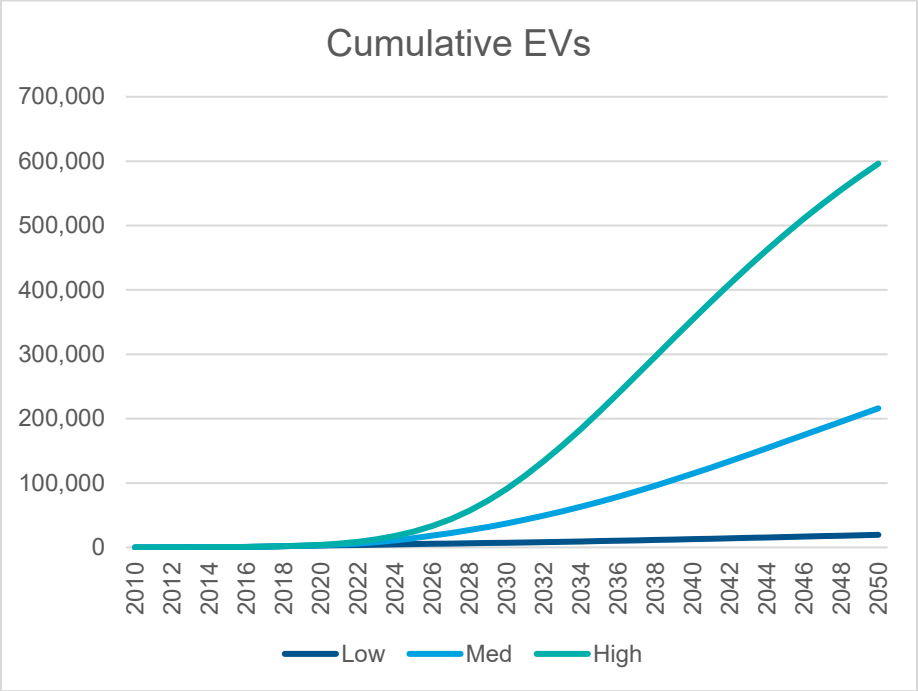
[5] Internal Revenue Service. Plug-In Electric Drive Vehicle Credit (IRC 30D), Accessed January 2021 online via https://www.irs.gov/businesses/plug-in-electric-vehicle-credit-irc-30-and-irc-30d.

Fuel Life-Cycle Environmental and Economic Transportation (AFLEET) tool. ICF assumed a 1.7 cents per mile difference between EVs and conventional vehicles; assuming 13,000 annual vehicles miles traveled (VMT), which results in $221 O&M savings per vehicle per year.

EV Adoption

Like forecasting battery EV pricing trajectories, EV adoption trajectories can stir considerable debate among stakeholders—including advocates and detractors of electrification alike. EPRI provided low, medium, and high EV population projections with their associated energy (MWh) impacts for each Evergy jurisdiction past 2019.[6] ICF used these projections to estimate year-by-year EV adoption out to 2040 within the Evergy Kansas Metro service territory for this analysis. Figure 2 shows EPRI's low, medium, and high EV adoption scenarios.

Figure 2. EPRI Evergy Kansas Metro EV Adoption Scenarios Used in ICF Modeling



ICF explored potential market impacts of the Coronavirus pandemic on these EV projections, and while there may be short-term impacts, the long-term impacts were not significant enough to warrant adjusting the original EPRI projections. It is also anticipated that the pandemic may not impact electric car sales as much as the overall passenger car market.[7]

[6] EPRI EV projections use the methodology outlined in "Plug-in Electric Vehicle Market Projections: Scenarios and Impacts," Report 3002011613 (December 2017). EPRI calibrates projections based on county-level EV registration data.

[7] As shown in IEA's Global EV Outlook 2020, https://www.iea.org/reports/global-ev-outlook-2020

Fuel Pricing

Electric Rates for EV Charging

ICF's modeling uses a weighted mix of residential and commercial rates to reflect the distribution of a typical EV's charging load profile. EPRI and Evergy provided the charging load profiles used in this analysis, which estimate that typical EVs use 70% residential charging, 20% workplace charging, and 10% public charging. ICF used Evergy's Kansas Metro Residential, Small General Service, Medium General Service and Public Charging rates, which resulted in an average rate of $0.13/kWh. Further, ICF escalated residential rates in line with electric supply cost escalation rates at an average annual rate of 3%. This is intended to be a conservative assumption and does not reflect Evergy's expectations for future retail rates.

Energy Supply Costs

To calculate the incremental dollar costs to society and the utility customer resulting from the changes in electrical loads, ICF used energy supply costs—including the energy costs and capacity costs. Evergy provided the energy supply costs and projections used in this analysis. Evergy's energy costs are sourced from the Company's Integrated Resource Plan process, which develops a Southwest Power Pool (SPP) Locational Marginal Price forecast. Capacity supply costs include cost for generation and changes in SPP transmission fees.

Evergy's generation costs are based on a probability analysis of plant retirements and load forecast scenarios. In years where net capacity is long, a market-based approach is used to value capacity. In years where capacity is short, the levelized $/kW-year of a combustion turbine is used to value capacity.

SPP transmission fees are based on the monthly system peak demand. The estimated changes in SPP transmission fees used in this analysis are based on the impacts of utility programs (EV or otherwise) on monthly system peak demand.

Gasoline Pricing

Gasoline pricing assumptions were developed using a combination of wholesale gasoline pricing, EIA projections for the 2020 AEO, and applicable state and federal taxes. Table 2 below summarizes the gasoline pricing assumptions applied in the modeling.

Table 2. Gasoline Pricing Components used in ICF Modeling

Parameter	Description
Wholesale price of gasoline	ICF used 2020 national average for wholesale gasoline prices and projected based on energy prices reported for the Transportation sector from the AEO 2020 Reference Case. Inclusive of Distribution & Marketing Costs.
Federal excise tax	Held constant at 18.4 ¢/gallon.
State (KS) gasoline taxes	Held constant at 24.0 ¢/gallon.

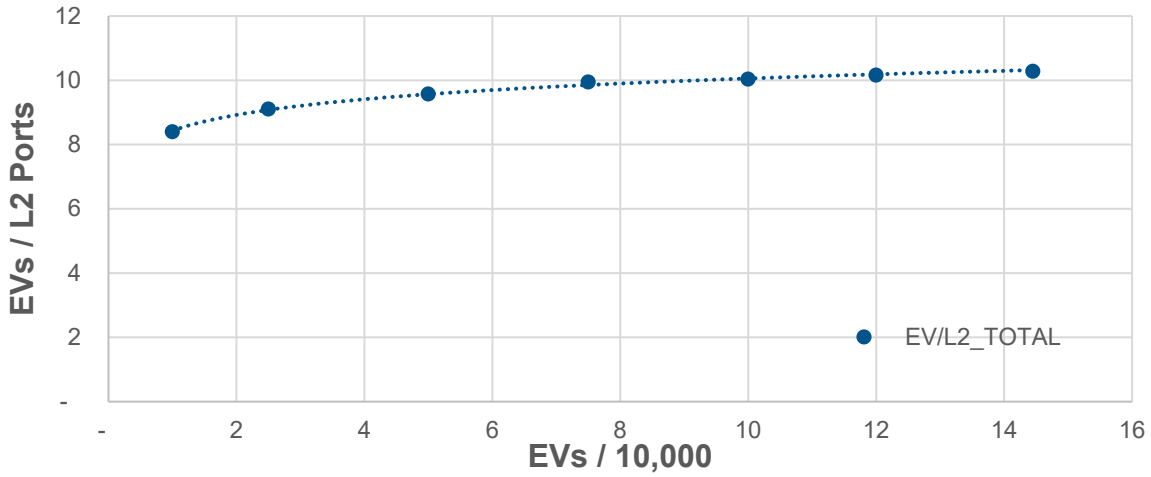
EV Charging Infrastructure

Charging Infrastructure Deployment

ICF developed assumptions for the quantity of chargers needed to support the EPRI EV adoption scenarios based on outputs from the National Renewable Energy Laboratory's EVI-Pro Lite tool.[8] These projections vary by level of charging (Level 2 and DCFC) and by charging location (residential and non-residential).

- For residential charging, ICF assumed 20% of single-family homes and 10% of multi-family homes with EVs will upgrade to Level 2 charging through 2035. Past 2035 this factor increases to 40% for single-family homes and 25% of multi-family homes. These estimates are based on feedback and territory insights from Evergy.
- For non-residential Level 2 charging, ICF fit a curve to outputs from the EVI-Pro Lite tool across different EV adoption rates for the Kansas City area to estimate the amount of public and workplace charging that would be needed (see Figure 3).

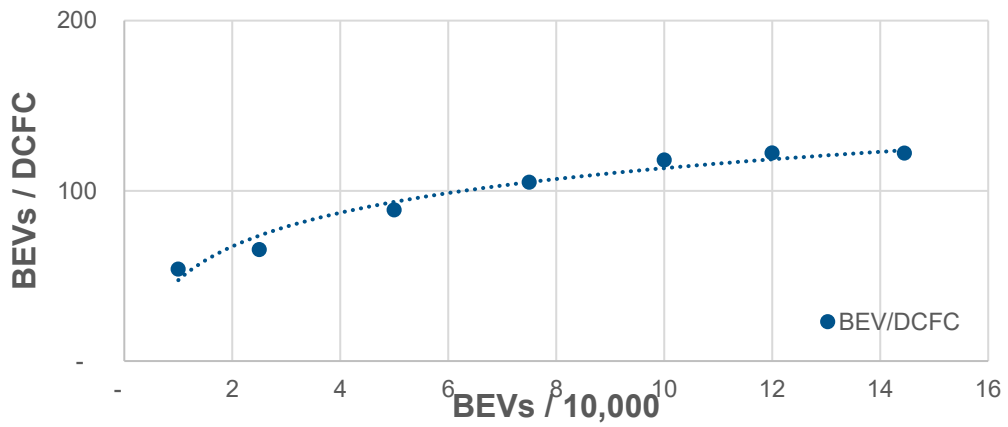
Figure 3. Level 2 Ports as a Function of EVs in Evergy's Kansas Metro Service Territory



[8] Electric Vehicle Infrastructure Projection Tool (EVI-Pro) Lite, via the Alternative Fuels Data Center, accessible online at https://afdc.energy.gov/evi-pro-lite.

- For DCFC (assumed to be units providing at least 50 kW), ICF fit a curve to outputs from the EVI-Pro Lite tool across different BEV adoption rates for the Kansas City area to estimate the amount of DCFCs that would be needed (see Figure 4).

Figure 4. DC Fast Chargers as a Function of BEVs in Evergy's Kansas Metro Service Territory



These relationships were used to estimate the quantity of Level 2 ports and DCFCs that would need to be installed to support the projected EV adoption in Evergy's Kansas Metro service territory.

Charging Infrastructure Costs

ICF's analysis applied the following cost assumptions for residential charging, commercial (non-residential) charging, and DCFC infrastructure.

Table 3. Charging Infrastructure Costs used in ICF Modeling

Charger Type	Ports per EVSE	Cost Assumption
Residential L1	N/A	$0
Residential L2	1	$1,200
Commercial L2	2	$14,000
DCFC	1	$75,000

- For residential charging installations, ICF assumed a total cost to the EV driver of $1,200, including $500 for the charger and total installation costs of $700 per Level 2 charger. ICF assumed Level 1 infrastructure would utilize existing outlets at no cost.
- For commercial charging installations, ICF used data provided by various stakeholders across multiple jurisdictions, including actuals from Evergy installations to date, concluding that the average cost for Level 2 dual-port installations was around $14,000. This cost is inclusive of the EV charger, necessary make-ready, and installation.
- For DCFC, ICF assumed that equipment would be able to deliver up to 150 kW, with a total cost of $75,000 per unit. This estimate is informed by actual costs from Evergy installations to date, as well as data provided by various stakeholders across multiple jurisdictions, and includes the charging station, site make-ready, and installation costs.

In this analysis, ICF assumed the participants (EV drivers) would bear the burden of the residential charging infrastructure costs. To conservatively represent the impacts of the utility involvement in the market, ICF applied the commercial L2 and DCFC infrastructure costs as a cost to all Evergy customers. The estimated infrastructure costs include the EV charging equipment, make-ready (both customer-side and utility-side facilities), and equipment installation. It is important to note that actual infrastructure costs can vary significantly based on the project and site. Utility-side facilities may not be required in all applications. ICF leveraged actual cost data and insight from Evergy's charging station installation experience in addition to available cost figures from other sources to derive cost assumptions.

3. Summary Results

ICF's analysis demonstrates that there are net customer benefits associated with EV adoption within Evergy's Kansas Metro service territory. There is a net present value (NPV) of approximately $72.3 million in customer benefits from 2021 through 2040 under the medium EV adoption scenario, which is equivalent to customer benefits of $1,679 per EV deployed. It is important to note that this analysis does not include ancillary benefits, such as health and environmental benefits, that would likely increase the estimated benefits of EVs to customers. Other benefits not included are those resulting from improving the utility load factor and better distribution asset management.

Participants (EV drivers within Evergy's Kansas Metro service territory) benefit the most when EV pricing is assumed to be low and when they can take advantage of lower electric rates relative to gasoline prices. ICF estimates a NPV participant benefit of $50.8 million, or $1,179 per EV deployed, when the low incremental EV pricing scenario is used with the medium EV adoption scenario. This becomes a maximum NPV cost of $220.7 million for EV drivers or -$5,121 per EV deployed when the high incremental EV pricing assumption is employed.

The societal impacts of EV adoption are most sensitive to EV pricing. Under the low incremental EV pricing scenario and medium EV adoption scenario, ICF reports a net benefit to society of $123.2 million, valued at approximately $2,858 per EV deployed. However, as EV pricing increases to the high incremental cost, ICF reports net societal costs of $148.3 million or nearly -$3,442 per EV deployed.

The subsections below review the variations observed in ICF's analysis across low, medium, and high scenarios for incremental EV pricing and EV adoption.

Variation in EV Pricing

ICF's modeling is most sensitive to EV pricing (the capital costs to purchase an EV). ICF views this as reinforcement of the concept that increased adoption is needed to help reduce EV pricing through increased demand. In addition to efforts by the utility to support increased adoption, as well as technology advancements (e.g., batteries), ICF expects that more EVs available from automakers and government initiatives have the potential to increase demand and drive down costs. Furthermore, lower incremental EV pricing will also reduce the impact as the federal tax credit is phased out with higher adoption.

The tables below summarize the net societal, participant, and customer impacts across the low, medium, and high incremental EV pricing scenarios. The other parameters, including EV adoption and electricity rates, are unchanged.

EV Adoption	Medium Scenario		
EV Pricing	Low Scenario		
Rate (Res / Comm)	Residential, Small General Service, Medium General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	$123.2	$50.8	$72.3
Per EV Deployed	$2,858	$1,179	$1,679

EV Adoption	Medium Scenario		
EV Pricing	Medium Scenario		
Rate (Res / Comm)	Residential, Small General Service, Medium General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	-$12.6	-$84.9	$72.3
Per EV Deployed	-$292	-$1,971	$1,679

EV Adoption	Medium Scenario		
EV Pricing	High Scenario		
Rate (Res / Comm)	Residential, Small General Service, Medium General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	-$148.3	-$220.7	$72.3
Per EV Deployed	-$3,442	-$5,121	$1,679

Variation by EV Adoption Scenarios

The tables below show the variation in societal, participant, and customer impacts as a function of changing the rate of EV adoption in Evergy's Kansas Metro service territory across the low, medium, and high adoption scenarios. Other parameters—including EV pricing and rates—are otherwise unchanged. As EV adoption increases, so do the societal, participant, and customer net benefits.

EV Adoption	Low Scenario		
EV Pricing	Low Scenario		
Rate (Res / Comm)	Residential, Small General Service, Medium General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	$41.7	$24	$17.7
Per EV Deployed	$5,375	$3,092	$2,283

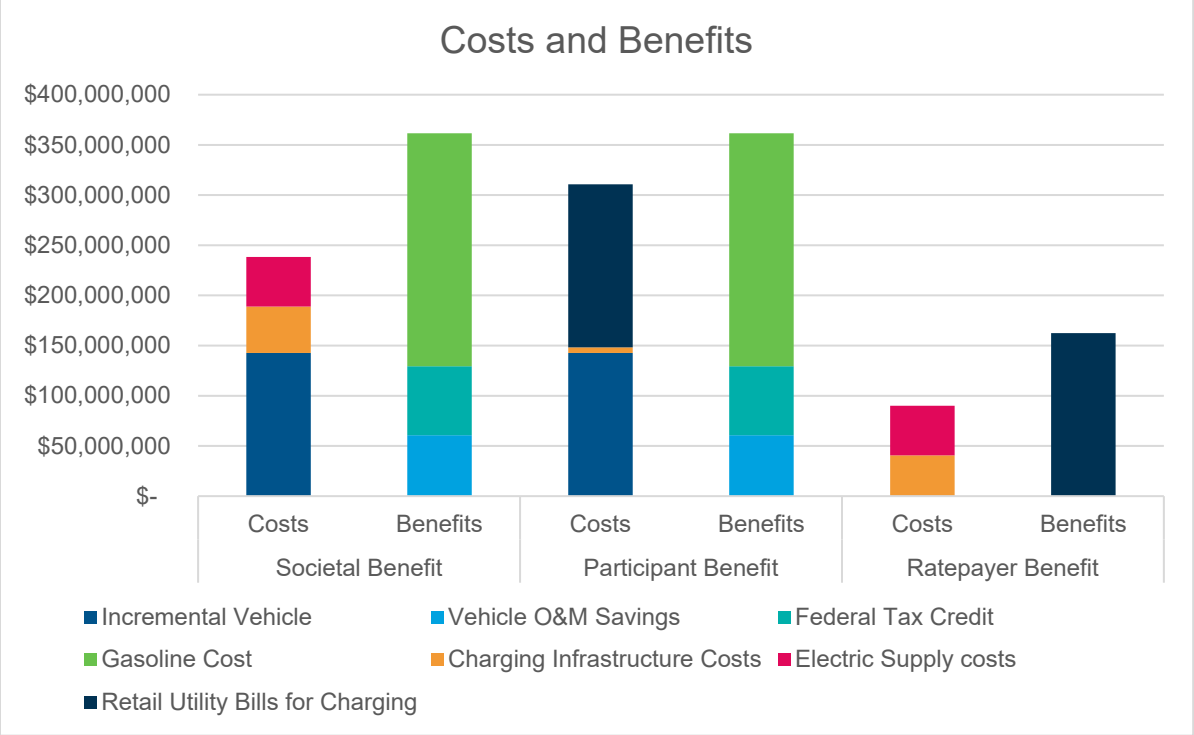
EV Adoption	Medium Scenario		
EV Pricing	Low Scenario		
Rate (Res / Comm)	Residential, Small General Service, Medium General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	$123.2	$50.8	$72.3
Per EV Deployed	$2,858	$1,179	$1,679

EV Adoption	High Scenario		
EV Pricing	Low Scenario		
Rate (Res / Comm)	Residential, Small General Service, Medium General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	$239.1	$62.7	$176.4
Per EV Deployed	$2,143	$562	$1,581

Conclusion

Increased EV adoption with low incremental EV pricing will benefit EV drivers, Evergy's customers, and society throughout the Kansas Metro service territory. Figure 5 below highlights how the NPV benefits outweigh the costs from the societal, participant, and customer perspectives under the medium EV adoption scenario and low incremental EV pricing scenario. It is important to note that this analysis does not include ancillary benefits that would likely increase the estimated benefits of EVs to customers, including improving the utility load factor and better distribution asset management.

Figure 5. Impacts of Medium EV Adoption Scenario with Low Incremental EV Pricing



Cost Effectiveness Evaluation of On-Road Transportation Electrification

Evergy, Kansas Central

Revised May 2021

Prepared for:
Evergy

Prepared by:
ICF

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Executive Summary

Evergy has identified critical investments in transportation electrification that will further enable electric vehicle (EV) adoption in its Kansas Central service territory, including innovative programs focused on supporting charging infrastructure build-out across a variety of customer applications. This cost effectiveness evaluation (also referred to as a cost-benefit analysis) serves as an important background document supporting Evergy's investments. ICF's analysis shows that increased EV adoption can yield net societal and customer benefits, while also benefiting EV drivers—and that these benefits have the potential to increase with more rapid EV adoption. Evergy's proposed transportation electrification programs are important steps to realizing the broader benefits characterized in ICF's analysis.

ICF's analysis concludes that all utility customers benefit from EV adoption. Specifically, ICF estimates a net present value (NPV) of approximately $46.9 million in customer benefits through 2040 under a medium EV adoption scenario, which is equivalent to customer benefits of $971 per EV adopted.[1] Utility customers include all that pay Evergy for electrical service, including residential, commercial, and industrial sectors. This analysis employs the conservative assumption that all Evergy customers bear commercial charging infrastructure costs required to support the projected level of EV adoption.

In addition to the Evergy customer perspective, ICF considered the impact of EV adoption from participant and societal perspectives. For this analysis, a "participant" is defined as an EV driver in Evergy's service territory and "society" is defined as the general society within the Kansas Metro service territory. The societal benefits are primarily economic, though there are environmental benefits that are not financially quantified in this analysis.

ICF's analysis demonstrates a *societal* net benefit ranging from approximately $1,942 per EV to $5,164 per EV with a low incremental vehicle pricing scenario depending on the EV adoption scenario (i.e., low, medium, high).

Also with a low incremental vehicle pricing scenario, ICF's analysis demonstrates a *participant* net benefit ranging from approximately $955 per EV to $3,872 per EV depending on the EV adoption scenario. The benefit level is also dependent on whether participants can take advantage of federal tax incentives or lower cost non-residential charging (e.g., when a charging facility can reduce the fees it collects from EV drivers).

ICF's analysis does not include the potential benefits of improved utility load factor and avoided distribution costs through improved asset management associated with managed charging and other efforts to shift EV charging activity to off-peak periods. Even modest benefits from improved utility load factor and distribution asset management will likely offset any cost increases presented by ICF in this evaluation. Actively managing charging may also help decrease net societal costs by reducing the increased demand through better utilization of charging infrastructure. While it was not assessed as part of this cost effectiveness evaluation, multiple studies conducted by ICF and others demonstrate the

[1] Across different assumptions, these benefits range from $7.5 million to $147.1 million. On a per vehicle basis, this benefit translates to between approximately $971 and $1,292 per EV adopted.

beneficial impact of managed charging. A comparison between the costs of charging that increases peak demand compared to no impacts on peak demand provides a proxy for potential benefits from managed charging.

1. Introduction

Evergy has identified multiple investments in transportation electrification that will further encourage EV adoption in Kansas. With the help of Evergy's Clean Charge Network, the EV market in Evergy's Kansas Central service territory has grown over the past five years, with EVs on the road increasing by 322% from 473 EVs in 2015 to 1,997 in September, 2020.[2] Roughly 55% of those light-duty EVs are battery electric vehicles (BEVs) and 45% of EVs are plug-in hybrid electric vehicles (PHEVs).

This cost effectiveness evaluation serves as an important background document supporting Evergy's development of innovative programs and infrastructure investments to encourage EV adoption in its Kansas Central service territory. This analysis focuses on light-duty vehicles, currently the industry sector with the greatest opportunity to electrify, though medium-duty and heavy-duty vehicle electrification opportunities are emerging.

Table 1 below summarizes the costs and benefits for each of the three perspectives—societal, participant (or EV driver), and customer—considered in this analysis, with costs listed in red (C) and benefits listed in green (B). It is important to note that non-monetized benefits that are sometimes considered in the societal cost test, such as emission reductions, were not incorporated into this cost effectiveness evaluation. The analysis considers the impacts of increased EV adoption from 2021 through 2031, and across the added vehicles' lifespans through 2041. The ongoing costs and benefits are indicated in Table 1 with asterisks.

Table 1. Summary of Costs and Benefits

	Costs			Benefits		
Energy Costs	Societal	Participant	Customer	Societal	Participant	Customer
Energy Supply*	C		C			
Capacity Supply*	C		C			
Retail Electricity Bills*		C				B
Vehicle Costs						
Incremental Vehicle Price	C	C				
Federal Tax Credit				B	B	
O&M Costs*				B	B	
Avoided Gasoline Costs*				B	B	
Charging Infrastructure Costs						
Level 2 Residential	C	C				
Level 2 Nonresidential	C		C			
DC Fast Charging (DCFC)	C		C			

[2] EPRI provided Evergy historical data and projection estimates data for EV populations, sales, and emission reductions in September 2020.

There are additional climate and public health benefits associated with EVs that are not financially quantified in this analysis. For example, the Electric Power Research Institute, Inc. (EPRI) estimates between 6,335 and 285,259 metric tons of greenhouse gases could be reduced annually through increased EV adoption within Evergy's Kansas Central service territory.[3]

Section 2 of this report provides an overview of data and assumptions employed in the analysis and Section 3 summarizes ICF's findings.

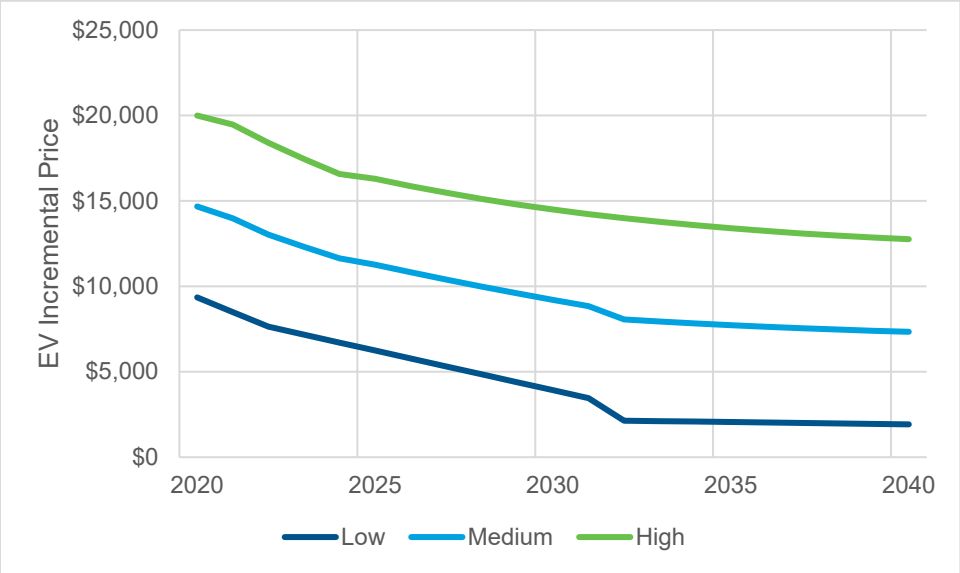
2. Data & Assumptions

Electric Vehicles

EV Pricing

The rate of anticipated decline of EV pricing has become a subject of considerable debate, particularly because of recent market research conducted by analysts such as Bloomberg New Energy Finance (BNEF). BNEF continues to forecast rapidly declining battery prices, which contrasts sharply with more conservative estimates from the U.S. Energy Information Administration (EIA), as outlined in the Annual Energy Outlook (AEO). The range of EV pricing assumptions makes for difficult choices in cost-benefit analyses; in this analysis, ICF used three different pricing outlooks. Figure 1 shows the assumed low, medium, and high EV incremental price trajectories employed in this analysis.

Figure 1. EV Incremental Pricing in ICF Modeling



[3] EPRI provided Evergy historical data and projection estimates data for EV populations, sales, and emission reductions in September 2020.

The low EV incremental pricing (see dark blue line in Figure 1) is consistent with a methodology that ICF developed in partnership with E3 and MJ Bradley as part of a cost-benefit analysis of EV adoption in New York State.[4] In that case, the project team modeled incremental EV pricing based on the cost of the "glider" (a simple vehicle chassis and body) and the cost of batteries ($/kWh), electric drive train ($/kW), and gasoline drivetrain (for PHEVs, in units of $/kW). The incremental vehicle pricing of the Ford Fusion was used as a baseline.

The high EV incremental pricing is consistent with 2020 AEO projections (see green line in Figure 1) across the various light-duty vehicle segments included in EIA's modeling.

The medium EV incremental pricing is an average of the low and high projections.

EV Purchase Incentives

ICF assumed that the federal EV tax credit (i.e., the Qualified Plug-in Electric Drive Motor Vehicle Credit) will be available until 2025. Note, however, that the federal tax credit has a nuanced sunset provision—the tax credit is phased out for each manufacturer based on total vehicle sales. The phase-out is described here:

> The qualified plug-in electric drive motor vehicle credit phases out for a manufacturer's vehicles over the one-year period beginning with the second calendar quarter after the calendar quarter in which at least 200,000 qualifying vehicles manufactured by that manufacturer have been sold for use in the United States (determined on a cumulative basis for sales after December 31, 2009) ("phase-out period"). Qualifying vehicles manufactured by that manufacturer are eligible for 50 percent of the credit if acquired in the first two quarters of the phase-out period and 25 percent of the credit if acquired in the third or fourth quarter of the phase-out period. Vehicles manufactured by that manufacturer are not eligible for a credit if acquired after the phase-out period.[5]

Tesla and General Motors have already passed the 200,000-vehicle threshold. Given that there is no specific date for a phase out of the federal tax credit, ICF assumed that it would be available through 2025.

EV Operations and Maintenance Costs

Market research indicates that EVs have lower operations and maintenance (O&M) costs than conventional vehicles because of fewer oil changes, less wear and tear on brakes, and other factors. These cost savings are in addition to those related to avoided gasoline fuel costs. For the purposes of this analysis ICF used maintenance cost assumptions from the Argonne National Laboratory's Alternative Fuel Life-Cycle Environmental and Economic Transportation (AFLEET) tool. ICF assumed a 1.7 cents per

[4] See Benefit-Cost Analysis of Electric Vehicle Deployment in New York State, February 2019, https://www.nyserda.ny.gov/-/media/Files/Publications/Research/Transportation/19-07-Benefit-Cost-Analysis-EV-Deployment-NYS.pdf

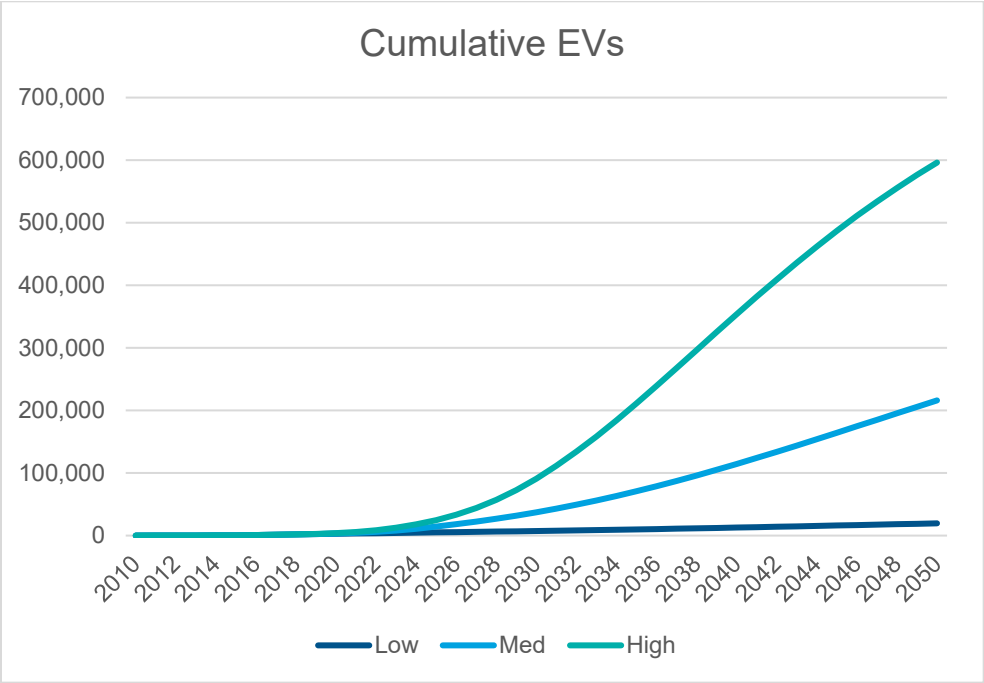
[5] Internal Revenue Service. Plug-In Electric Drive Vehicle Credit (IRC 30D), Accessed January 2021 online via https://www.irs.gov/businesses/plug-in-electric-vehicle-credit-irc-30-and-irc-30d.

mile difference between EVs and conventional vehicles; assuming 13,000 annual vehicles miles traveled (VMT), which results in $221 O&M savings per vehicle per year.

EV Adoption

Like forecasting battery EV pricing trajectories, EV adoption trajectories can stir considerable debate among stakeholders—including advocates and detractors of electrification alike. EPRI provided Evergy with low, medium, and high EV population projections with their associated energy (MWh) impacts for each Evergy jurisdiction past 2019.[6] ICF used these projections to estimate year-by-year EV adoption out to 2040 within the Evergy Kansas Central service territory for this analysis. Figure 2 shows EPRI's low, medium, and high EV adoption scenarios.

Figure 2. EPRI Evergy Kansas Central EV Adoption Scenarios Used in ICF Modeling



ICF explored potential market impacts of the Coronavirus pandemic on these EV projections, and while there may be short-term impacts, the long-term impacts were not significant enough to warrant adjusting the original EPRI projections. It is also anticipated that the pandemic may not impact electric car sales as much as the overall passenger car market.[7]

[6] EPRI EV projections use the methodology outlined in "Plug-in Electric Vehicle Market Projections: Scenarios and Impacts," Report 3002011613 (December 2017). EPRI calibrates projections based on county-level EV registration data.

[7] As shown in IEA's Global EV Outlook 2020, https://www.iea.org/reports/global-ev-outlook-2020

Fuel Pricing

Electric Rates for EV Charging

ICF's modeling uses a weighted mix of residential and commercial rates to reflect the distribution of a typical EV's charging load profile. EPRI and Evergy provided the charging load profiles used in this analysis, which estimate that typical EVs use 70% residential charging, 20% workplace charging, and 10% public charging. ICF used Evergy's Kansas Central Residential, Small General Service, Medium General Service and Public Charging rates, which resulted in an average rate of $0.11/kWh. Further, ICF escalated residential rates in line with electric supply cost escalation rates at an average annual rate of 3%. This is intended to be a conservative assumption and does not reflect Evergy's expectations for future retail rates.

Energy Supply Costs

To calculate the incremental dollar costs to society and the utility customer resulting from the changes in electrical loads, ICF used energy supply costs—including the energy costs and capacity costs. Evergy provided the energy supply costs and projections used in this analysis. Evergy's energy costs are sourced from the Company's Integrated Resource Plan process, which develops a Southwest Power Pool (SPP) Locational Marginal Price forecast. Capacity supply costs include cost for generation and changes in SPP transmission fees.

Evergy's generation costs are based on a probability analysis of plant retirements and load forecast scenarios. In years where net capacity is long, a market-based approach is used to value capacity. In years where capacity is short, the levelized $/kW-year of a combustion turbine is used to value capacity.

SPP transmission fees are based on the monthly system peak demand. The estimated changes in SPP transmission fees used in this analysis are based on the impacts of utility programs (EV or otherwise) on monthly system peak demand.

Gasoline Pricing

Gasoline pricing assumptions were developed using a combination of wholesale gasoline pricing, EIA projections for the 2020 AEO, and applicable state and federal taxes. Table 2 below summarizes the gasoline pricing assumptions applied in the modeling.

Table 2. Gasoline Pricing Components used in ICF Modeling

Parameter	Description
Wholesale price of gasoline	ICF used 2020 national average for wholesale gasoline prices and projected based on energy prices reported for the Transportation sector from the AEO 2020 Reference Case. Inclusive of Distribution & Marketing Costs.
Federal excise tax	Held constant at 18.4 ¢/gallon.
State (KS) gasoline taxes	Held constant at 24.0 ¢/gallon.

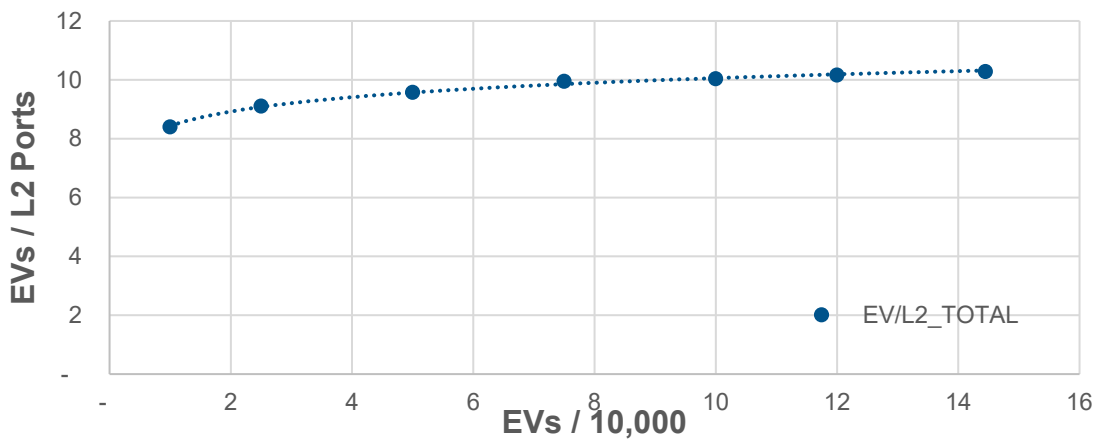
EV Charging Infrastructure

Charging Infrastructure Deployment

ICF developed assumptions for the quantity of chargers needed to support the EPRI EV adoption scenarios based on outputs from the National Renewable Energy Laboratory's EVI-Pro Lite tool.[8] These projections vary by level of charging (Level 2 and DCFC) and by charging location (residential and non-residential).

- For residential charging, ICF assumed 20% of single-family homes and 10% of multi-family homes with EVs will upgrade to Level 2 charging through 2035. Past 2035 this factor increases to 40% for single-family homes and 25% of multi-family homes. These estimates are based on feedback and territory insights from Evergy.
- For non-residential Level 2 charging, ICF fit a curve to outputs from the EVI-Pro Lite tool across different EV adoption rates for the Kansas City area to estimate the amount of public and workplace charging that would be needed (see Figure 3).

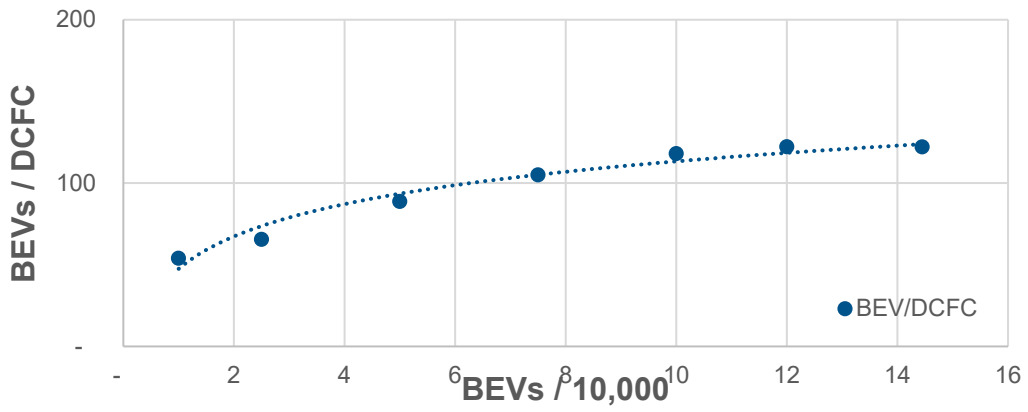
Figure 3. Level 2 Ports as a Function of EVs in Evergy's Kansas Central Service Territory



[8] Electric Vehicle Infrastructure Projection Tool (EVI-Pro) Lite, via the Alternative Fuels Data Center, accessible online at https://afdc.energy.gov/evi-pro-lite.

- For DCFC (assumed to be units providing at least 50 kW), ICF fit a curve to outputs from the EVI-Pro Lite tool across different BEV adoption rates for the Kansas City area to estimate the amount of DCFCs that would be needed (see Figure 4).

Figure 4. DC Fast Chargers as a Function of BEVs in Evergy's Kansas Central Service Territory



These relationships were used to estimate the quantity of Level 2 ports and DCFC chargers that would need to be installed to support the projected EV adoption in Evergy's Kansas Central service territory.

Charging Infrastructure Costs

ICF's analysis applied the following cost assumptions for residential charging, commercial (non-residential) charging, and DCFC infrastructure.

Table 3. Charging Infrastructure Costs used in ICF Modeling

Charger Type	Ports per EVSE	Cost Assumption
Residential L1	N/A	$0
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- For residential charging installations, ICF assumed a total cost to the EV driver of $1,200, including $500 for the charger and total installation costs of $700 per Level 2 charger. ICF assumed Level 1 infrastructure would utilize existing outlets at no cost.
- For commercial charging installations, ICF used data provided by various stakeholders across multiple jurisdictions, including actuals from Evergy installations to date, concluding that the average cost for Level 2 dual-port installations was around $14,000. This cost is inclusive of the EV charger, necessary make-ready, and installation.
- For DCFC, ICF assumed that equipment would be able to deliver up to 150 kW, with a total cost of $75,000 per unit. This estimate is informed by actual costs from Evergy installations to date, as well as data provided by various stakeholders across multiple jurisdictions, and includes the charging station, site make-ready, and installation costs.

In this analysis, ICF assumed the participants (EV drivers) would bear the burden of the residential charging infrastructure costs. To conservatively represent the impacts of the utility involvement in the market, ICF applied the commercial L2 and DCFC infrastructure costs as a cost to all Evergy customers. The estimated infrastructure costs include the EV charging equipment, make-ready (both customer-side and utility-side facilities), and equipment installation. It is important to note that actual infrastructure costs can vary significantly based on the project and site. Utility-side facilities may not be required in all applications. ICF leveraged actual cost data and insight from Evergy's charging station installation experience in addition to available cost figures from other sources to derive cost assumptions.

3. Summary Results

ICF's analysis demonstrates that there are net customer benefits associated with EV adoption within Evergy's Kansas Central service territory. There is a net present value (NPV) of approximately $46.9 million in customer benefits from 2021 through 2040 under the medium EV adoption scenario, which is equivalent to customer benefits of $971 per EV deployed. It is important to note that this analysis does not include ancillary benefits, such as health and environmental benefits, that would likely increase the estimated benefits of EVs to customers. Other benefits not included are those resulting from improving the utility load factor and better distribution asset management.

Participants (EV drivers within Evergy's Kansas Central service territory) benefit the most when EV pricing is assumed to be low and when they can take advantage of lower electric rates relative to gasoline prices. ICF estimates a NPV participant benefit of $67.7 million, or $1,401 per EV deployed, when the low incremental EV pricing scenario is used with the medium EV adoption scenario. This becomes a maximum NPV cost of $231 million for EV drivers or -$4,782 per EV deployed when the high incremental EV pricing assumption is employed.

The societal impacts of EV adoption are most sensitive to EV pricing. Under the low incremental EV pricing scenario and medium EV adoption scenario, ICF reports a net benefit to society of $114.6 million, valued at approximately $2,372 per EV deployed. However, as EV pricing increases to the high incremental cost, ICF reports net societal costs of $184.1 million or nearly -$3,811 per EV deployed.

The subsections below review the variations observed in ICF's analysis across low, medium, and high scenarios for incremental EV pricing and EV adoption.

Variation in EV Pricing

ICF's modeling is most sensitive to EV pricing (the capital costs to purchase an EV). ICF views this as reinforcement of the concept that increased adoption is needed to help reduce EV pricing through increased demand. In addition to efforts by the utility to support increased adoption, as well as technology advancements (e.g., batteries), ICF expects that more EVs available from automakers and government initiatives have the potential to increase demand and drive down costs. Furthermore, lower incremental EV pricing will also reduce the impact as the federal tax credit is phased out with higher adoption.

The tables below summarize the net societal, participant, and customer impacts across the low, medium, and high incremental EV pricing scenarios. The other parameters, including EV adoption and electricity rates, are unchanged.

EV Adoption	Medium Scenario		
EV Pricing	Low Scenario		
Rate (Res / Comm)	Residential, Small General Service, Medium General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	$114.6	$67.7	$46.9
Per EV Deployed	$2,372	$1,401	$971

EV Adoption	Medium Scenario		
EV Pricing	Medium Scenario		
Rate (Res / Comm)	Residential, Small General Service, Medium General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	-$34.8	-$81.7	$46.9
Per EV Deployed	-$719	-$1,691	$971

EV Adoption	Medium Scenario		
EV Pricing	High Scenario		
Rate (Res / Comm)	Residential, Small General Service, Medium General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	-$184.1	-$231	$46.9
Per EV Deployed	-$3,811	-$4,782	$971

Variation by EV Adoption Scenarios

The tables below show the variation in societal, participant, and customer impacts as a function of changing the rate of EV adoption in Evergy's Kansas Central service territory across the low, medium, and high adoption scenarios. Other parameters—including EV pricing and rates—are otherwise unchanged. As EV adoption increases, so do the societal, participant, and customer net benefits.

EV Adoption	Low Scenario		
EV Pricing	Low Scenario		
Rate (Res / Comm)	Residential, Small General Service, Medium General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	$30	$22.5	$7.5
Per EV Deployed	$5,164	$3,872	$1,292

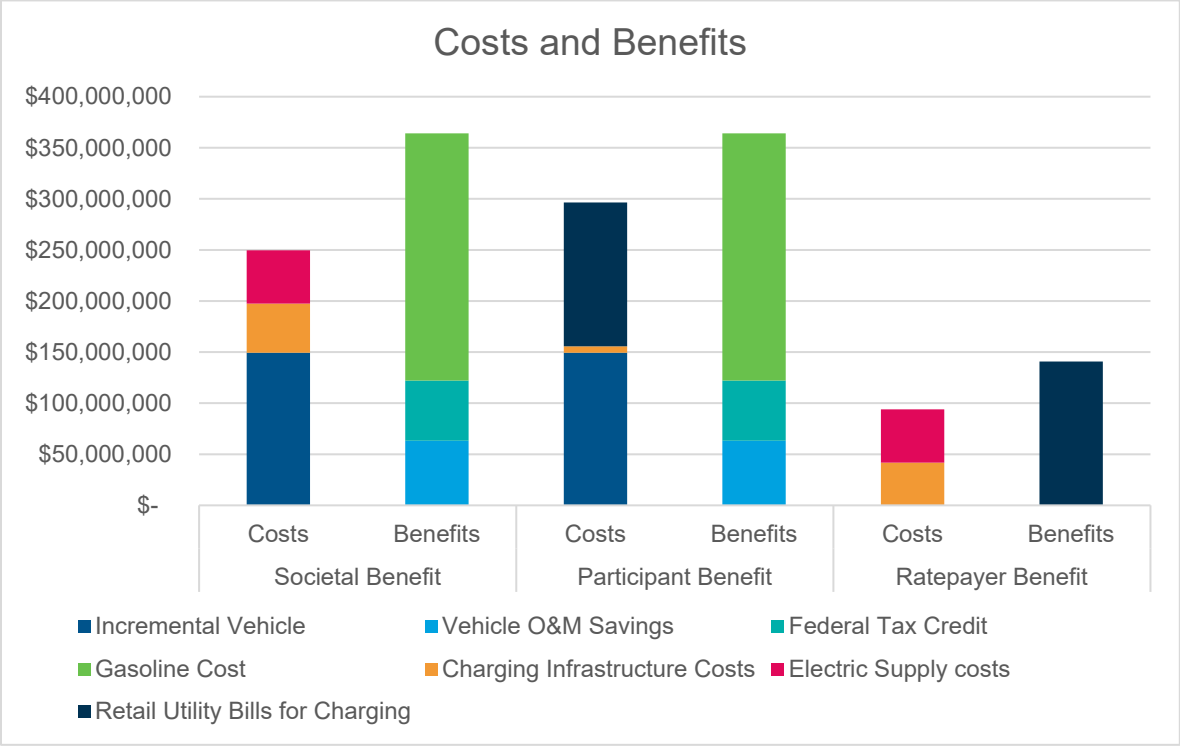
EV Adoption	Medium Scenario		
EV Pricing	Low Scenario		
Rate (Res / Comm)	Residential, Small General Service, Medium General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	$114.6	$67.7	$46.9
Per EV Deployed	$2,372	$1,401	$971

EV Adoption	High Scenario		
EV Pricing	Low Scenario		
Rate (Res / Comm)	Residential, Small General Service, Medium General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	$289.3	$142.2	$147.1
Per EV Deployed	$1,942	$955	$988

Conclusion

Increased EV adoption with low incremental EV pricing will benefit EV drivers, Evergy's customers, and society throughout the Kansas Central service territory. Figure 5 below highlights how the NPV benefits outweigh the costs from the societal, participant, and customer perspectives under the medium EV adoption scenario and low incremental EV pricing scenario. It is important to note that this analysis does not include ancillary benefits that would likely increase the estimated benefits of EVs to customers, including improving the utility load factor and better distribution asset management.

Figure 5. Impacts of Medium EV Adoption Scenario with Low Incremental EV Pricing



Appendix D. Technology Overview

D.1 Vehicle Technology

Transportation electrification involves the use of electricity to power vehicles and other modes of transportation, either completely or in part. Battery electric vehicles (BEVs) are powered by an electric motor using stored energy in an onboard battery pack instead of a conventional internal combustion engine (ICE) fueled by gasoline or diesel fuel. Plug-in hybrid electric vehicles (PHEVs) are powered by both an electric battery and an ICE. Typically, BEVs and PHEVs are collectively referred to as "EVs." To charge the battery, EVs must be plugged into an outlet or charging equipment, also called electric vehicle supply equipment (EVSE).

Because EVs run on electricity, EVs emit less (or no) exhaust emissions and are more energy efficient compared to ICE vehicles. The absence of an engine means that BEVs do not contain the typical liquid fuel components, such as a fuel pump, fuel line, or fuel tank. As a result, BEVs have fewer moving parts and require less maintenance than ICE vehicles.

Although passenger vehicles constitute the largest share of EV sales today, other vehicle segments and applications are rapidly electrifying. In particular, urban transit buses, school buses, commercial vans, light trucks, and a variety of off-road vehicles are increasingly becoming commercially available. At the time of this filing, heavy-duty vehicles including refuse and short-haul freight trucks are in demonstration stages and are expected to follow the first wave of commercial EVs.[88]

D.2 Charging Technology

EV customers have several charger options that deliver charging speed and efficiency at incrementally higher power rating levels. Each of these charging levels serve different vehicle applications and use cases, with L1 and L2 dominant in home and workplace charging, L2 and DCFC suitable for public charging, and both L2 and DCFC needed for fleet charging. Currently the most common EV charging levels are:

- **Level 1 (L1):** This refers to charging via a standard 120 V outlet. L1 charging is capable of charging at a rate of approximately 3-5 miles of range per hour.[89] L1 charging remains a viable home charging option for EV owners who drive relatively few miles per day.
- **Level 2 (L2):** This refers to charging at a voltage between 208 and 240 V. L2 charging is capable of charging at a rate of 8-24 miles of range per hour depending on the EV and charging circuit amperage.[90] L2 charging is suitable for most charging events in which the driver may be parked for several hours at long dwell time locations like home or the workplace. In addition, L2 charging has the advantage of being approximately 7-15% more energy efficient than L1 charging.[91]
- **Direct Current Fast Charging (DCFC):** In addition to the more common L1 and L2 charging, the demand for DCFC is increasing to meet the needs of current and future EV drivers. DCFC refers to charging at much higher voltages and currents compared to L1 and L2 charging. DCFC can charge compatible EVs at a rate over 10 times faster than L2 charging, thereby supporting long distance travel via EV. DCFCs are attractive

[88] CALSTART, "Drive to Zero's Zero-emission Technology Inventory (ZETI) Tool Version 5.9." Available at: https://globaldrivetozero.org/tools/zero-emission-technology-inventory/.
[89] EPRI, "Consumer Guide to EV Charging", 2019, p. 4. Available at: https://www.epri.com/research/products/000000003002016961.
[90] *ibid*
[91] Nissan, "Level 1 vs Level 2 EVSE Energy Consumption of Production EVs" 2020, p. 10. Available at: https://assets.ctfassets.net/ucu418cgcnau/32ufyOQrIVPevk1S5WcSQK/2b072efaf3986cfcba1d4785726098fd/D2-5_A_Comparison_of_AC_Level_1_and_2_Charging_-_EPRI_IWC.pdf.

because they can deliver a full battery charge in approximately 30 minutes, depending on the type of EV, battery size, and state-of-charge, which is similar to fueling an ICE at a gas station. DCFCs are particularly important for users such as fleet vehicles, long-distance highway drivers, and rideshare drivers who need to return to their routes quickly. Compared to L2 charging stations, DCFCs are more expensive to install and have a more intense power demand.

Connector Types: It is worth noting that not all EVs on the road are compatible with all chargers and station types, as a result of automakers making different choices regarding the use of disparate industry standards for charging equipment and connectors. SAE J1772 connectors are generally compatible with all EV, while only some EVs can be charged with CHAdeMO or SAE CCS Combo connector types for DCFC. Tesla HPWC and Supercharger connections are only compatible with Tesla models.[92] Additionally, PHEVs commercially available today cannot use DCFC. Given these differences, the mix of charging types needed will continue to evolve according to the stock of EVs on the road.

[92] ChargeHub, "2020 Guide On How To Charge Your Electric Car With Charging Stations," 2020. Available at: https://chargehub.com/en/electric-car-charging-guide.html.

Appendix E. Evergy's Transportation Electrification Experience

E.1 Clean Charge Network

At the time of the Clean Charge Network (CCN) launch in 2015, Evergy provided the largest utility-owned and operated public network of EV charging stations in the country. The Company's vision when launching the CCN was to address the barriers to widespread electric vehicle (EV) adoption by establishing a network of public charging stations to help address range anxiety and charging access concerns.

In the five years since the CCN launched, Evergy observed significant growth in EV adoption, charging session, energy consumption, unique drivers, and charging utilization. Today, the CCN supports more than 8,000 EVs in operation across the entire Evergy service territory, which represents a 620% increase compared to a 2014 baseline prior to the program's launch.[93]

To date, approximately 50% of CCN EV charging stations have been installed at locations that primarily support driver workplace charging. Approximately 42% of stations have been installed at retail and other public venues, and 8% of CCN EV chargers have been installed at multi-family locations.

E.2 Partnerships and Collaborations

Evergy works with customers to support their transportation electrification (TE) efforts. This includes transit agencies, commercial fleets, and individual EV drivers. Evergy also recognizes the value of sharing knowledge with other utilities and organizations pursuing TE in some way. Evergy staff participate in industry working groups, present information in public forums, and respond to inquiries about Evergy's experience.

In addition, as mentioned in this report, Evergy is partnering with other utilities through the Midwest Memorandum of Cooperation. Other partners to this memorandum of cooperation include Ameren Missouri, Ameren Illinois, Consumers Energy, DTE Energy, and Oklahoma Gas and Electric, demonstrating the growing support across the region for further TE actions by utilities.

E.3 Evergy Fleet Commitments

Evergy recognizes the value of leading by example, as well as testing technology with our customers. Evergy's own fleet electrification goal is that 100% of new light-duty vehicle purchases by 2030 will be electric. In addition, Evergy plans to electrify 35% of its overall vehicle fleet including light-duty, medium-duty, and heavy-duty vehicles by 2030.

[93] Based on EPRI vehicles in operation data, as of September 2020.

E.4 Building Awareness

Evergy has significant experience educating and building awareness among customers to support EV adoption. Since the launch of the CCN, Evergy has found that education is one of the most impactful activities that a utility can do, as the Company is well-connected to customers and able to fill a knowledge and education gap about EVs and EV charging that few parties can offer. Select activities that demonstrate Evergy's experience are summarized below.

E.4.1 CCN Website and Advertising

When designing the digital website and advertising opportunities for the launch of the CCN, it became clear there was not a one-stop-shop where online visitors — in Kansas City and elsewhere — could get a full picture of the idea of driving electric and gain information about available models. While there are many excellent online resources about EVs, some are too technical for the typical consumer, some focus on a specific vehicle and not the full breadth of options available, and some share information but not in a consumer-benefit focused fashion. Evergy deployed microtargeting to direct the ads to reach those already in the car-buying cycle. Tactics included Gmail sponsored ads (on a charge-per-click basis), Cars.com ads, paid search, automotive site retargeting, and sponsored Facebook posts. The team supplemented these digital efforts with a bill insert, kiosk advertisements in the busy Power & Light District and a digital billboard.[94]

E.4.2 Dealer/Manufacturer Partnerships

To continue the education outreach started in the CCN's first year, Evergy conducted a training program to educate salespeople at local dealerships on the CCN, tax discounts, and EV selling tips. Store-front and waiting room advertising materials supplemented the training, and dealerships who became Clean Charge "certified" could earn financial incentives for selling all-electric cars. The CCN also capitalized on a long-term partnership with Nissan, becoming the first utility in the country to offer a manufacturer level group buy discount on the new Nissan LEAF. This Nissan-funded program, which offered KCP&L customers $10,000 off the retail price, sold 211 Nissan LEAFs in a five-month period. For reference, five LEAFs were sold in the region the previous entire year. The campaign was deemed so successful that Nissan rolled it out to other utilities across the country.[95]

E.4.3 Community Events

Though its primary focus is on drivers already in the buying cycle, Evergy continues to seed the pipeline by building awareness about the idea of driving electric at community and corporate events. Outreach activities include mini electric car shows at the Kansas City River Market, Earth Day fairs and weekend-long festivals.

Evergy realized early on that EV drivers are a valued resource in the outreach arsenal. These individuals are passionate, incredibly knowledgeable about the specifics of driving electric, and willing to go above and beyond to help share information about EVs. The Evergy communications team developed a CCN affinity group and have continually engaged EV drivers.

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[94] KCP&L, "Ahead of the Charge: How KCP&L Helped Transform Kansas City into an EV Mecca," 2018. Available at: https://cleanchargenetwork.com/wp-content/uploads/2018/10/CCN-White-Paper.pdf.
[95] *ibid*

Appendix F. Stakeholder Letters of Support

Wichita Transit
CITY OF WICHITA

December 28, 2020

Kansas Corporation Commission
1500 SW Arrowhead Road
Topeka, KS 66604

Re: Letter of Support for Case #
Evergy Transportation Electrification Proposed Programs

Dear Chairwoman Duffy and Commissioners:

On behalf of the City of Wichita and Wichita Transit, we submit this Letter of Support as a customer in the above-captioned proposal, and a ready recipient of the benefits and vision behind Evergy's Transportation Electrification proposal.

Wichita Transit provides public transportation services to the community of Wichita, Kansas.

Wichita Transit currently operates eleven 100% battery-electric buses with plans to operate additional battery-electric buses in the future. Our current initiatives include further electrification of the Wichita Transit bus fleet and additional investment in our facilities to include the design and construction of a multimodal center that features electric vehicle charging for both buses and personal automobiles.

We are confident in the success of Evergy's proposal because it includes the following:

- Further development of innovative partnerships that have proven valuable to our organization
- Develops customer-centric solutions to overcome the barriers to EV adoption
- Creates infrastructure solutions that optimize grid benefits for our future transit facilities
- Fuel and cost of ownership savings that translate to more efficient use of our public funding
- Lowering emissions, creating a safer and more desirable environment for the community

We strongly endorse Evergy's proposal and urge your serious consideration for approval. We appreciate and look forward to seeing Evergy's implementation of the proposed transportation electrification program and the benefits that it will provide to program participants, customers, and Kansas residents.

Thank you for your consideration.

Sincerely,

Mike Tann
Director of Transit

Cc: Nick Voris, Evergy

CLIMATE ACTION KC

www.climateactionkc.com
info@mkccac.org

ClimateActionKC

February 3, 2021

Kansas Corporation Commission
1500 SW Arrowhead Road
Topeka, KS 66604

Re: Letter of Support for Evergy's Transportation Electrification Proposed Programs

Dear Chairwoman Duffy and Commissioners:

Climate Action KC (CAKC) is dedicated to supporting the expansion of electric vehicle infrastructure and incentives throughout the Kansas City metropolitan region. In our regional Climate Action Plan, CAKC prioritizes expansion of EV charging infrastructure, improving access to low-income communities, and municipal fleet electrification. While we know that more concentrated, mixed land use is critical to reducing vehicle-related emissions, electric vehicle technology has the potential to greatly reduce emissions produced by the transportation sector. Emissions modeling by the Mid America Regional Council (MARC) indicates that electrification of 75% of our passenger and freight vehicles would reduce greenhouse gas emissions by 35% from 2015 levels.

To effectively support the efficient electrification of public and private vehicles, accessible charging infrastructure needs to be deployed effectively throughout the region. Thanks to ongoing public, private, and utility investments, the electric vehicle network across the Kansas City region covered by Evergy has grown substantially in recent years, but gaps remain in the system, especially in lower-income communities and neighborhoods. Continued growth of this system, paired with Evergy's recent commitment to increasing electricity generated by renewable energy sources, ensures that more of our communities stand to benefit from access to clean technology and infrastructure. Reducing fossil fuel emissions generated by passenger vehicles and electricity production also reduces low atmosphere smog (particulate, ozone, nitrogen oxide, and other heavy chemicals), which yields two important results: improving the health of our citizenry through reductions in asthma and other respiratory illnesses, and reducing the urban heat-island effect, which is one of the greatest climate change risks to our region.

CAKC supports identifying and prioritizing EV charging station opportunities and potential funding sources and supports direct incentives for electric vehicles on the local, state, and federal level. As an equitable consideration, CAKC supports purchase incentives for used and new EVs and EV carsharing to increase access to low-income communities. Expanding charging infrastructure to underserved communities should be prioritized after extensive neighborhood engagement, outreach, and input.

CAKC further supports educating public agencies about funding opportunities for alternative fuel vehicle purchasing and encourages the submission of applications for this funding. Additionally, CAKC supports informing local governments about purchasing electric vehicles through the Kansas City Regional Purchasing Cooperative (KCRPC).

We appreciate your consideration of these priorities and look forward to working together as a region toward these shared goals.

With Gratitude,
The Climate Action KC Executive Board

600 Broadway, Suite 200
Kansas City, Missouri 64105-1659

816-474-4240
816-421-7758 FAX
www.marc.org

MARC
MID-AMERICA REGIONAL COUNCIL

January 20, 2021

Kansas Corporation Commission
1500 SW Arrowhead Road
Topeka, KS 66604

Re: Letter of Support for Evergy's Transportation Electrification Proposed Programs

Dear Chairwoman Duffy and Commissioners:

The Mid-America Regional Council (MARC) Air Quality Forum, created in accordance with Section 174 of the Clean Air Act to coordinate the development and implementation of air quality policy in the Greater Kansas City region, offers this letter of support for Evergy's Transportation Electrification proposal.

According to the Kansas City Regional Greenhouse Gas Inventory, on-road transportation accounts for 34% of all greenhouse gas emissions. And, we know that transportation contributes significantly to regional ozone pre-cursor emissions and particulate matter in the region, a detriment to the public health of residents. The vision underlying Evergy's Transportation Electrification proposal directly addresses these concerns and is highly aligned with the vision and strategy of MARC's Clean Air Action Plan (2018), Smart Moves 3.0: Regional Transit and Mobility Plan (2017), the Connected KC 2050 Regional Transportation Plan (2020) and the regional Climate Action Plan (2021). All of these plans call for aggressive electrification of the fleet—including personal, municipal, transit and commercial vehicles—to meet critical greenhouse gas mitigation targets and further improve the quality of the air we breathe. The current pace of electrification is slow, which we believe is partially attributable to the costs of upgrading home electric circuits, costs of installing charging stations, and caps limiting Evergy's expansion of the Clean Charge network.

We believe that Evergy's proposal represents a critical step towards fleet electrification which will enhance air quality, promote economic development, reduce transportation and energy costs, take advantage of existing grid flexibility, improve the equity of access to charging infrastructure and advance community resilience.

We strongly endorse Evergy's proposal and urge your serious consideration for approval. We appreciate and look forward to the implementation of this proposal and the benefits that it will provide to program participants, customers, and Kansas residents.

Thank you for your consideration.

Sincerely,

Scott Burnett
County Legislature, Jackson County, Missouri
Missouri Co-Chair, MARC Air Quality Forum

Angela Markley
Commissioner, Unified Government
of Wyandotte County/Kansas City, Kansas
Kansas Co-Chair, MARC Air Quality Forum

Cc: Nick Voris, Evergy

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Rob Roberts
Commissioner
Miami County,
Kansas

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Jimmy Odom
Commissioner
Cass County,
Missouri

2nd Vice Chair
Harold Johnson Jr.
Commissioner
Unified Government
of Wyandotte County/
Kansas City, Kansas

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Mayor
Independence,
Missouri

Secretary
Carson Ross
Mayor
Blue Springs,
Missouri

Executive Director
David A. Warm

Department of Commerce
1000 S.W. Jackson St., Suite 100
Topeka, KS 66612-1354

Phone: (785) 296-3481
Fax: (785) 296-5055
KansasCommerce.gov

David C. Toland, Secretary

Laura Kelly, Governor

February 1, 2021

Kansas Corporation Commission
1500 SW Arrowhead Road
Topeka, KS 66604

Re: Letter of Support for Evergy Transportation Electrification Proposed Programs

Dear Chairwoman Duffy and Commissioners:

On behalf of the Kansas Department of Commerce, we submit this Letter of Support as a stakeholder in the above-captioned proposal, and a potential recipient of the benefits and vision behind Evergy's Transportation Electrification proposal.

As the state's lead economic development agency, the Kansas Department of Commerce strives to empower individuals, businesses and communities to achieve prosperity in Kansas. Our work focuses on growing and diversifying the Kansas economy and we believe the programs described by Evergy in this filing support our work.

We are confident in the success of Evergy's proposal because it includes the following:

- Lower emissions for customers and the community
- Represents a valuable strategic vision for economic development purposes
- Ensures benefits of transportation electrification are equitably distributed
- Serves diverse customer use cases informed by market demand
- Will allow customers to reduce their costs and emissions
- A more flexible grid and potential downward pressure on rates.

We are encouraged by Evergy's proposal and urge your consideration for approval. We appreciate and look forward to seeing Evergy's implementation of the proposed transportation electrification program and the benefits that it will provide to program participants, customers, and Kansas residents.

Thank you for your consideration.

Sincerely,

William P. Murphy, CEcD
Deputy Secretary, Business Development

Cc: Nick Voris, Evergy

Metropolitan ENERGY CENTER

transforming energy use in America's Heartland since 1983

January 28, 2021

Kansas Corporation Commission
1500 SW Arrowhead Road
Topeka, KS 66604

Re: Letter of Support for Evergy Transportation Electrification Proposed Programs

Dear Chairwoman Duffy and Commissioners:

On behalf of Metropolitan Energy Center, I submit this Letter of Support as a stakeholder in the above-captioned proposal and a ready advocate for the benefits and vision behind Evergy's Transportation Electrification proposal.

Our mission is to create resource efficiency, environmental health, and economic vitality in the Kansas City region and beyond. We provide resources, outreach, and training to make energy efficiency and alternative fuels commonplace.

Through our Central Kansas and Kansas City Regional Clean Cities Coalitions, we work to reduce petroleum use in transportation across the state. Transportation electrification is an important part of that work.

We are confident in the success of Evergy's proposal and we will directly benefit because the program includes the following:

- Lower emissions and improved air quality for customers and the community
- Valuable opportunities for regional clean technology jobs and economic development
- Service for transit, freight and consumer transportation needs informed by market demand
- Allows customers to reduce their transportation costs and emissions
- Creates the potential for a more flexible grid and downward pressure on rates

We strongly endorse Evergy's proposal and urge your serious consideration for approval. We appreciate and look forward to seeing Evergy's implementation of the proposed transportation electrification program and the benefits that it will provide to program participants, customers, and Kansas residents.

Thank you for your consideration.

Very truly yours,

Kelly M. Gilbert
Executive Director
kelly@metroenergy.org

cc: Nick Voris, Evergy

Bridging The Gap

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BNIM Architects

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www.bridgingthegap.org

Founded 1992

Printed on recycled paper.

January 28, 2021

Kansas Corporation Commission
1500 SW Arrowhead Road
Topeka, KS 66604

Re: Letter of Support for Evergy Transportation Electrification Proposed Programs

Dear Chairwoman Duffy and Commissioners:

Bridging The Gap (BTG), an environmental non-profit serving Kansas and Missouri since 1992, is pleased to submit this Letter of Support as a stakeholder and strong supporter of Evergy's Transportation Electrification proposal. BTG's mission is to "connect environment, economy and community" through a broad range of programming: restoring tree canopies and prairies, recycling, installing energy and water efficiency devices in homes, and maintaining green infrastructure for stormwater management.

Bridging The Gap is deeply involved in climate change planning for the region, serving on several committees for Climate Action KC, founded by two Kansas officials, Mayor Mike Kelly of Roeland Park, KS and Councilwoman Lindsey Constance of Shawnee, KS. Bridging The Gap also serves on the Climate Protection Plan Steering Committee for the City of Kansas City, Missouri. Bridging The Gap is deeply committed to electrification of all vehicles as a key means of reducing the greenhouse gas emissions which are driving climate change. In Kansas, the state's vast wind power potential, combined with electrification of vehicles described in Evergy's proposal, offers the potential for emission-free automobile transportation.

We strongly support Evergy's proposal because it will:

- Create lower emissions for customers and the community, not only reducing greenhouse gases, but air pollution and pulmonary disease in Kansas
- Ensure that benefits of transportation electrification are equitably distributed
- In the long run, allow customers to reduce their costs
- Provide a more flexible grid and potential downward pressure on rates

We urge your serious consideration for approval of this proposal, which offers so many benefits to Kansas, and would point out that our region is fortunate to be home to the leading utility company in the country in vehicle electrification. We appreciate and look forward to seeing Evergy's implementation of the proposed transportation electrification program and the benefits that it will provide to program participants, customers, and Kansas residents.

Thank you for your consideration.

Sincerely,

Kristin Riott
Executive Director
(816) 561-1066
Kristin.riott@bridgingthegap.org

Cc: Nick Voris, Evergy

City of Roeland Park
4600 W. 51st Street
Roeland Park, KS 66205
(913) 722-2600

February 1, 2021

Kansas Corporation Commission
1500 SW Arrowhead Road
Topeka, KS 66604

Re: Letter of Support for
Evergy Transportation Electrification Proposed Programs

Dear Chairwoman Duffy and Commissioners:

In my role as Mayor of Roeland Park, Kansas, I submit this Letter of Support as a municipal leader and a ready partner the benefits and vision behind Evergy's Transportation Electrification proposal.

Our city is dedicated to providing efficient and effective infrastructure that promotes sustained growth, connects neighborhoods and centers, is aesthetically pleasing, environmentally sound and meets the current and future needs of the community. Evergy's proposal helps meet these goals. Roeland Park is the home of the first electric vehicle charging station in the State of Kansas and has dedicated itself to replacement of fleet vehicles with electric vehicles. It is installing an EV charging carport to support this electrical fleet.

I am confident in the success of Evergy's proposal because it includes the following:

- Lower emissions for customers and the community
- Ensures benefits of transportation electrification are equitably distributed
- Supports a more flexible grid and potential downward pressure on rates

I strongly endorse Evergy's proposal and urge your serious consideration for approval. I appreciate and look forward to seeing Evergy's implementation of the proposed transportation electrification program and the benefits that it will provide to program participants, customers, and Kansas residents.

Thank you for your consideration.

/s/ Mike Kelly
Mayor Mike Kelly

February 10, 2021

Kansas Corporation Commission
1500 SW Arrowhead Road
Topeka, KS 66604

Re: Letter of Support
Evergy Transportation Electrification Proposed Programs

Dear Chairman French and Commissioners:

Overall

I have had a chance to review both the high-level overview and the specific program components of an imminent filing by Evergy to the Commission for transportation electrification (TE) infrastructure. We strongly support these programs and urge the Commission to approve these programs in a timely way after the review by Staff and constructive engagement with EV-related stakeholders.

The Alliance for Transportation Electrification, a 501(c)(6) non-profit corporation, is led by utilities, electric vehicle (EV) infrastructure firms and service providers, automobile manufacturers, and EV charging industry stakeholders and affiliated trade associations. We started with 20 organizations at the launch in early 2018. By taking a "big tent" approach to advance the industry, we have grown rapidly to include about 50 national dues-paying members and affiliated organizations. We are actively involved in over twenty regulatory and other state proceedings around the country today.

At a high-level, these two filings build on the leadership position nationally that KCP&L (predecessor to Evergy) has established in the Kansas City metro area through its Clean Charge Network (CCN), and related initiatives. It invested early, and invested well in EV infrastructure programs that met the needs of its customers and the communities. We at the Alliance often hear questions about the "chicken and egg" dilemma, or "build and they will come" challenge that regulators pose to us and other EV advocates who engage around the country on EV-related issues. But for Evergy, that question was settled several years ago, and with the multiple public announcements of General Motors and other OEMs on more EV product offerings, the utility is in a good position to use this foundational infrastructure to build out further to meet the needs of customers and vehicle growth in the near future.

Second, in these filings, Evergy aims to target some of the charging gaps by end use in its service territories, and to allow customers outside of the metro areas to build out EV infrastructure in less served areas. Since over 80 percent of the residential charging is done at home, it is critical to have a viable and robust resident charging program and encourage smart charging in off-peak hours. Similarly, for the business and commercial customers, including fleets, it is important to target their specific needs with rebates, TOU (rates), and use of technology to achieve managed charging.

Finally, the guiding principles enunciated by Evergy are sound and reflect the best practices of other utility filings in other jurisdictions. Broadly speaking, those design principles are: lower long-term customer costs, reduce emissions, deliver economic benefits, support customer goals, increase long-term grid flexibility, and drive equitable outcomes. As regulated utilities who are obligated to serve all customers regardless of income and geography, it is vital that Evergy design its programs to ensure that the overall benefits of beneficial electrification can be accessed by all customers to their benefit as ratepayers. They should also provide environmental benefits through reduced emissions of CO2 and other air pollutants that enhance public health, and promote a vibrant transportation and automotive industry increasingly integrated with electric power companies. The Evergy filings meet those tests.

Specific Comments

The structure of these filings is based on various rebate programs and levels, by end use, which has proven to be an effective way of providing incentives to the third-party competitive market and vendors of EVSE (electric vehicle supply equipment) and network operators. The level of rebates for the residential sector are scoped at 50 percent or up to $500 with a limit of one rebate per residence, which is consistent with other jurisdictions such as Michigan and Minnesota. For the commercial sector, the rebates are $2,500 per port for Level 2, and $20,000 per port with per location caps ranging from $25,000 to $65,000. Importantly, these rebates will cover both the EVSE and the necessary make-ready infrastructure, which will be built out by Evergy to the stub where the equipment sits. Again, these rebate levels reflect the current cost structure in the industry, and best practices in other jurisdictions; if anything, they are scoped at the lower end of the rebate spectrums.

The overall budgets for the rebate programs, customer education and program administration are reasonable, and reflect the differing circumstances and current state of infrastructure in the two States. Over five years, a budget of $12.8 million is established for Missouri, while a budget of $19.3 million is set for Kansas. This illustrates the significant amount of work already invested in the Kansas City metro area and Missouri locations over the past several years through KCP&L, and the relative lack of infrastructure on the Kansas side. It is important that this difference in EV infrastructure readiness be resolved in the near future given the large amount of new vehicles coming in to the fleet in the next few years, especially in the light truck and SUV vehicle types.

Besides range anxiety, customer surveys and research indicate that one of the leading barriers to greater EV adoption is the lack of consumer awareness. Even in some of the leading EV adoption States, the level of consumer awareness is still surprisingly low. The utilities can play a key role, along with the OEMs, dealers, NGOs, and others in the EV ecosystem, in helping to raise awareness of the consumer benefits of electrification through web portals, ride and drives, and other means. The Alliance recently did a joint white paper on this subject of what we call "E&O" (education and outreach) by the utilities which can be accessed on our website (Plug in America and Alliance for Transportation Electrification), "The Missing Piece on Meeting Transportation Electrification Goals: Utility Education and Outreach Programs." Available at: https://evtransportationalliance.org). The Evergy filings call for reasonable budget E&O activities which build on its earlier work in energy efficiency products and programs, and generally using the "trusted energy advisor" relationship in this regard.

Moreover, the CCN program have proven to be successful and the foundation of EV charging infrastructure that enables engagement with vendors and third-party service providers as well who

bring new technology and software to the utility. We urge you to support the expansion of the CCN in Kansas.

Finally, we urge the Commissions to consider building regulatory flexibility, with accountability of course, into the regulatory process over the next five years since the EV markets and technologies are changing rapidly. The relative costs of EV charging infrastructure are expected to continue to decline in the future, but the analysis of utilization of the EVSE and charging infrastructure is quite use-case specific. As with other new technologies, such as lighting equipment such as CFLs, then LED bulbs, heat pumps, and perhaps grid-connected water heaters, neither the utility or outside expert can predict exactly the load profiles, utilizations, and grid impacts of these new technologies today as they are purchased by customers, host sites and integrated in the grid. General rate cases, or specific rate filings as this one, sometimes takes many months and sometimes over a year to resolve issues with stakeholders and Commission staff, and ultimately decisions by Commissioners. For EV programs and infrastructure, a more flexible and streamlined approach should be considered for the revisions of programs and re-allocation of budgets, within certain guard rails, over this five-year period.

In summary, thank you for the opportunity to provide some early comments on these important regulatory filings which accelerate the pace of infrastructure for transportation electrification. We look forward to engaging with further comments and answer any questions during the regulatory review and decision-making process in the weeks ahead.

Sincerely,

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Appendix G. Witness Details

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Appendix A	Detailed Program Descriptions: Residential Customer EV Outlet Rebate, Residential Developer EV Outlet Rebate, Commercial EV Charger Rebate, Customer Education and Program Administration	Nick Voris
Appendix A	Detailed Program Descriptions: ETS Rate, BEVCS Rate	Brad Lutz
Appendix B	Program Tariff Sheets: TE Rebates	Nick Voris
Appendix B	Program Tariff Sheets: ETS, BEVCS	Brad Lutz
Appendix C	Cost Effectiveness Evaluation	Ambika Coletti (ICF)
Appendix D	Technology Overview	Ed Hedges
Appendix E	Evergy's Transportation Electrification Experience	Kimberly Winslow
Appendix F	Stakeholder Letters of Support	Nick Voris
Appendix G	Witness Details	All witnesses