Exhibit No. 82

Evergy Missouri Metro – Exhibit 82
Kimberly H. Winslow
Direct Testimony
File Nos. ER-2022-0129 & ER-2022-0130

Exhibit No.:	
Issue:	Rate Modernization Plan, TOU Rates, Business Transportation Electrification, Residential Battery Energy Storage Pilot, Low-Income Solar Subscription Pricing Pilot, Green Pricing RECs, Low-Income Weatherization, MBDR, Chapter 13 Variances
Witness:	Kimberly H. Winslow
Type of Exhibit:	Direct Testimony
Sponsoring Party:	Evergy Missouri Metro
Case No.:	ER-2022-0129
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MISSOURI PUBLIC SERVICE COMMISSION

CASE NO.: ER-2022-0129

DIRECT TESTIMONY

OF

KIMBERLY H. WINSLOW

ON BEHALF OF

EVERGY MISSOURI METRO
EVERGY MISSOURI WEST

Kansas City, Missouri
January 2022

DIRECT TESTIMONY

OF

KIMBERLY H. WINSLOW

Case No. ER-2022-0129

I. INTRODUCTION AND PURPOSE

Q: Please state your name and business address.

A: My name is Kimberly H. Winslow. My business address is 1200 Main Street, Kansas City, Missouri 64105.

Q: By whom and in what capacity are you employed?

A: I am employed by Evergy Metro, Inc. and serve as Senior Director, Energy Solutions, for Evergy Metro, Inc. d/b/a as Evergy Missouri Metro ("Evergy Missouri Metro"), Evergy Missouri West, Inc. d/b/a Evergy Missouri West ("Evergy Missouri West"), Evergy Metro, Inc. d/b/a Evergy Kansas Metro ("Evergy Kansas Metro"), and Evergy Kansas Central, Inc. and Evergy South, Inc., collectively d/b/a as Evergy Kansas Central ("Evergy Kansas Central") the operating utilities of Evergy, Inc..

Q: On whose behalf are you testifying?

A: I am testifying on behalf of Evergy Missouri Metro, Inc. (MO Metro) and Evergy Missouri West, Inc. (MO West) (together as "Evergy Missouri" or "Evergy" or "Company").

Q: What are your responsibilities?

A: I lead Evergy's Energy Solutions team within the Community and Customer Solutions Division. I am responsible for developing and executing on Evergy's customer products and services strategy for demand-side management programs, distributed energy resources, customer renewables programs, beneficial electrification and home

protection services and retail solar programs. My team also supports planning and analytics pertaining to product development. In addition, my team is responsible for working cross collaboratively with our Regulatory team to offer choice-based rates. I have a team of about 30 persons who are focused on product delivery to drive increased customer satisfaction and collaborate with customers on sustainable solutions.

Q: Please describe your education, experience and employment history.

A: I graduated from Missouri University of Science and Technology with a Bachelor of Science degree in Mechanical Engineering in 1990. In 1994, I graduated from Rockhurst University with a Master of Business Administration degree. I began my career at Black & Veatch in 1990 as an equipment engineer in its Gas, Oil and Chemicals Division and then transferred to Black & Veatch's Management Consulting Division. As a project manager and consultant, I worked on various projects for electric, gas, water and wastewater municipal and investor-owned utilities, ranging in scope from long-term electric and natural gas demand and energy forecasts to regulatory matters such as cost of service, rate design, depreciation studies and valuation studies.

In December 2007, I began my employment with KCP&L as a Senior Energy Consultant working with KCP&L's large industrial customers. In 2009, I assumed the position of Manager of Energy Efficiency. In 2011, I transferred to our Generation Division as a Senior Quantitative Analyst. In September 2013, I began leading the Energy Solutions team, which at that time, included economic development, products and services, key accounts and the business center teams. Since the merger of Great Plains Energy, Inc. and Westar Energy, Inc. that created Evergy, Inc., my role has been

focused solely on leading products and services, and I am currently the Senior Director of Energy Solutions. I am also a Professional Engineer in the state of Missouri.

Q: Have you previously testified in a proceeding at the Missouri Public Service Commission ("Commission" or "MPSC") or before any other utility regulatory agency?

A: Yes, I have testified before both the MPSC and the State Corporation Commission for the State of Kansas ("KCC").

Q: What is the purpose of your testimony and how is it organized?

A: My testimony focuses on the following:

- In Section II, I discuss 2018 rate case commitments as agreed upon in *Case Nos. ER-2018-0145, ER-2018-0146 Non-Unanimous Partial Stipulation and Agreement Concerning Rate Design Issues* ("2018 Rate Design S&A", "0145 Stipulation") regarding Evergy's 2019 TOU rate implementation[1]. My testimony will include how Evergy met the TOU targets specified within the S&A, lessons learned and prudency of costs incurred.
- Section III describes Evergy's Rate Modernization Plan, which will provide a discussion on Evergy's overarching programs and rates to progress towards greater customer choice to increase customer satisfaction, to enable customers to better manage their bill and to educate customers how their behavior can minimize grid impact.

  Within this section, I will discuss the following proposed rates and programs: Time-of-Use ("TOU") rates, including options for residential

[1] *Non-Unanimous Partial Stipulation and Agreement Concerning Rate Design Issues*. Case No. ER-2018-0145 and ER-208-0146, filed September 25, 2018, Section 2.

electric vehicles ("EV") drivers; Subscription Pricing Pilot Program, Advance Easy Pay Pilot Program; and three DER[2] related tariffs or programs: Low-Income ("LI") Solar Subscription Pilot Program, Residential Battery Energy Storage Pilot ("RBES") Program and Green Pricing Renewables Energy Credit ("REC") Program. I will speak to the implementation date, capital budget and evaluation of each rate or program within its respective section, as applicable. I discuss the overall administrative, marketing and education budget and proposed cost recovery to support the Evergy's expanded customer choice programs, rates, and pilots in a separate section.

- In Section IV, I discuss revised business transportation electrification ("TE") initiatives that include the Commercial EV Charger Rebate Program, Business EV Charging Service Rate and Customer Education and Program Administration program to support these initiatives. These are previously filed TE initiatives from Docket Nos. ET-2021-0151 and -0269 that the Commission advised Evergy might choose to readdress in this rate case.
- In Section V, I discuss Income-Eligible Weatherization ("IEW") Program changes, which includes a proposed tariff change to allow for unspent annual funding to be moved to Dollar-Aide.
- In Section VI, I discuss Market Based Demand Response ("MBDR") tariff changes, which includes changes to address participation hurdles.
- I will also address requested variances to the Missouri Public Service Commission Chapter 13 Code of State Regulations on Service and Billing

[2] DER programs are also referred to as renewable or sustainable options in my testimony.

Practices for Residential Customers of Electric, Gas, Sewer, and Water Utilities[3] related to the Advance Easy Pay Pilot Program and Subscription Pricing Pilot Program.

II. EVERGY'S 2018 RATE CASE COMMITMENTS

Q: Please describe Evergy's commitment on TOU rate implementation within the 2018 Rate Design S&A.

A: Within the 2018 Rate Design S&A, signatories agreed that:

> "The Company believes TOU rates should be part of a broad selection of rates offered to Customers and utilized to help the Company provide an opportunity to Customers to shift demands from peak periods and benefit from that shifting load. Further, TOU rates allow the Company and Customers to extract additional benefit from recent upgrades in metering and billing systems."[4]

This offer was the foundation to Evergy building rate choice for its customers and development of Evergy's Rate Modernization Plan ("Rate Plan"). Starting immediately after its rate case approvals in 2018, the Company began executing on its commitments from the Rate Design S&A. Evergy utilized the following twelve months to research, develop and implement the S&A's requirements to develop a TOU rate plan and looked to turn this pricing mechanism into a cohesive, productized solution for customers and engaged over 80 subject matter experts from almost every area of the Company. Evergy launched the 3-period, opt-in TOU rate for its residential customers on October 1, 2019 as agreed upon in the Rate Design S&A.

[3] 20 CSR 4240-13.0365 *Variance*

[4] *Non-Unanimous Partial Stipulation and Agreement Concerning Rate Design Issues*. Case No. ER-2018-0145 and ER-208-0146, filed September 25, 2018, Section 2

The Rate Design S&A included a rigorous list of requirements that Evergy followed to offer its TOU program. The list of requirements included a great deal of stakeholder input and identified a number of steps to guide the deployment. The guidance covered:

- Details to define the TOU rate design
- Development of a comprehensive customer research, education and marketing plan
- Evaluation of leading practices on customer education and engagement on TOU deployment
- Development of a process to solicit feedback from customers
- Metrics to gauge changes in customer behavior
- Various opportunities for stakeholder engagement and update

Parties agreed that the rate would be offered as opt-in (versus mandatory or opt-out) and there was a great deal of interest by both parties and Evergy to ensure its success. A significant amount of transparency was developed within the Rate Design S&A with both stakeholders and the Commission to share progress on the development of each phase of the TOU offer. Over the course of the past three years, Evergy met with stakeholders eight times to discuss the TOU implementation and share plans for the TOU Rate Design Case[5], presented to the Commission two times and gave an on-the-record presentation for its TOU Rate Design Plan[6]. Evergy concluded its stakeholder and Commission commitments in December 2021 with the submittal of the

[5] Ibid.
[6] *Time of Use Case Rate Design Plan On the Record Presentation* by Brad Lutz and Kimberly H. Winslow on September 28, 2021

final TOU Evaluation, Measurement and Verification ("EM&V") Report[7]. Although not stipulated to do so, Evergy is scheduling a meeting to share the final EM&V report with stakeholders in January, 2022.

Q: Has Evergy's TOU deployment been successful?

A: Yes. The TOU deployment has been successful, particularly with respect to measurement against enrollment targets set within the Rate Design S&A, achievement of the deployment's three primary goals, and customer satisfaction resulting from participating in the program.

Within the Rate Design S&A, each jurisdiction (MO West and MO Metro) had a goal of reaching 1,750 customers by December 31, 2020. These goals were substantially exceeded. As of December 31, 2021, Evergy exceeded the enrollment target with a total of 6,080 active enrollments (3,172 enrollments in MO West and 2,908 enrollments in MO Metro). This equates to about 173% of the stipulated goal, or 181% in MO West and 166% in MO Metro.

Regarding the TOU rate goals, the primary goals included:

- Expand realm of customer choice by offering new choice based, time varying rates;
- Reduce system coincident peak demand; and
- Align pricing structure with cost causation.

With respect to the first goal, offering an opt-in rate that leveraged the full implementation of AMI meters, was new for both Evergy and its customers. Evergy shared with the Commission and stakeholders the extensive customer research plan and results informed critical product, marketing and customer education decisions. For

[7] *Evergy Missouri Residential Time-of-Use Rate Evaluation, Final Impacts for Missouri Metro and West Jurisdictions*. Prepared by Guidehouse, December 23, 2021. Submitted in Case No. ER-2018-0145 and ER-208-0146.

implementation, the Company built momentum for the introduction of the new TOU plan by first educating with employees, and then connecting with "Innovators and Early Adopters". Employees are our best advocates for our programs, and it is important they can speak to friends, family and customers about what the plan (or product) is, how it works and how it might benefit customers. Early enrollment from our employees is beneficial as well so that they can gain that first-hand experience and provide feedback on the customer journey. As of December 17, 2021, Evergy had 21 employees enrolled in the TOU program in Missouri. The Innovators and Early Adopters are key demographic groups known to seek out new approaches, to ignite early awareness, enrollment and advocacy, moving the effort in a positive direction as greater awareness was built within the larger customer base for greater enrollment.

To attain the second goal of measuring the reduction of system coincident peak demand from the TOU offer, Evergy retained Guidehouse Inc. ("Guidehouse"), to support the efforts to study residential TOU rates and provide independent evaluation services to verify the ex-post (historical) impacts of the TOU rates through an EM&V. Guidehouse completed an interim EM&V in December 2020 and a final EM&V in December 2021. The key findings from the final EM&V are described below.

The third goal of aligning TOU pricing structure with cost causation was analyzed by Evergy Time of Use Rate Design Case Report[8] ("TOU Rate Design Case Report") and subsequent on-the-record presentation to the Commission. Evergy performed extensive analysis to support the pricing structure, which included analyses of season, time period and price differential. The analytical approach was geared

[8] *Time of Use Rate (TOU) Rate Design Case Report*; June 15, 2021

toward determining the optimum seasonal TOU pricing periods and price differentials that reflect the current drivers of system generation and distribution capacity needs and the market energy price variation. The study assembled and analyzed system and retail class loads and wholesale cost data for 2019. These analyses were described in great detail in the TOU Rate Design Case Report. Evergy recommends changes to the TOU rate as a result of these analyses, which is described below and in more detail within Company witness Lutz' testimony.

With respect to customer satisfaction, the final EM&V established that 82% of participating customers were highly satisfied with the TOU rate plan and 79% thought that the TOU rates met their expectations very well.[9] Moreover, over 70% responded that they would recommend the plan to family or friends.[10] Participants' satisfaction was driven by sense of control over cost, shifting was "not too painful", education and tools provided encouragement, and ability to cancel the plan if not satisfied.[11]

Q: What are the key findings of the final EM&V?

A: The key evaluation findings summarized from the final EM&V Report are:

- **Energy Impact** - Results indicate that the TOU rate and associated program design has had the desired effect of reducing consumption during the on-peak period (4-8 pm M-F) in both the summer and non-summer seasons and driving participant bill savings (on average).
- **Peak Demand Impact** - TOU participants in the MO Metro on average reduced their average summer coincident peak demand by 0.31 kW, or approximately 14% below their average pre-TOU summer coincident peak demand, and TOU participants in the MO West on average reduced their average summer coincident peak demand by 0.12 kW, or approximately 4% below their average pre-TOU summer coincident peak demand.
- **Bill Impacts** - On average, participants are saving annually. Summer bills see the greatest savings, approximately half of which are driven by behavioral changes

[9] Guidehouse Final EMV, Section 3.3.5.1
[10] Guidehouse Final EMV, Section 3.3.6.2
[11] Ibid.

while non-summer bills see an increase for those previously on the electric heating rate primarily driven by rate structure changes.

- **Bill Savings** - Annual bill savings for general residential customers is 6.5% in MO Metro and 4% in MO West. Annual bill savings for residential space heating customers is a 2.3% bill increase in MO Metro and a 4.2% decrease in MO West.

- **Attrition** – Approximately 50% of the attrition (over 2,100 customers) that occurred during the evaluation period was from customers moving out of Evergy's service territory (versus dissatisfaction from the program).

Q: How did the Commission authorize Evergy to recover TOU program costs?

A: As described in the 2018 Rate Design S&A, Evergy was authorized to defer for recovery prudently incurred program costs including marketing, education, EM&V costs and other costs to offer the program. In Evergy's next rate case, which is this case, Evergy was authorized to recover the costs at the level represented by the percentage of customers enrolled in the TOU service at the time of the filing compared to the target level (1,500 customers in each jurisdiction). Evergy was not authorized to exceed 100% recovery of its costs. Evergy also has a burden to demonstrate that such percentage was not simply a result of transferring customers to a lower rate, but it is based on efforts directly related to changing customer behavior through marketing and education.

Q: How has Evergy demonstrated that participants changed behavior as a result of transferring to the TOU rate and that they are not merely "free-riders"?

A: Evergy has demonstrated that participants did adopt behavior changes as a result of transferring to the TOU rate and that participants (in general) were not free-riders. A free-rider is a term often used in a context of energy efficiency – it means that a participant would have undertaken the measure anyway without any incentive. In the case of TOU, a free-rider can be described similarly – a participant that benefited by switching to the TOU rate with no behavior change influenced by the utility.

As supported by Guidehouse on Page 7 of the final EM&V:

> "Evergy's Stipulation Agreement specifies that Evergy must demonstrate that customer enrollment in the TOU rate is not driven entirely by customers whose load profiles enable them to realize windfall gains by simply transferring to the TOU rate without effecting any additional changes in behavior. Such a situation would be easily identifiable in the results of Guidehouse's evaluation: if customers only enrolled in the program in anticipation of windfall gains without any intention to undertake behavioral changes, the evaluation would report material bill impacts without any commensurate TOU period energy impacts. In fact, as shown in this report, participants in nearly all segments in both jurisdictions demonstrated behavioral response to the TOU pricing in line with the incentives it provides, specifically: average reductions in consumption during the highest price on-peak periods. Enrolled participants have exhibited behavioral response to the TOU rates in line with the incentives embedded in that rate."

Q: What expenses is Evergy seeking approval from the Commission related to the TOU program?

A: Since Evergy undertook its initiative to launch the TOU program by October 2019 and through December 2021, Evergy invested $2.86 million in prudently incurred expenses, which includes marketing, program education tools, EM&V and other costs for the TOU program. The projected true-up as of May 31, 2022 is $3.61 million[12].

Evergy is requesting 100% recovery of this prudent spend for several reasons. First, Evergy exceeded the S&A targets by 173% as of December 31, 2021. This percent represents active enrollments. Secondly, Evergy maintains that the expenses were prudently incurred to offer a successful TOU program.

[12] Deferred costs as of 12/31/2021 are the sum of actual costs incurred through August 2021 for MO Metro and MO West is $2,766,321 plus projected expenses of $88,889 for Sept-Dec 2021. Projected balance for May 31, 2022 is $3.61 million. (See CS-134 and CS-134E).

Q: What was the Commission approved budget for the TOU program?

A: The Commission did not approve a budget for the TOU program; however, during the course of the stakeholder meetings, Evergy shared an estimated budget of $3.248 million[13] for the 3-year period through 12/31/2021.

All of these components are necessary for a successful launch, implementation and evaluation of new product, such as TOU rates. Within the launch of any new product or program, it is important to first understand customer expectations and perform customer research. This helped to build the foundation for the development of a product campaign messaging, strategy and creative. Through industry research and customer research, Evergy evaluated different approaches to educating its customers on TOU so that customers could successfully enroll, maintain their participation and effect behavior change to shift energy and lower bills. Evergy developed a robust "Wait 'til 8" campaign that continues to be integral in marketing TOU and continues to utilize various channels for successful customer engagement and education, which include email, digital, social, mail and radio. Alongside marketing education, Evergy also implemented an online rate analysis tool that simulates a customer's historical usage to recommend the lowest cost rate plan and provides a "Change My Plan" button for the customer enroll in the TOU program. TOU enrollment is strategically executed for customers to engage online, which reduces number of calls driven to the customer call center and ultimately drives down costs. Over 90% of Evergy's Missouri TOU customers enrolled digitally, a noteworthy accomplishment.

[13] Presentation to stakeholders on 12/20/2018, Page 22

III. RATE MODERNIZATION PLAN

Q: Please describe Evergy's Rate Modernization Plan.

A: In 2020, Evergy developed a Rate Modernization Plan ("Rate Plan") to guide the Company on several identified rate objectives over a period of time. Evergy shared its Rate Plan with the Commission in several settings[14]. The Rate Plan provides a framework for Evergy that is both responsive to its historical regulatory obligations in Missouri and Kansas, but also provides a framework for the Company's future general rate case filings.

The drivers of Evergy's Rate Plan are not all encompassing. However, the drivers identified reflect that the utility must balance many forces to increase overall customer satisfaction while recovering revenue requirements. The Company identified the following drivers to inform the Rate Plan:

- Rates should include proper price signals that will enable adoption of emerging energy technologies that are most beneficial to the grid.
- Rates should implicitly promote beneficial electrification and grid benefits.
- Customer surveys indicate that higher customer satisfaction is directly correlated to choice.
- As a result of mergers and acquisitions the past two decades, Evergy has multiple service territories in Missouri and Kansas with disparate rates.
- Strive for rates that are more equitable across diverging customer classes and subclasses.
- Significant MPSC and KCC interest exists around TOU and distributed generation rates.

[14] *Evergy's Sustainability Transformation Plan Customer Experience Presentation* by Charles A: Caisley, February 4, 2021; *Rate Design Time of Use Case Report*, June 15, 2021; *Time of Use Case Rate Design Plan On the Record Presentation* by Brad Lutz and Kimberly H. Winslow on September 28, 2021.

Through the Rate Plan, which will be executed over several rate cases and will flex with changes in regulatory outcomes, industry developments and customer desires, the Company will drive towards the following rate objectives:

- Creating rates that are independent of end use requirements
- Bringing rate structures closer together across jurisdictions
- Enabling business growth
- Simplifying rates and increase pricing transparency
- Providing greater customer choice
- Increasing customer satisfaction
- Leveraging Customer Information System ("CIS") and Advanced Meter Infrastructure ("AMI") investments
- Developing price signals to increase grid efficiency

The Rate Plan is a journey – not a destination. It is expected to flex over time based on Company objectives and needs, customer interest and technology changes. This rate case is Evergy's first opportunity to file for additional rate tariffs and programs envisioned in its Rate Plan.

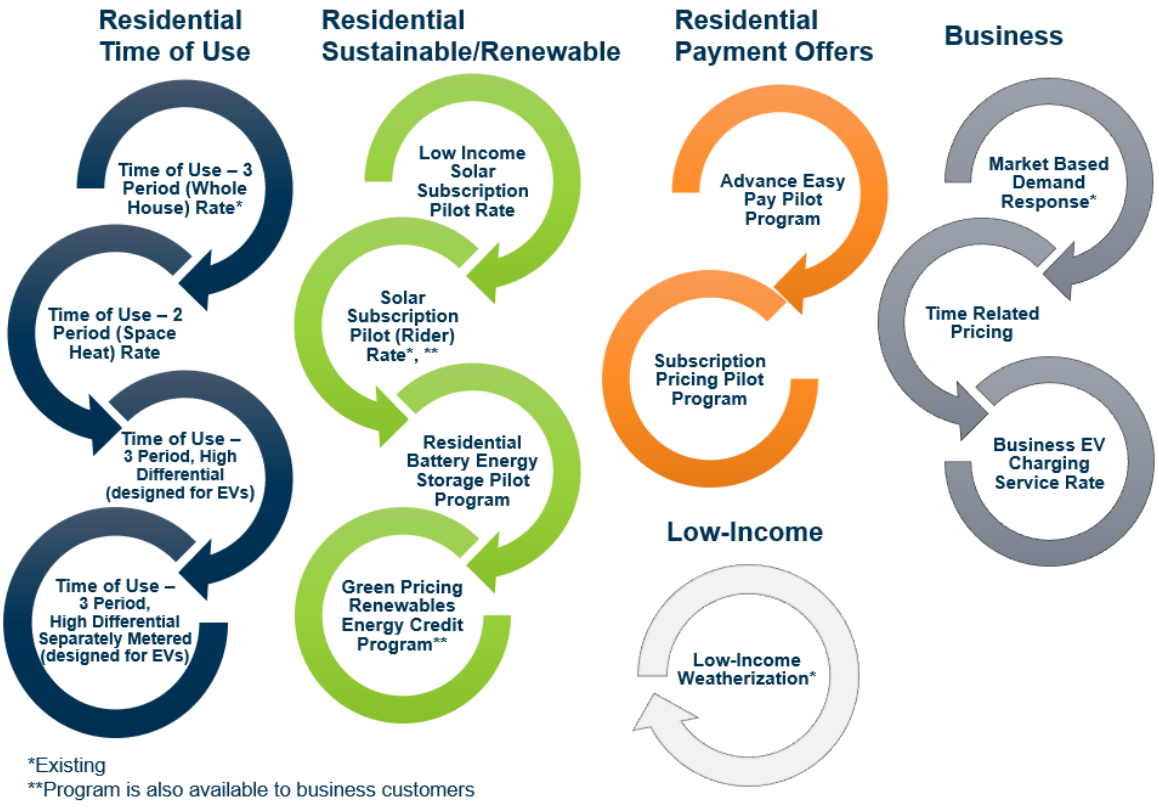
Q: Why is it important to offer customers additional choice in rates?

A: While having the option to choose from multiple plans or services is not new in most aspects of a customer's life, the ability for an Evergy residential customer to choose from multiple rates is a new concept to customers given the regulated utility environment. Historically, rates have been focused on revenue recovery and providing only basic pricing signals. As the utility landscape has evolved and choice has evolved for customers in almost all facets of their lives, Evergy has prioritized choice for its customers. Company witness Caisley further elaborates on Evergy's approach to customer choice and its supporting customer research.

Q: Please describe the programs that Evergy is proposing in this case.

A: Evergy is proposing several new programs in this rate case that are a direct result of the extensive thought leadership in its Rate Plan, as well as changes to its existing rates, to offer customers additional choice. Some of these programs will be proposed as pilots.

Below is a graphic of Evergy's proposed programs addressed in this filing and included within Evergy's witnesses' testimonies.



Below is a description of each proposed program and/or changes:

TOU Tariffs

- Three-Period (3-Period) TOU - As described above, the 3-period whole-house TOU rate, approved in 2018 and launched in 2019, is an existing rate. Company witness Lutz addresses changes to this rate in his testimony. I will discuss later in my testimony how the 3-period rate is a cornerstone to our Rate Plan and remains foundational to our customer rate offers.

- Two-Period (2-Period) TOU – This is a new rate proposed that will provide customers who have less ability to shift usage throughout the year an additional TOU rate option and address the bill impact of the 3-Period TOU rate typically occurring for space heating customers.
- High Differential TOU Rate – This 3-period rate was constructed with a high price differential between super off-peak (night) and on-peak time periods (12 times for MO Metro and 10 times for MO West) to better accommodate the charging patterns of EV drivers.
- Separately Metered Electric Vehicle TOU Rate – This is the same pricing rate structure as the High Differential TOU Rate; however, the rate requires the customer to install a separate meter for EV charging while providing the customer the option to choose from a different rate in Evergy's portfolio for its other home usage.

Other Customer Programs or Offers:

- Subscription Pricing Pilot Program – The offer will provide residential customers with an entirely fixed monthly electricity bill with no true-up. A new, updated offer will be presented annually to the customer. Evergy's proposed design also provides for two additional add-on's for the customer to choose, including a smart thermostat and clean energy options. Company witness Ryan Hledik of Brattle provides detailed testimony on the proposed framework of the subscription pricing pilot program.
- Advance Easy Pay Pilot Program – Advance Easy Pay is a payment plan similar to other industry commission-approved prepay programs in which residential customers can pay for electric usage in advance and add funding when and how they prefer with additional options and flexibility for account management.

DER Programs and Tariffs:

- Low-Income Solar Subscription Pilot Program – This offer is similar to Evergy's Solar Subscription Pilot Rider ("Schedule SSP")[15] approved in December 2018; however, the program proposed in this rate case is specific to low-income ("LI") customers.
- Residential Battery Energy Storage Pilot ("RBES") Program – This pilot will allow Evergy to advance its operational knowledge of behind-the-meter ("BTM") residential battery energy storage systems and evaluate opportunities to utilize the technology to produce customer savings and utility benefits.
- Green Pricing Renewables Energy Credit ("REC") Program – This program will expand choice and flexibility to customers to meet sustainability goals outside of customer-owned solar or participation in a solar or wind subscription offer.

[15] This tariff is proposed to be revised to Solar Subscription Rider, Schedule SSR, in this rate case.

- Solar Subscription Rider – This program is an existing solar subscription pilot. Company witness Lutz further describes changes to this tariff and proposal to move it from a pilot to a permanent offer.

Business Programs:

- TOU Business EV Charging Service Rate – This tariff is a business TOU rate corresponding to the TE initiatives from Docket Nos. ET-2021-0151 and -0269. The pricing was adjusted to reflect the revenue increase proposed in this case. Company witness Lutz further discusses this rate.
- Market Based Demand Response – This proposed change is an update to the tariff to better facilitate participation and market opportunities.
- Time-Related Pricing – This new program offers customers energy pricing that is time differentiated and based on historical locational marginal prices from the market. Company witnesses Lutz and Miller further discuss this rate.

Low-Income:

- Low-Income Weatherization – This includes a proposed tariff change to allow for unspent annual funding to be moved to Dollar-Aide.

Company witnesses Winslow, Lutz, Miller and Hledik provide details of these proposed programs/tariffs. Company witnesses Caisley and Ives provide strategic direction and policy related matters associated with these proposed programs/tariffs.

a. Residential Time-of-Use Rates

Q: What residential time-of-use rates do you address in this section?

A: I will provide a high-level overview of the existing 3-period TOU rate, proposed 2-period TOU rate, and a proposed 3-period, high-price differential TOU rate and Separately Metered EV TOU tariff designed for the EV driver in mind.

i. Existing 3-Period TOU Rate

Q: Please describe the existing 3-Period TOU Rate.

A: As described above, the 3-period TOU rate was Evergy's first TOU rate since its broad implementation of AMI meters. The program was approved in December 2018 and launched in October 2019 as an opt-in rate. The rate is offered as a whole-house rate with a 6-times price differential between the on-peak and super off-peak (night) rate.

The offer has been evaluated by Guidehouse twice in the past 24 months and is accomplishing its goals and objectives, as described above.

Q: What changes is the Company proposing for this rate?

A: This rate continues to be a cornerstone of Evergy's Rate Plan. It provided for extensive insight into what our customers want from Evergy in terms of rate choice and enabled Evergy to understand the education and tools required to walk customers through the journey of rate selection. It also provided the opportunity to understand other TOU rates to complement the 3-period rate, which are proposed herein, including a new 2-period TOU rate and a high differential TOU rate designed for EV drivers. I will address these rates in greater detail below. Evergy is proposing minimal changes to the existing 3-period TOU rate, which include:

- Align summer seasons to June 1-September 30
- Reduce the non-summer price differentials to better reflect cost

Company witness Lutz further elaborates on these changes in his testimony.

ii. New 2-Period TOU Rate

Q: Please describe the proposed 2-Period TOU Rate.

A: Evergy proposes to add a 2-period TOU rate to provide customers an additional TOU rate option that could be attractive to customers with less ability to shift usage throughout the year and address the bill impact of the current TOU rate typically occurring for space heating customers. The rate is proposed as a whole-house rate with a 4-times price differential between the on-peak and super off-peak rate during the summer and a 2-times price differential between the on-peak and super off-peak rate during the winter. Company witness Lutz further elaborates on the details of the 2-period TOU rate in his testimony.

Q: What is the proposed implementation date for this rate?

A: Evergy proposes that this rate be implemented alongside the other MPSC approved rates on the effective date ordered by the Commission following approval. Evergy is not requesting additional time to offer this rate to its customers.

iii. New Residential TOU Rates for EV Drivers

Q: Please describe the similarities of the new proposed 3-period, high-price differential TOU tariff and the separately metered EV TOU tariff.

A: These tariffs are designed to appeal to EV drivers and consist of the same 3-period rate constructed with a high price differential between super off-peak (night) and on-peak time periods (12 times for Missouri Metro and 10 times for Missouri West). The same rate is applied in both tariffs. Although this rate is designed with the EV driver in mind, its eligibility is not restricted to EV drivers only. Evergy developed a high price differential TOU rate that can be offered as a whole-house rate, but this same rate is also offered as a separately metered rate where the customer will pay for the cost of installing a dedicated service and meter to measure EV charging. This tariff offers the benefit of TOU pricing for off-peak EV charging, but it allows the customer to choose a rate plan that best fits their whole house. Company witness Lutz further supports these EV TOU rates in his testimony.

Q: Were the proposed high priced differential TOU tariffs, which are designed to appeal to EV drivers, included in the Rate Plan that Evergy shared with the MPSC or stakeholders in its Rate Design TOU Report and Evergy's TOU On-the-Record Presentation?

A: No, they were not. I shared earlier that the Rate Plan is a journey – not a destination. Evergy will continue to evolve its Rate Plan, depending on customer needs, technology

changes, industry changes or stakeholder input, for example. Evergy began to identify the need for an EV TOU Rate during its Transportation Electrification ("TE") filing[16]. Staff and OPC shared concern that Evergy's proposed residential rebate program did not require participants to enroll in Evergy's residential TOU rate as a condition of receipt of a home charging incentive for a 240V outlet. Evergy contends that the existing rate is a whole-house rate, and the existing TOU rate may not be an optimal choice for all EV owners. While the final EM&V results showed some increase in EV driver enrollment relative to the interim EM&V, it is concerning to Evergy that it did not see as great of participation from this segment of self-identified EV-driving customers. Evergy proposes this 12X and 10X price differential (versus 6X) to target EV drivers specifically. These higher price differentials facilitate a low night rate for EV charging. A customer may choose the whole-house 3-period rate designed to appeal to EV drivers, or the separately metered option with the same rate design allowing for the customer to retain their existing residential rate for the home but install a meter to measure EV charging only usage. Given the state of EV adoption in Evergy service territories, this is the ideal time for Evergy to propose these tariffs, to measure the effectiveness of the rate and continue to educate EV customers, alongside with the other options in its Rate Plan. This offer will broaden Evergy and the Commission's understanding of EV charging and EV driver behavior and how utilities can influence off-peak and nighttime charging ***before*** it becomes a major grid impact.

[16] *Approval of a Transportation Electrification Program*, Docket Nos. ET-2021-0151, 0269

Q: What is the proposed implementation date for these tariffs?

A: Once Commission approved, the 3-period, high-price differential TOU tariff and the separately metered EV TOU tariff will require rate configuration time and inclusion and coordination with other TE programs, pending the TE order from the MPSC. To allow for this additional time, Evergy proposes that the Commission approve its request to offer these tariffs on or after April 1, 2023.

b. Other Residential Customer Programs or Offers

Q: What other residential customer programs or offers do you address in this section?

A: I will address the Subscription Pricing Pilot Program, at a high level, and the Advance Easy Pay Pilot Program.

i. Subscription Pricing Pilot Program

Q: Please describe the proposed Subscription Pricing Pilot Program.

A: The offer will provide residential customers with an entirely fixed monthly electricity bill based on the customer's historical weather normalized usage. It also has several innovative features such as a simple, no-risk financial incentive that rewards customers for limiting their energy use when enrolled in the offer and two optional add-ons that are designed to encourage adoption of smart thermostats and the purchase of renewable energy credits. Company witness Ryan Hledik with Brattle provides testimony on the details of the subscription pricing offer and Company witness Lutz further describes the treatment of revenues, riders and other costs of the subscription pricing offer relative to the standard rate.

Q: How does the smart thermostat add-on relate to the Company's smart thermostat (residential demand response) program approved by the MPSC within the Missouri Energy Efficiency Investment Act ("MEEIA")?

A: The smart thermostat add-on offered in the Subscription Pricing Pilot Program is independent of MEEIA. As described in witness Hledik's testimony, the smart thermostat add-on is intended to help participants improve energy efficiency. The add-on will establish a platform for future demand response ("DR") offerings that may be contemplated by the Company as it relates to this program and interwoven with its MEEIA DR programs.

Q: What primary customer research was performed by Evergy to support the Subscription Pricing pilot offer?

A: Evergy performed both qualitative and quantitative research. Qualitative research is most appropriately used to identify perceptions, experiences, and issues; and to explore them in-depth. It is the process of collecting, analyzing, and interpreting non-numerical data. Quantitative research involves the process of objectively collecting and analyzing numerical data to describe, predict, or control variables of interest. The goals of quantitative research are to test causal relationships between variables, make predictions, and generalize results to wider populations. The qualitative research was based on 39 individual customer interviews and the quantitative research was fielded using Evergy's Customer Advisory Panel of nearly 2,000 customers.

The qualitative research showed that most customers appreciate rate plan options. The Subscription Pricing plan was well received by moderate-income households that seek a stable electric bill with no true-up and that they are willing to pay a premium for this stability. However, other customers, such as renters or low-

income customers, did not find the Subscription Pricing plan to fit their lifestyle. Within the quantitative research, nearly half of the surveyed customers wanted to learn more about a plan that allowed for a fixed bill. The research reiterates that customers want options and not one plan fits all.

Q: How will this pilot program interact with existing Missouri Public Service Commission State Rules and Regulations – Chapter 13?

A: The Company is requesting variances to Chapter 13 for this program due to the nature of the unique nature of the Subscription Pricing structure. A more detailed list of the waivers can be found in the cover letter to this case and provided in Schedule KHW-1.

Q: What is the proposed implementation date for this offer?

A: Evergy anticipates that this offer will require similar levels of customer research and evaluation of customer education, marketing and tools that Evergy also undertook with its 3-period TOU rate. Upon approval, Evergy will develop a customer research plan for the Subscription Pricing offer and will leverage customer feedback to help decision making process related to all aspects of marketing, program design and continuous improvement opportunities. As Mr. Hledik explains in his testimony, Evergy will develop a plan to recruit the target number of customers into the pilot but it will also not "turn away" any customers who opt to participate. To allow for this additional time for full development of the pilot given the complexity of developing and creating the offer, Evergy proposes that the Commission approve its request to offer this program to customers on or after October 1, 2023.

Following successful pilot recruitment, as outlined in Mr. Hledik's testimony, Evergy will then collect participant data for at least one year in order to begin to draw useful conclusions about the subscription pricing offering. Evergy will evaluate the

success of the subscription pricing pilot program and whether or not to seek to move it to a full scale offer in a future rate case proceeding.

ii. Advance Easy Pay Pilot Program

Q: What is the Advance Easy Payment Pilot Program?

A: The proposed Advance Easy Pay is a voluntary payment pilot. This optional payment pilot program is referred to as "Advance Easy Pay". The pilot is designed to enhance customers' awareness and understanding of "real time" energy use and cost while also enabling payment optionality – customers will prepay for electricity how and when they choose. Evergy's Advance Easy Pay Pilot Program is similar to other industry, commission-approved prepayment programs[17].

This pilot program will leverage Evergy's AMI technology by allowing participants to monitor electricity usage and purchase power on an "as-needed" basis so that a customer can manage their budget more dynamically. This pilot program also allows customers to avoid deposits or late fees, and it puts a customer more in control to view energy use and account balance daily. For example, once an initial payment to an account balance is paid, Evergy will start tracking the customer's energy consumption and deduct it from the customer account daily. This will be visible to the participating customer so that they can make daily purchasing decisions that work best for them.

Given that Evergy proposes this as a pilot, Evergy has outlined objectives, set an enrollment threshold, and proposes an evaluation by a third-party. I describe each of the components below.

[17] Evergy reviewed other electric utility prepay programs including Georgia Power, Public Service Company of Oklahoma and Duke Energy as well as Evergy engaged with ESource prepay working group in the development of its Advance Easy Pay Pilot Program.

Q: Please further elaborate on the customer benefits of the Advance Easy Pay Pilot Program.

A: Evergy has reviewed several utility pre-payment programs. An understanding of benefits include:

- *Enhanced control, awareness, and predictability of energy expenses and budgeting.* Customers can conveniently monitor both usage and account balances as needed through a web based or mobile application in near real-time. Participants will be able to see the estimated days of power remaining on their account and avoid surprise bills. It enables participants to pay how much they want and when they want.
- *Increased satisfaction and energy understanding*. Participants will receive more personalized and proactive communications tailored to meet their preferences and assist with a better understanding of energy costs. The primary goal of the personalized, proactive communications is to avoid disconnection or reduce the length of disconnection if unavoidable using AMI and payment option technology.
- *More payment flexibility and convenience*. Participants can fund their account any time from many channels such as online account, mobile app, telephone, or in person with a cash option at a variety of retail partner locations.
- *Reduction in usage and cost savings*. Similar utility programs have shown that by being more engaged and aware of energy use, a participant may lower energy costs.
- *Arrearages pay-off assistance*. Other similar utility programs provide a mechanism to pay down arrears balances while also funding the participant's account and keeping power on.

Q: What objectives has Evergy defined for the pilot?

A: Evergy proposes this as a pilot to allow time for data collection and to understand participants' needs, habits and preferences, as well as potential operational efficiencies. Evergy has identified the following key learning objectives; however, Evergy is open to understanding Commission and stakeholder objectives as well:

- How do enhanced prepayment communications regarding energy use and cost alter customer behaviors (independent of energy use fluctuations due to disconnections or weather)?
- How does this payment option affect total customer debt?
- Would debt write-off be decreased?

- Do participants experience a lower frequency and duration of disconnect events?
- How often will participants add funds to their account?
- Where do customers choose to add funds and by what method?
- What are the most effective communications for participants and how well do participants understand the pilot?
- What are participant demographics (e.g., location, age, income level, preferred language)?
- What are the primary reasons for participants choosing this program? Or un-enrolling?
- What are the full cost and benefits of this program?
- What are the most effective marketing channels and efforts?
- How many customers will voluntarily disconnect service?
- How does a participant's satisfaction compare with a non-participating customer?
- Is a participant more informed of their electricity usage?

Evergy will work with stakeholders to evaluate the success of the Advance Easy Pay Pilot Program to determine whether or not to move to a full-scale offer in a future rate case proceeding.

Q: What are the eligibility requirements for the pilot?

A: This is a voluntary pilot that will be limited to the 5,000 qualified Missouri customers with the cap divided between the MO West and MO Metro jurisdictions. If the cap is met sooner in one jurisdiction versus another, Evergy will notify the Commission that it is adding cap headroom in one jurisdiction and reducing by the same amount in the other. The total number of participants will not exceed the 5,000 Missouri cap.

Eligibility requirements are as follows:

- Standard, residential electric service customer, excluding net metering
- AMI meter with remote disconnect/reconnect capabilities
- Email address validated by Evergy and enrolled in My Account
- Less than $1,000 in outstanding debt at enrollment

- Is not a life support customer
- Must not have been previously removed from payment assistance programs due to payment tampering, diversion or fraud
- Minimum starting balance of $40 to fund account
- Not enrolled in budget billing

Q: How does this program differ from the Company's budget billing payment plan? Or can't customers prepay their bill today?

A: This program is different in various ways. First and foremost, this program allows for the customer to purchase electricity on an "as-needed" basis so that a customer can manage their budget more dynamically. There is no true-up at any time; it provides customers the optimal opportunity to understand how their bill is impacted by their usage without a delayed effect. Customers will grow in their understanding of how much they spend per day and will have a higher degree of accountability to understand usage and cost. They will no longer have a "wait and see" approach to understanding usage and cost – they will be able to see how their actions impact their balance without waiting for a monthly bill. Customers will avoid late fees, deposits and credit checks, avoid reconnect fees and likely reduce energy use. The Company's budget billing payment plan does not provide for these benefits and it trues up usage and average bill months later. The same is true if customers would choose to prepay their bill – they do not see the immediate cause and effect of their energy usage on their bill until many days later.

Q: Does this proposed pilot program offer comply with the Company's 2018 Rate Design S&A?

A: Yes, it does. In the 2018 Rate Design S&A, the Company agreed that it would not seek a prepay program as part of its MEEIA portfolio before 2025. The Company further

agreed that if it filed for a stand-alone prepay program before 2025, that it would meet with parties three months in advance of the filing. Evergy has complied and met with parties on October 5, 2021, and again on December 10, 2021, to share its Advance Easy Pay Pilot Program design. Evergy is not seeking any lost margin or throughput disincentive associated with program participant energy efficiency reduction that may be determined from the third-party evaluation for this pilot.

Q: In previous cases, there has been stakeholder concern that a prepay program targets or is a detriment to certain customers. Does Evergy's proposed Advance Easy Pay Pilot Program only target low-income or customers in arrears?

A: No. Evergy reviewed stakeholder concerns to understand potential opposition to a prepay program. This pilot will not target low-income or customer in arrears – it instead is designed to be offered equitably to all residential customers. Evergy will not exclude these low-income or customers in arrears from enrolling as they can voluntarily enroll based on the benefits of the pilot that fit their needs. A study performed by ESource in 2015 determined that over 40 percent of customers surveyed indicated that they were very likely or somewhat likely to participate in a prepay program. There was a stronger correlation among younger people, renters, those with smart meters and those who received monthly comparison reports.[18] Given the nature of the program design and its benefits, Evergy anticipates diverse customer participation.

In an effort to learn from this pilot, Evergy proposes to insert a limit that no more than 15% of the pilot participants will be income-eligible. The definition used for income-eligible in this instance is a customer that is eligible for LIHEAP and/or

[18] ESource Innovative Residential Rate Design and Pricing 2015: Customer Preferences and Acceptance; 2015 Quantitative Research Results from an E Source Multi-Client Market Research Study

Income-Eligible Weatherization programs. This equates to a customer having a household income at or below 200% of the current federal poverty level ("FPL") or 60% of state median income level ("SMI"). Customers receiving financial assistance under existing Evergy programs can participate in the Advance Easy Pay Pilot Program just as any other customer. Financial assistance payments would be applied directly into an Advance Easy Pay account. Evergy plans to work with financial assistance agencies and provide education on this new payment option.

Additionally, to support customers in arrears, Evergy proposes payment flexibility. Customers with account debt may split payments between amount owed for debt recovery (25%) and amount for future energy use (75%). This allows for participants to keep their power on without having to pay off a debt balance in its entirety.

Q: How will this pilot program interact with existing Missouri Public Service Commission State Rules and Regulations – Chapter 13?

A: The Company is requesting variances to Chapter 13 for this program due to the nature of the pre-pay payments versus what is contemplated in the post-pay structure of the billing and disconnection rules. A more detailed list of the waivers can be found in the cover letter to this case and provided in Schedule KHW-1.

Q: Specifically of those Chapter 13 requirements, how will this pilot program interact with customer disconnect rules?

A: Evergy will make several attempts to notify pilot participants ahead of time to avoid potential service disconnection. These notifications will include preferred method of contact (such as automated voice, text, or email messages) alerting participants when

their account balance is "low". For all pilot participants this "low" balance alert will, at a minimum, be sent at five, two and one day ahead of estimated electricity remaining.

If an account falls below a $0 balance, Evergy is also proposing the following restrictions for impending service disconnection:

- Limited to business days only
- Will not occur after normal business hours or on Evergy holidays
- Not to occur during extreme weather periods
- Adhere to the Missouri Cold Weather Rule[19]

Most of these restrictions are the same for service disconnection when non-payment occurs with a customer on a traditional payment plan. During business hours, Evergy is committed to restoring power in under one hour after an account payment is received bringing account balance to minimum of $5.00. Evergy is proposing that participating customers will be exempt from any service reconnect fees as part of this pilot program.

For qualifying income-eligible customers, they will not be subject to disconnect upon an account falling below a $0 balance under this pilot. Instead, income-eligible customers will be reverted to a traditional payment plan and the Company processes surrounding payment plans after any period involving ten consecutive business days with an account balance less than $0. For non-income eligible customers, Evergy is proposing that customers be allowed to request a five-day extension up to two times per calendar year to allow for extra time to fund an account balance and avoid disconnection. Under this pilot condition, any unpaid usage still accrues towards

[19] 20 CSR 4240-13.055 *Cold Weather Maintenance of Service: Provision of Residential Heat-Related Utility Service During Cold Weather*

account balances. Customers can return to a traditional payment option plan at any time.

Q: How does Evergy propose the Advance Easy Pay Pilot Program be evaluated?

A. Evergy proposes that the pilot program be evaluated by a third-party, independent program evaluator following 24 months of data collection. Evergy proposes to work closely with stakeholders to define a process and impact analysis of the program. However, such analyses to drive findings could include:

- Detailed billing analyses comparing monthly energy usage of prepay participants (treatment group) to a matched sample of similar customers (control group)
- Determine the total reduction in energy consumption associated with the average participant enrolled in the prepay pilot
- Determine the average reduction in energy consumption associated with the number of hours in a day a pilot participant has been disconnected from service
- Determine peak demand reduction of participants
- Understand participants interaction with the program by income and other demographics
- Measure frequency and duration of disconnects associated with non-income eligible participants (income-eligible participants will not be disconnected in the pilot)
- Measure total customer debt and debt write-off
- Survey for communication effectiveness related to pilot of multiple channels (mobile, online, text, email, etc.)
- Conduct customer surveys to establish satisfaction, reasons for enrolling and unenrolling
- Measure the number of calls and other O&M impacts

Q. What is the budget for this pilot?

A: Costs for this pilot include capital and O&M. The capital budget for year one, or the initial deployment year, is estimated to be $1.3 million and this investment is further described below. After the initial deployment, the capital budget will vary based on

number of participants and is dependent on any meter upgrades/changeout needed to participate in the pilot. O&M costs include EM&V and administration and marketing. Evergy estimates an EM&V cost of $50,000. I further discuss administration and marketing costs for this program later in my testimony.

Q: How will the Advance Easy Pay Pilot Program be implemented?

A. Evergy envisions certain aspects of the pilot will be administered by an authorized program partner. An authorized program partner could be expected to facilitate the full utility prepay lifecycle experience for the customer. This pilot lifecycle could include:

- Prepayment software[20] that provides the Company with a branded customer web portal [including mobile web solution] where customers can view usage, monitor account balance(s), and add funds any time
- Implementation and execution support that would provide Company with ongoing reporting and customer service training
- Outbound communications that would provide customers with flexible text, email, and IVR[21] usage/payment alters
- Engagement and education support that would provide customers with training videos, budgeting tools, energy efficiency tips, and forward-looking cost estimates
- Payment processing that would support credit/debit/ACH processing as well as innovative self-service features such as account balance auto-replenish tools
- Cash payment support creating new retail partnerships with barcode payment processing (real time account validation and real time payment processing)

[20] Includes hosting, support, and maintenance
[21] Interactive Voice Response ("IVR") is an automated phone system technology that allows incoming callers to access information via a voice response system of prerecorded messages without having to speak to an agent

Because the Advance Easy Pay Pilot Program will require time to implement once approved, which includes such activities as customer research, marketing and vendor and third-party evaluator selection, Evergy proposes that the Commission approve its request to offer this program on or after April 1, 2023. Through the EM&V, Evergy will evaluate the success of the Advance Easy Pay Pilot program and whether or not to seek to move it to a full-scale offer in a future rate case proceeding.

c. DER Programs and Rates

Q: What residential DER programs do you address in this section?

A: DER programs are also described as Renewable or Sustainable customer options within my testimony. I will address the Low-Income Solar Subscription Pilot Program, Residential Battery Energy Storage Pilot ("RBES") Program, and Green Pricing Renewables Energy Credit ("REC") Program.

i. LI Solar Subscription Pilot Program

Q: What is the LI Solar Subscription Pilot Program?

A: In the 2018 Rate Cases, the MPSC approved the Company's proposal for its first solar subscription program in Missouri that would be offered to all eligible customers under the Solar Subscription Pilot Rider ("Schedule SSP"). Additionally, it was agreed upon by the signatories in the 2018 Rate Design S&A that "the Company will consider building SB564[22]-required solar at the same time/place with the understanding that that

[22] Section 393.1665 states "This act requires electrical corporations to invest in utility-owned solar facilities. Electrical corporations with more than 1 million Missouri customers shall invest $14 million, corporations with less than 1 million but more than 200,000 customers shall invest $4 million, and corporations with 200,000 or fewer customers shall invest $3.5 million in utility-owned solar facilities located in Missouri or an adjacent state between the effective date of this act and December 31, 2023. If the rate impact of investment in such facilities would cause the electrical corporation to exceed a 1% maximum average retail rate increase, such excess costs shall be deferred to a regulatory asset, including carrying costs at the electrical corporation's weighted average cost of capital, and shall be recovered in rates. Under this act, an electrical corporation's decision to invest in utility-owned solar facilities shall be deemed prudent, and permission from the Public Service Commission for

solar may be used for separate (low-income) projects". The Company recently submitted a Certificate of Public Convenience and Necessity[23] request in December 2021 where the Company filed to seek approval for 5 MWac of a 10 MWac solar array to be utilized to serve the needs of customers under that Schedule SSP. The remaining 5 MWac would be used to fulfill the requirements of SB564 legislation (393.1665 RSMo.). Evergy also indicated in that Certificate of Public Convenience and Necessity filing that it intended, as part of this rate case filing, to propose that 1 MWac of the 5 MWac portion of SB564-required solar be allocated equally between MO Metro and MO West to meet LI customers' needs through a LI Solar Subscription Pilot Program ("Schedule LCS").

The purpose of the LI Solar Subscription Pilot Program is to provide clean energy access at an affordable and stable rate to underserved customers who otherwise might not be able to participate in renewables programs. Historically, solar energy offerings have been a premium product for customers who directly wanted to participate in accessing renewable energy. Evergy proposes to offer the LI Solar Subscription Pilot program with other Evergy programs that provide economic support to this demographic of customers. The program has also been designed so that it does not create cross-subsidization challenges with non-low-income customers.

construction of such facilities shall not be required. This section shall expire on December 31, 2023, except that any regulatory asset balance created under this section shall be recoverable after such date."

[23] *Permission and Approval of a Certificate of Public Convenience and Necessity Authorizing It to Construct, Install, Own, Operate, Maintain and Otherwise Control and Manage Solar Generation Facilities in Kansas City, Missouri*, Docket EA-2022-0043

Q: What other low-income programs are you referring to?

A: Evergy has a long-standing history of developing and offering successful programs for its customers in need. Evergy has several MPSC approved low-income programs that meet customers' various needs and Evergy also works closely to deliver state and/or federal low-income programs. These include, but not limited to:

- Economic Relief Pilot Program ("ERPP") - provides those with an income at or below 200% of the current federal poverty level with a credit of up to $65 per month, for a maximum of 12 consecutive months
- Dollar Aide - helps eligible individuals and families by assisting with their utility bills to avoid loss of service
- Income-Eligible Weatherization – provides for free in-home upgrades, financial assistance to weatherize your home, expert guidance, reduced energy usage and improved home health and safety for qualified customers
- Energy Savings Kit – through MEEIA, free home assessment and free energy-savings products
- Income-Eligible Multi Family – through MEEIA, offers custom incentives and no cost direct install measures to subsidized housing
- Low Income Home Energy Assistance Program ("LIHEAP") - for qualifying customers, a one-time per year payment up to $636 towards heating or cooling costs and an Energy Crisis Intervention Program up to $1600 that helps pay customer's bill if financial loss or hardship is experienced
- Emergency Rental Assistance Program ("ERAP") – for qualifying customers, customer can self-declare their Covid hardship and income for assistance
- Pay As You Save ("PAYS") – through MEEIA, covers all or most of the upfront costs needed to install energy efficient equipment in a customer's home through a fixed monthly PAYS charge on the customer's utility bill that is less than the estimated annual savings from the new equipment.

Evergy also offers payment plans for customers experiencing hardship and its Connect center for one-on-one consultation.

Q: Why is Evergy deeming this a pilot?

A: Because of the size limitation of the array (1 MWac), Evergy estimates a maximum of 2,000 solar blocks to be offered to customers, which will be split equally between MO Metro and MO West jurisdictions. Based on this size, Evergy estimates that 250 customers may participate in the program. The estimate of 250 customers is determined based on an average annual customer's usage of 14,400 kWh offsetting 50% of their usage and a 1 MWac solar resource with a 25.5% net capacity factor. Limiting the program as a pilot due to the array size will enable Evergy to fully assess the customer recruitment and retention process and evaluate the positive impact of connecting participants with the other Evergy programs described above. Evergy will continue this as a pilot until further resources are defined based on customer demand/need.

Q: Please explain the program design of the LI Solar Subscription Pilot Program.

A: Low-income solar subscription programs are aimed at increasing participation by low-income customers through attention to barriers to solar installation entry – particularly cost, education and outreach. The program design for the proposed low-income solar program is similar to Evergy's existing solar subscription program; however, the key differences include:

- If the MPSC approves this pilot, the solar resource is planned to be operational in 2022 and ready for customers to participate rather than waiting to reach a minimum enrollment threshold.
- The low-income solar block subscription charge ($/kWh) is offered at a lower price than current standard rates and will escalate at a rate percentage not-to-exceed average retail rates.
- Evergy proposes a "concierge" model to connect participants with other eligible programs described above. Evergy proposes to provide direct assistance to participants and leverage its existing employees and resources to connect low-income participants with other programs such as payment

support, financial assistance, energy savings advice and other available products and services. Such a model has been referred to as a "concierge" approach.

The following general program design elements are the same as the existing Solar Subscription Pilot Rider and include:

- Participants will subscribe and pay for solar blocks of 500 watts-ac each
- A participant may select up to 50% of their customer's usage (at the time of enrollment)
- Program enrollment is first-come/first-served basis and otherwise placed on a waiting list
- Participants' solar block subscription charge is the sum of a Solar Block Cost ($/kWh) basis plus a Services and Access Charge ("S&A charge"). The S&A charge is proposed to be the same across both programs.
- The participant's share of the solar resource energy resource production is subtracted from the metered energy, which is then billed under the participant's standard rate schedule.

Q: How will the Company finance the 10 MWac project?

A: As discussed earlier, the 10 MWac project consists of 5 MWac for Schedule SSP and 5MWac for required solar under 393.1665 RSMo., with 1 MWac of the 5 MWac 393.1665 RSMo. portion being proposed for the low-income pilot. The entirety of the 10MWac project will be financed through a long-term utility financing structure, which consists of approximately 50 percent debt financing and 50 percent equity financing. During construction, the site will be financed through the Company's short-term borrowing mechanism. After in-service, the financing will be changed to long-term financing and incorporated into the long-term capital structure.

Q: How was the levelized cost of energy determined for the 10 MWac project?

A: The Company evaluated 15 feasible sites in Missouri based on location, hosting capacity (interconnection status) and site control. The Company developed a revenue requirements model to determine the projected levelized cost of energy ("LCOE") for

Schedule SSP program participants. Levelized cost assumptions for the modeling analysis included a series of inputs that included both solar array technical specifics and financial assumptions.

Solar Array - Technical	Solar Array - Financial	Financing
• capacity (MWac) • installed costs of capacity • net capacity factor • annual degradation • construction start date • in service date • useful life	• capital investment • O&M • insurance • property tax • program administration • grid expense	• inflation • common equity • debt percentages • interest • weighted average cost of capital after tax • tax rate • investment tax credit amount and percentage • tax and project tax depreciable basis percentage and amount

The levelized costs were determined by calculating the levelized revenue requirement divided by the levelized sales volume (MWh). Levelized revenue requirements were determined by taking the sum of the discount factor over the 25-year useful life of the array by the discounted revenue requirements. The levelized sales volume was calculated over the 25-year useful life multiplying the projected annual generation (kWh) by the annual discount factor.

Based on current total projected costs associated with engineering design, construction, build, interconnection and site prep, the Company estimates an LCOE of $0.1308 per kWh. This consists of a fixed charge of $0.0908 per kWh and a services and access charge of $0.040 per kWh[24]. The Company anticipates firm final pricing next Spring once Procurement and Construction planning activities are complete for the 10MWac array.

The LCOE is, by definition, the same for Schedule SSP program participants, as well as Schedule LIS program participants, and for MO Metro and MO West. The LCOE results in a single figure, the Solar Block Cost, which is representative of the one fixed rate that generates revenues from the sale of the solar energy equivalent to the revenue requirements on a present value basis using Evergy's after-tax weighted average cost of capital. Everything else being equal, varying the Solar Charge between the territories above or below the LCOE would create a cross subsidy.

Q: Is Evergy proposing any cross subsidy between participating low-income and non-low-income customers?

A. No, Evergy has designed the program to prevent cross-subsidization. It was important this program address the cost barrier to entry for low-income customers. With this in mind, Evergy devised the low-income solar block cost such that (1) the cost would be lower or approximately equal (depending on jurisdiction) than the average residential retail rate and (2) the resulting levelized cost of the Solar Block Subscription Charge, or the fixed rate at which revenue requirements are met over the book life of the solar

[24] The solar subscription tariff provides for the following: *The Services and Access charge will be adjusted when rates are reset in future rate cases by the average percentage change to volumetric rates in those future rate cases.* Therefore, the S&A is proposed to be changed from $0.0038 per kWh to $0.004 per kWh in this rate case filing.

asset from participating low-income customers, is equal to the LCOE of $0.1308 per kWh. This can be accomplished by escalating the solar block cost at a rate percentage not-to-exceed average retail rates over the remaining useful life of the array at any point in time through 2048 with the goal of no cross-subsidization. Evergy proposes to continue to evaluate this offer relative to its retail rates over the life of the asset in each future rate case. The Solar Block Subscription Charge for the low-income project is proposed to be $0.1160 per kWh (MO Metro) and $0.1092 per kWh (MO West). This includes a Solar Block cost of $0.0760 per kWh (MO Metro) and $0.0673 per kWh (MO West) and an S&A charge of $0.040 per kWh (same for each jurisdiction).

Q: How does the Company propose costs allocation would be handled for a possible LI Solar Subscription Pilot Program?

A. Within its Certificate of Public Convenience and Necessity testimony, Evergy has proposed that the ownership structure of the 10 MWac to be based on the weighted average of each jurisdiction's percentage share of Schedule SSP (including Evergy Kansas jurisdictions) and percentage share of the 10 MWac related to meeting the SB564-required solar (50% allocated to MO Metro and 50% to MO West). These allocations result in an ownership split of 66% to Evergy Metro and 34% to Evergy MO West. So as not to disturb the ownership split, Evergy is proposing to maintain an equal customer share allocation of the 1 MWac array between MO Metro and MO West, or 1000 solar blocks per jurisdiction.

Q: What is the proposed implementation date for this program?

A: The full 10 MWac solar array is expected to be in-service in 2022. Therefore, if this program is approved by the MPSC, Evergy could move forward quickly with offering the program to its customers following development of education, marketing and

concierge approach. Evergy proposes that this rate be implemented alongside the other MPSC approved rates on the effective date ordered by the Commission following approval. Evergy is not requesting additional time to offer this rate to its customers.

ii. Residential Battery Energy Storage Pilot ("RBES") Program

Q: What is the Residential Battery Energy Storage ("RBES") Pilot Program?

A: The RBESP Pilot Program will evaluate the role of residential battery energy storage systems in producing customer savings and providing benefits to Evergy's electrical system. The pilot will consist of the installation of approximately 50 battery energy storage systems at residential sites across Evergy's Missouri jurisdictions with the goal of an equitable customer participation in the MO Metro and MO West service territories. The battery sizes targeted have a capacity of approximately 4.5 kW or 6 kW and 19.4 kWh each. Evergy will evaluate battery sizes and select options that will closely align with the participant's load.

Q: How does this pilot tie back to the Company's IRP?

A. This pilot builds on Evergy's integrated distribution planning discussion shared in its Integrated Resource Plan recently filed in Case Docket Nos. EO-2021-0035 and EO-2021-0036. Volume 8, Section H[25] more fully describes Evergy's study program with Sunverge, a provider of "intelligent energy storage systems" which combines behind-the-meter ("BTM") energy storage with advanced control capabilities through their energy management system. Evergy began working with Sunverge to explore benefits of combining BTM storage with distributed energy resources ("DER").

Evergy outlines the project with Sunverge in three phases:

[25] Triennial IRP, Volume 8. MO West: Pages 32-38; MO Metro: Pages 32-37.

Phase 1: Lab Testing. Install two Sunverge systems to test and evaluate the Sunverge system's functionality and operation under various grid conditions

Phase 2: Field Trial. Install 4-6 units at customer locations, deploy the required field and local communications network, and implement integrations between Sunverge and the Evergy DERMS and Advanced Distribution Management ("ADMX").

Phase 3: BTM Storage Pilot Program. Based on the knowledge gained during the successful execution of Phases 1 and 2, Evergy may design and seek regulatory approval for a BTM Storage Pilot Program.

The proposed RBES program is the third phase in executing the project.

Q: What are the objectives of the RBES program?

A: As a pilot, the RBES program will advance Evergy's operational knowledge of how battery energy storage systems can be utilized to achieve customer savings and grid benefits. The battery energy storage system can be used to "shift" energy use from periods of high prices to periods of low prices, for example, creating opportunities for customers on a TOU rate program to achieve retail savings without reducing overall energy consumption. More specifically, the battery energy storage system includes a "smart" home energy control system that can be programmed with Evergy's TOU rate schedules. The battery will be programmed to charge during lower "off-peak" rate periods, and to discharge the stored energy during higher "peak" rate periods, supplementing home energy consumption. In addition to having the ability to optimize customer's retail consumption patterns, battery energy storage systems can also provide operational benefits for the utility as well as deliver customer benefits.

The pilot is also consistent with the objectives of Senate Bill 564, (Section 393.1610 RSMo.) which provides for the utility to implement pilots such as this and allows for Commission approval. Section 393.1610 states,

> *The commission may approve investments by an electrical corporation in small scale or pilot innovative technology projects, including but not limited to renewable generation, micro grids, or energy storage, if the small scale or pilot project is designed to advance the electrical corporation's operational knowledge of deploying such technologies, including to gain operating efficiencies that result in customer savings and benefits as the technology is scaled across the grid or network.*

Q: What are the benefits of residential battery energy storage systems?

A. Battery energy storage systems can be used to reduce the demand on Evergy's electrical grid during peak periods. One of the conditions for participation by customers in the pilot, for example, is to allow Evergy to utilize a portion of the stored energy in the battery to support demand-side management programs, such as reductions in peak power purchases and managing localized distribution system constraints. Batteries have very fast response times and can also be used to help maintain distribution system power quality issues and support grid reliability. The pilot will also provide opportunities to explore customer interest in "resilience," since batteries can be used as a source of back-up power during short-term power outages.

Operational benefits include:

- Ability to use battery energy storage resources for peak demand reduction
- Ability to use battery energy storage to support self-consumption of renewable energy which can minimize distribution grid impacts and increase hosting capacity of the existing distribution systems

- Improvement in utility grid operations through the use of battery energy resources to help maintain power quality and reliability of the distribution grid and to address localized distribution constraints

Customer benefits include:

- Opportunities to create retail savings for customers on TOU rates
- Ability to integrate storage technology platform with renewable energy or smart technologies to optimize home energy use
- Potential to provide a source of back-up power for customers during grid outages

The pilot will also provide opportunities to further explore customer behaviors and acceptance of battery energy storage technology.

Q. What are other details of the pilot program design?

A: The benefits of energy storage to customers will be influenced by several factors, including the customer's energy use profile, customer rate program, presence of customer-owned smart technology, and customer behavior and preferences. To evaluate these benefits across a range of factors, Evergy would seek program participants which have a combination of the following characteristics:

- **Customers enrolled in TOU rates** - A battery storage device for a customer enrolled in TOU rates would typically be charged during the off-peak period, when energy prices are lower, and discharged during on-peak periods when energy prices are higher. The energy produced by the battery when discharging would be used to supplement household consumption, reducing the amount of retail electricity purchased during peak pricing periods.

- **Customers seeking to integrate storage with solar rooftop photovoltaic (PV) systems** - Installation of a battery storage system would allow some of the solar energy to be diverted to charge the battery, when solar generation exceeds household consumption. By minimizing power injection to the grid or reducing peak energy draw, the customer's load profile would be flattened, which could reduce the impacts of distributed generation on the existing distribution system.
- **Customers which own electric vehicles or other smart home devices** – Installation of battery storage system may shed insights on current customer perceptions of the need/value of resiliency. For example, storage might be desirable for customers who are interested in having access to a back-up power source for critical loads during short-term outages and EV charging. In addition, Evergy will also seek to identify distribution feeders on which storage systems can be utilized to improve distribution system reliability.

Q. Who will own the battery energy storage systems? What is the cost to the participating customer?

A: Customers will take service under the Schedule RBES. Evergy will select a battery storage technology that includes a home energy management control system with cloud support. Evergy will own, install, operate and maintain the battery storage systems at the customer site through 2025. At the end of 2025, the customer will be provided with the option to (1) transfer ownership of the battery to the customer, however under the condition that the customer provides Evergy with access to dispatch the battery for the battery's remaining useful life[26]; (2) purchase the battery at the depreciated value with

[26] Depreciable life is estimated to be 10 years.

no future obligation to Evergy under this pilot; or (3) request Evergy to remove the battery, at which time Evergy will consider re-deployment to another customer site for the remaining useful life of the battery.

The cost to the customer will be a nominal $10 monthly service fee. This cost provides for some "skin in the game" for the participating customer and allows Evergy to offset costs to administer the pilot and provide on-going support for participation.

Q: What is the budget for this program?

A: Costs include capital and O&M. The capital budget for this program is estimated to be $2.4M for the deployment of the 50 batteries and costs between MO Metro and MO West will be ultimately determined following recruitment and installation of the batteries. This $2.4M figure will further be firmed up after vendor selection. O&M costs include EM&V and administration and marketing. Evergy estimates an EM&V cost of $100,000. I further discuss administration and marketing costs for all programs later in my testimony.

Q: What is the proposed implementation date for this program?

A: Evergy proposes that this rate be implemented alongside the other MPSC approved rates on the effective date ordered by the Commission following approval. Evergy is not requesting additional time to offer this rate to its customers. Once the program is approved by the MPSC, Evergy will finalize its selection of the vendor and will begin recruiting customers to this program. The Company anticipates a 6-month period for customer recruitment and installation of batteries (through June 2023).

Q: How does Evergy propose the RBES Program be evaluated?

A. Evergy proposes that the pilot program be evaluated by a third-party, independent program evaluator. Evergy proposes to work closely with stakeholders to define a process and impact analysis of the program. Given the implementation timeline described above, Evergy proposes to collect operational data from the battery systems over a two-year period. This timeframe will allow sufficient time to collect, measure and analyze operational data and conduct a post measurement and verification. As part of the evaluation, it will be important that Evergy also evaluate the customer savings and utility benefits of the pilot.

Such analyses to drive findings could include the following[27], however Evergy is open to understanding Commission and stakeholder objectives as well:

- Communication and control systems required to communicate with and manage BTM DER
- Ability of the technology to optimize the operation of storage and customer loads in conjunction with TOU and/or demand rate plans
- Degree to which BTM storage can mitigate the potential grid impacts of behind the meter distributed generation ("DG")
- Potential impact of BTM storage for capacity management

Evergy proposes to submit a final EMV report to stakeholders and the MPSC by the end of 2025. If Evergy and the MPSC will evaluate the success of the pilot program and whether or not to seek to move it to a full-scale offer in a future rate case proceeding.

[27] Sunverge project goals from IRP, Volume 8

iii. Green Pricing Renewables Energy Credit ("REC") Program

Q: What is the Green Pricing REC Program?

A: Customers increasingly want their utilities to provide renewable solutions for their homes and businesses. This demand has led many utilities to offer "green pricing" programs to meet customer needs. The National Renewable Energy Laboratory ("NREL") defines green pricing as an optional program where utility customers "procure green power on a month-to-month basis through an added fee on their utility bill." Green power is power provided by renewable sources such as wind and solar and green pricing program provide access to renewable energy for customers who may not have the upfront capital to invest in their own renewable generation, like solar panels on their home.

Evergy proposes the Green Pricing REC Program ("Schedule GPR") as a simplified subscription solution for Evergy residential and business customers who want to offset some or all their energy consumption utilizing locally sourced RECs[28] to meet their sustainability needs. Evergy customers already receive a percentage of their energy from renewable sources; however, this program provides for customers to choose up to 100 percent of their energy be provided from renewable resources.

Q: Doesn't Evergy offer other sustainability programs for its customers?

A: Yes, it does. Evergy offers the Solar Subscription Pilot Rider and Renewables Energy Rider programs. These programs are tied back to a specific generating resource and the customer pays for that cost of that resource. The Green Pricing REC Program allows

[28] Each REC = 1000 kWh

the customer (both residential and business) to claim the benefits of renewable electricity without actually buying it.

Q: What are the benefits of the Green Pricing REC Program?

A: Evergy designed its Green Pricing REC Program using best practices from other utilities. These best practices include:

- Voluntary, month-to-month, and without a contract or cancellation fees
- No upfront costs and the pricing structure is based on the additional cost of green power per kWh
- Provides an affordable rate to encourage participation
- Leverages existing resources, structures, and programs for tasks like marketing
- Emphasizes benefits and early renewable adopters as part of the marketing campaign
- Relies on contact centers, physical bill inserts, online advertising, and public outreach to enroll and market the program to customers

Q: What comprises the Renewable Energy Charge shown in Schedule GPR?

A. The Renewable Energy Charge will consist of the renewable energy credit ("REC") and a program administrative charge. For 2023, the price will be $0.0046 per kWh, which is based off of 2023 forward pricing from Amerex Brokers[29]. Evergy proposes that this figure be updated annually to align with forecasted market pricing based upon the current and expected market prices for RECs. A program administrative fee of $0.0001 per kWh will be also applied to recover the cost of retirement of the RECs and program administration. The sum of the REC price and the program administrative charge results in a total Renewable Energy Charge of $0.0047 per kWh. Assuming a typical residential customer uses 1000 kWh and they choose to offset 100% of their usage, the customer would pay approximately $4.70 additional per month.

[29] November 23, 2021; Green-E/Voluntary Mid Pricing.

Q. When and how will annual REC pricing changes occur?

A: Due to the current volatility in pricing of the REC market, Evergy does not propose a static Renewable Energy Charge. Evergy will review the pricing of RECs annually based upon the data including current and expected market prices for the following year from the North American REC markets[30] and submit a tariff in October, requesting 30-day approval with an effective date of January 1 for that following year.

Q. How will the Renewable Energy Charge change be communicated with participating customers?

A: Renewable Energy Charge updates will be shared with participants following MPSC approval.

Q. How will the Renewable Energy Charge appear on customer bills?

A: A separate line item will reflect customer's selected kWh offset multiplied by the Renewable Energy Charge, and resulting total charge for the billing period.

Q. How will RECs be sourced for this program?

A: The Company will utilize company-owned REC's from Evergy resources, or RECs acquired through virtual Power Purchase Agreements or other non-owned Evergy resources. It is the Company's intent to use company-owned RECs that are in excess to meet Company needs for compliance first before purchasing on the market.

[30]Evergy will specifically seek to use a consistent data source, such as the Amerex Green-E/Voluntary pricing.

Q: How will the revenues and costs associated with the RECs used for this program be accounted for and reported with respect to the FAC and RESRAM rider mechanisms?

A: Both the revenues and associated costs to administer this program will be segregated by separate account codes or other chartfield identifiers to ensure that the activity is easily identified and excluded for recovery through both the FAC and the RESRAM.

Q: How is this program used with the Subscription Pricing Pilot Program?

A: As discussed earlier, the Green Pricing Program will be offered as an optional add-on to the Subscription Pricing Pilot offer, or referred to as the Clean Energy add-on. When customers accept the Subscription Pricing offer with the Clean Energy add-on offer, their fixed bill will include an adder based on 100% of their average expected monthly usage multiplied by the total Renewable Energy Charge.

Q: What is the proposed implementation date for this program?

A: Evergy proposes that this program be implemented alongside the other MPSC approved rates on the effective date ordered by the Commission following approval. Evergy is not requesting additional time to offer this rate to its customers.

d. Budget and Cost Recovery for Rate Choice Portfolio

Q: In the 2018 Rate Design S&A, Evergy was authorized deferral for recovery of prudently incurred program costs associated with the existing 3-period TOU rate. How has Evergy contemplated recovery of program costs for the rates and programs discussed thus far in your testimony?

A. It is important to continue to market educate our customers regarding the TOU rate for increased enrollment. There has been significant momentum with our customers to

understand rate choice, the TOU rate option, interaction with the rate comparison tool, and increased understanding of overall energy use and impact to grid. Since Evergy is proposing the expansion of the TOU choice portfolio, innovative payment plans and renewable or sustainable options for our customers, Evergy seeks to request similar treatment of recovery of prudently incurred program costs for its rate portfolio as it did with the single TOU rate offer.

Throughout introduction of each rate/program in my testimony, I have offered whether or not the rate/program is a pilot, requires an EM&V, estimated capital costs and requested timing to offer the rates/program to our customers. Some of the rates/programs will require more implementation than others depending on the product development complexity, which includes, for example, implementation vendor, development of digital education, inclusion with other programs, and concierge development, and thoughtful and intentional customer education and marketing development. Evergy has a strong history of developing and implementing successful programs and rates, and what it has presented in this case for choice expansion is no different. These rates/programs will require additional program costs and Evergy understands the importance of incurring these costs prudently such that it can request recovery.

Below is a summary of each rate/program, implementation date and budget for EM&V presented thus far.

Program	Tariff	New/ Existing	Pilot	Implementation/ Offer Date	Estimated EMV Budget	Admin/Marketing /Education Budget
Residential Time of Use	RTOU	Existing	NA	Immediate	NA	***
Residential Time of Use – Two Period	RTOU-2	New	NA	Immediate	NA	***
Residential High Differential Time of Use	RTOU-3	New	NA	On or after April 1, 2023	NA	***
Separately Metered EV Time of Use	RTOU-EV	New	NA	On or after April 1, 2023	NA	***
Subscription Pricing Pilot	RSP		Pilot	On or after October 1, 2023	$200k Data collected for min 1 year following launch	***
Advance Easy Pay Pilot Program	AEP	New	Pilot	On or after April 1, 2023	$50k Data collected for 24 months following launch	***
Low-Income Solar Subscription Pilot Rider	LCS	New	Pilot	Immediate	None proposed	***
Residential Battery Energy Storage Pilot	RBES	New	Pilot	Immediate	$100k Data collected for 24 months following launch with report submitted to MPSC by 12/31/2025	***
Green Pricing Renewables Energy Credit	GPR	New	NA	Immediate	NA	***
Nine Programs Above						Not-to-exceed net customer acquisition cost of $150

Evergy proposes that it be authorized to defer for recovery prudently incurred program costs for the nine programs described above, including:

- EM&V costs for pilots. Costs shown above are estimated and will be firmed up once programs are approved and a vendor is selected. If parties deem that additional EM&V is required for approval of other rates/programs, Evergy also requests deferral and recovery of these prudently incurred costs.

- Marketing, education and administration costs associated with its expanded rate choice portfolio. In the next rate case, Evergy requests authorization to recover prudently incurred program costs at a not-to-exceed net customer acquisition cost of $150 per customer.

Q: Please further explain a not-to-exceed net customer acquisition cost of $150 per customer.

A: The not-to-exceed **net** customer acquisition cost of $150 per customer provides a performance metric for Evergy to adhere. Presenting a net acquisition cost for recovery can be delicate – there is a greater initial cost to be considered as campaigns are developed and awareness grows; it incorporates enrollment churn - in other words, it will be important for Evergy to develop its programs and education and marketing such that customers are satisfied and stay enrolled; and it must account for any unknown costs that aren't contemplated. The $150 per customer is approximately the marketing and education acquisition cost for a TOU customer based on Evergy's experience to date and sets the basis for this request.

IV. BUSINESS TRANSPORTATION ELECTRIFICATION PILOT INITIATIVES

Q: Please explain the changes that you are recommending in this rate case as it pertains to business electrification programs recently proposed in Docket Nos. ET-2021-0151 and -0269.

A: During its agenda session on December 22, 2021, the Commission advised that Evergy readdress its Business EV Charging Service Rate and Commercial EV Charger Rebate Program. In addition, as a result of the Commission's guidance, I will present a revised Customer Education and Program Administration budget to support the revised Commercial EV Charger Rebate Program and the Business EV Charging Service Rate.

Q: What changes has the Company made with respect to the Business EV Charging Service ("BEVCS") Rate?

A: The BEVCS rate was originally proposed to provide electric service for the exclusive use of charging electric vehicles by commercial customers. Details for this rate are proposed by Company witness Bradley Lutz.

Q: What are Evergy's objectives for the BEVCS rate?

A: The BEVCS rate will encourage customers to shift EV charging to off-peak times while better aligning the cost of charging EVs 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.

Q: What changes has the Company made with respect to the proposed Commercial EV Charger Rebate Program ("CRP")?

A: The overall budget of the CRP has been reduced by approximately 30% ($10.0M→$6.9M). This reduction is the result of the following changes:

- Elimination of the Highway Corridor use case
- Elimination of the Public Level 2 use case
- Reduction of the budget for Workplace/Fleet Level 2 installations
- Reduction of the budget for Fleet DCFC installations
- Reduction of the budget for Public DCFC stations (non-highway corridor)

Also, in recognition of Staff's concerns expressed in Docket Nos. ET-2021-0151 and -0269, Evergy has limited eligibility for DCFC rebates to 150kW, either in stand-alone or paired operation.

Q: What are Evergy's objectives for the CRP?

A: The CRP will reduce the costs associated with EV charging installations at a variety of locations (public, workplace, fleet, and multi-family) by providing a rebate toward the make-ready infrastructure and equipment costs.

The program design incentivizes commercial charger installations by private station owners, provides Evergy with influence over the location and technical characteristics of these non-utility charging stations, and enables Evergy to collect and analyze charger utilization data for various use cases to better understand where EV charging is occurring on the system. Evergy proposed the CRP for third-party EV charging station installations at commercial locations across the Evergy service territory to support the growing EV market by promoting 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 including workplaces, fleet parking sites, public destinations, and multi-family dwellings.

Q: What are the key features of the proposed CRP?

A: Under Evergy's Evergy proposed CRP, rebates are paid to third-party station providers to off-set some of the customer-side infrastructure and EV charger equipment costs. Rebate amounts are $2,500 per Level 2 port and/or $20,000 per DCFC port (150kW maximum, stand-alone or in paired operation). Charging sites are subject to maximums that vary by site type between $25,000 to $65,000.

Customers eligible for the CRP include 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 CRP supports investment in charging infrastructure by third parties for a range of EV use cases and locations. This program will 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 Level 2 or DCFC is installed.

Q: How was the initial and revised CRP budget established?

A: Evergy sized the CRP budget to align with the projected need for public, workplace, and fleet charging infrastructure according to the following methodology:

1. **Determine Current State -** Using information from the Department of Energy's Alternative Fuels Data Center, Evergy estimated the current quantity of charging ports serving various use cases, inclusive of the Clean Charge Network (e.g. Workplace/Fleet Level 2, Public DCFC, etc.).

2. **Project Future Need -** Using EVI-Pro Lite, a tool developed by the National Renewable Energy Laboratory to estimate the infrastructure requirements associated with a given EV population, Evergy projected the number of charging ports required to support EPRI's medium EV adoption scenario as of year-end 2025 (11,353 – MO Metro; 5,959 – MO West). Since the outputs of EVI-Pro Lite are limited to public and workplace charging, Evergy also considered the portion of the projected EV population

that would rely on charging at multifamily buildings as well as the growing need for fleet charging infrastructure.

3. **Establish Program Budget -** Evergy's budgets for each use case are informed by the gap between the current number of ports and the projected future need, looking primarily at medium EV adoption scenarios in 2025.

The following tables summarize the above process. Text strikeouts indicate values that have changed from Evergy's 2021 Transportation Electrification case, ET-2021-0151 and -0269 as a result of MPSC feedback.

MO METRO	**Step 1 - Actual Number of Ports**	**Step 2 – Incremental Need for Ports**		**Step 3 - Program Budget ($1,000s)**	
	2020	**2025**	**2030**	**Ports**	**$K**
Multifamily Level 2	96	18	229	200	$500
Workplace/Fleet L2	216	542	1862	540 ~~590~~	$1350 ~~$1475~~
Fleet DCFC				60 ~~120~~	$1200 ~~$2400~~
Public L2	512	62	913	0 ~~50~~	$0 ~~$125~~
Non-Highway DCFC (ex-Tesla)	8	123	368	60 ~~100~~	$1200 ~~$2000~~
TOTALS	**832**	**745**	**3372**	**860 ~~1060~~**	**$4250** ~~$6500~~**

MO WEST	Step 1 - Actual Number of Ports	Step 2 – Incremental Need for Ports		Step 3 - Program Budget ($1,000s)	
	2020	2025	2030	Ports	$K
Multifamily Level 2	24	36	183	200	$500
Workplace/Fleet L2	63	356	1342	300	$750
Fleet DCFC				40 ~~60~~	$800 ~~$1200~~
Public L2	416	(68)	582	0 ~~20~~	$0 ~~$50~~
Non-Highway DCFC (ex-Tesla)	10	68	262	30 ~~50~~	$600 ~~$1000~~
TOTALS	**513**	**392**	**2369**	**570 ~~630~~**	**$2650** ~~$3500~~**

As one can see, Evergy has applied a rational and future-looking approach based on near-term projections of EV populations and the associated charging infrastructure needs provided by EPRI and the DOE, respectively. Beyond this methodology, from a philosophical perspective it is important to note that Evergy's program design requires site hosts to bear meaningful upfront and ongoing costs to maintain the networked charging stations required by the program. (See Schedule KHW-2). Consequently, developers and site hosts will be motivated to optimize site location and configuration relative to use case. In other words, the modesty of Evergy's rebate amounts and line extension allowances relative to the potential capital and ongoing costs of charging stations lower the probability of free ridership and make the CRP inherently self-limiting.

Q: Will the charging stations generated by the CRP necessitate distribution grid investments?

A: Yes. Evergy estimates that approximately $5.2M of distribution infrastructure investment will be required based on historical line extension costs. These costs will be shared between the charging station developers and Evergy customers consistent with existing policies. More specifically, the charging station developer will be eligible for a standard line extension allowance of $4,500 per Level 2 port, and/or the greater of $4,500 per port or $27,000 per site for DCFC installations.

If it assumed that line extension costs for Level 2 ports are covered in total by the standard line extension and that the 190 DCFC ports incentivized by the CRP are installed in pairs at 95 unique sites, Evergy estimates that charging station developers would be responsible for approximately $2.2M of the estimated $5.2M total.

Q: What changes has the Company made with respect to the Customer Education and Program Administration budget to support the CRP?

A. The Company requests a revised customer education and program administration budget of $1.03 million, which is 15% of the overall CRP budget and inclusive of expenses associated with the Business EV Charging Service Rate. Evergy also has revisited its customer education and outreach plan and has provided greater detail as presented in Schedule KHW-3.

Q: Please further discuss Schedule KHW-3.

A. First, I would like to reiterate the importance of this budget. Customer education, outreach, and support is intended to encourage EV adoption and participation in Evergy's 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. In addition, Evergy will offer technical assistance to help customers navigate EV-related decisions and to maximize the benefits of EV adoption.

The Customer Education and Program Administration budget to support the CRP and the Business EV Charging Service Rate is set at 15% of the CRP total budget. This level is consistent with what Evergy proposed in its TE filing. Evergy believes that this continues to be an acceptable level to base customer education and program administration budgets. Offering a robust education and marketing program is foundational to ensuring that Evergy maximize the cost effectiveness of the CRP and customers enrolling in the Business EV Charging Service Rate.

Q: Please elaborate on the cost effectiveness of EV adoption. How has Evergy estimated the cost effectiveness of EV adoption?

A: Evergy commissioned an industry consultant, ICF, to quantify the benefits of increased EV adoption in Evergy's Missouri service territory. ICF's methodology included several conservative assumptions, including the assumption that 100 percent of 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 CRP and Business EV Charging Service Rate are designed to incentivize that very outcome. In addition, Evergy's line extension allowance for EV charging infrastructure is designed to cover a typical installation and may not always cover the entire upfront cost associated with charging station installation and would then require a customer contribution.

The cost effectiveness analysis concluded that all Evergy customers benefit from increased EV adoption, not just EV drivers. Specifically, ICF estimated a net present value (NPV) of approximately $42.5 million in benefits to Missouri Metro 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 $1,112 per EV adopted in the Missouri Metro service territory. Applying the same assumptions, results for Missouri West customers are $22.6 million NPV, or $900 per EV adopted. The analyses also show that increased EV adoption can yield even greater net societal benefits while also benefiting EV drivers.

For more details, see Schedule KHW-4.

Q: Should the Commission be concerned that Evergy will oversaturate its Missouri service territory with charging stations?

A: No. The proposed budget herein is based on the projected need for commercial charging infrastructure given the near-term EV adoption forecast. Additionally, recipients bear significant upfront and ongoing costs even after receiving rebates and line extension allowances (if applicable), which are certain to influence whether and where new charging stations are pursued.

Q: How should the Commission think about the proposed CRP vis-à-vis the Infrastructure Investment and Jobs Act ("IIJA")?

A: The CRP and IIJA should be viewed as complementary – not duplicative.

The IIJA's *National EV Formula Program* (Division J) is primarily designed to create an ecosystem of charging stations along designated highway corridors. In light

of this funding, which is guaranteed at the state level and far more generous than the CRP, Evergy has elected to exclude the highway corridor use case.

In addition to Division J, the IIJA's *Federal Grants for Charging and Fueling Infrastructure* (Section 11401) provides grant funding for publicly accessible "clean vehicle" infrastructure along both highway corridors and other publicly accessible locations. Notably, the grants provided by this program are also available for non-electric technologies (e.g. propane, hydrogen). Also, Section 11401 does not include a guaranteed level of funding at the state level. In light of these uncertainties, Evergy's CRP will incentivize charging station infrastructure either as a stand-alone incentive when grant funding is unavailable or in a cost-sharing capacity for grant recipients.

Q: How does Evergy propose cost recovery of the CRP and the education/administrative budget?

A. Evergy requests that the Commission authorize the Company to use a regulatory asset tracking mechanism to track and defer the pilot program costs which include rebate incentives and the associated customer education and administrative costs for the CRP program. This regulatory asset tracking mechanism will provide the Company the ability to track and defer program costs to be recovered in the Company's cost of service in future rate cases. Evergy will not be able to recover the costs of the CRP 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 the ability to track and defer program costs for recovery of prudently incurred CRP and education/administrative costs in future rate cases through expense amortization over a period of five years, which is equivalent to the length of the proposed pilot programs. Evergy will not seek rate base treatment of these costs that

will be included in the regulatory asset tracking mechanism for the pilot programs. Evergy will provide the capital to fund the CRP and education/administrative costs 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.

The Commission has previously found that such a proposal is in the public interest to authorize a deferral accounting mechanism or regulatory asset tracker mechanism. Such a proposal aligns the interests of the Company and its customers because the Company has no incentive to pay program rebates to charging station owners unless the resulting charging stations will create more widespread EV adoption and, in turn, produce incremental electricity sales.

Q: Does Evergy request any variances from specific sections of Missouri's Prohibited Promotional Practices rule to implement the CRP?

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

Under the proposed pilot programs, Evergy will offer incentives for the installation and use of equipment. Therefore, without a variance from the rule, Evergy would be in violation of 4 CSR 240-14.020(1)(B) and (1)(D). Additionally, the Commission noted in Case No. ET-2018-0132 that under a strict reading of the rule, these incentives may provide "free, or less than cost or value, wiring, piping, appliances or equipment" in violation of 4 CSR 240-14.020(1)(E).

Good cause exists to grant Evergy these variance requests because the CRP will (a) provide benefits to both Evergy and its customers, both from the standpoint of lower

overall rates, more efficient utilization of the electric grid, and reduced emissions in the areas where those customers work and live; and (b) not negatively affecting either the Company's customers who are not participants in the program or regulated alternative fuel suppliers competing in the Company's service territory.

Evergy requests a variance from subsections 4 CSR 4240-14.020(1)(B), (1)(D), and (1)(E), which provide:

> (1) No public utility shall offer or grant any of the following promotional practices for the purposes of inducing any person to select and use the service or use additional service of the utility:
>
> (B) The furnishing of consideration to any architect, builder, engineer, subdivider, developer or other person for work done or to be done on property not owned or otherwise possessed by the utility or its affiliate, except for studies to determine comparative capital costs and expenses to show the desirability or feasibility of selecting one (1) form of energy over another…
>
> (D) The furnishing of consideration to any dealer, architect, building, engineer, subdivider, developer or other person for the sale, installation or use of appliances or equipment…
>
> (E) The provision of free, or less than cost value, wiring, piping, appliances or equipment to any other person…

V. INCOME-ELIGIBLE WEATHERIZATION ("IEW") PROGRAM

Q: What change is Evergy proposing for its IEW program?

A: Evergy is seeking approval to transfer approximately $1 million of unspent IEW program funds ("roll-over funds" or "funds") to its Dollar-Aide program. The specific dollar amount is yet to be known, as this will depend on IEW programmatic activity in 2022 and will include unspent funds that have been accumulating since our last rate case (May 2018) through this current rate case completion. These funds will remain available through the Dollar-Aide program until depleted.

Q: Is this a one-time request for use of unspent IEW funds to be applied to Dollar-Aide?

A: No, Evergy requests approval to establish a process to annually roll-over excess funds, allowing annual unspent IEW funds to be applied to Dollar-Aide to avoid potential similar situations of roll-over budget accumulations. Both the Dollar-Aide and IEW Evergy programs are offered on a calendar year basis and the transition of funds, if needed, would be timely and aligned.

Q: What is Dollar-Aide?

A: During times of need, Dollar-Aide helps eligible individuals and families by assisting with their utility bills to avoid loss of service. The program has helped thousands of families in our community. To make all tax-deductible donations go farther, Evergy matches every dollar with an additional 50-cent energy credit donation. These donated funds are sent to the Mid-America Assistance Coalition, which administers the funds to local agencies. The local agencies work with those in need of funding for their utility bills.

Q: Will Evergy match the IEW funds provided to Dollar-Aide?

No, the Dollar-Aide match funds come directly from our charitable budget and the intent of the match is for customer and employee contributions made directly to Dollar-Aide. The Company will continue to match every dollar donated by customers to Dollar-Aide with an additional 50-cent energy credit donation.

Q: Why is Evergy proposing this change to the IEW program?

A: Evergy's preference is to invest the roll-over funds allocated to IEW back into the income-eligible communities rather than being absorbed into the broader customer rate base through this rate case. In addition, while Evergy is optimistic that the recent IEW

tariff filing change request[31] that was recently approved will help the local agencies qualify and positively impact more customers – therefore spending more of the funding provided. We are also aware of other potential IEW Federal or state funding sources coming down the pike that may impact the program. No one is certain of the level of these impacts. Given these uncertainties we would like to be proactive in getting this go-forward, annual process of funds allocation to Dollar-Aide in place.

Q: Why doesn't Evergy just reduce the IEW budget if it is having issues spending the dollars?

A: Evergy recognizes the need for additional support with our income-eligible customers to help with home operational expenses, specifically in areas where it can influence and positively impact a primary household expense, the electricity bill. While we have programs in place to assist with making bill payments, there are often home issues causing higher bills that stem from mechanical, structural, and end-use product inefficiencies and this is where IEW can and does assist. Instead of proposing a budget reduction it is Evergy's desire work to remove the fundamental barriers that limit budget spend. With the adjustments approved in Evergy's recent IEW tariff filing change request[32], Evergy can remove barriers to participation, such as customer turn-aways due to home structural repair needs, previous weatherization work, limiting income requirements, lack of agency staff/support, electric service terms, and energy usage minimum thresholds. With these adjustments in place, we are excited to see how this revamped program runs in 2022 and beyond. Evergy sees itself as a consistent

[31] *Approval of the Income-Eligible Weatherization Tariff and Automation of the Income-Eligible Weatherization Program*, Docket ET-2022-0145
[32] *Ibid.*

source of IEW program support for this type of customer opportunity when other funding sources may come and go with time.

Q: Why did Evergy not request this in its recent IEW tariff filing change request?

A: While this change is important to get incorporated into the program parameters to assign past unspent IEW funds, it is not as urgent in timing, given the winter months are when this programs' home upgrades offer tremendous customer value in bill reduction and comfort. Evergy prioritized the other tariff adjustments which are directly related to customer ability to participate, to positively impact a higher level of customers, and appreciated the quick approval turnaround.

Q: What is the implementation date for this proposed IEW program change?

A: Evergy proposes that this change be implemented alongside the other MPSC approved rates on the effective date ordered by the Commission following approval. Evergy is not requesting additional time to effect this change.

VI. MARKET BASED DEMAND RESPONSE ("MBDR") TARIFF CHANGES

Q: What changes is Evergy proposing to the MBDR tariff?

A: The existing MBDR tariff has not had any participation since it was approved in the Company's prior general rate case. Evergy is requesting to update the MBDR tariff to better facilitate participation and also address potential Southwest Power Pool ("SPP") market opportunities. The first change is to reduce the minimum kW load requirement from 1 MW to 100 kW per participant. The second change is to include the potential for participation in additional SPP market opportunities by adding the "real-time" wording in front of the "day-ahead" language in the tariff.

Q: How does the Company expect these changes to benefit the offering?

A: Since there has been minimal interest in the program to this point, the intent is to open up to a broader range of customers who might only be able to provide a lower kW amount (100 kW vs. 1000 kW) into the SPP market. Additionally, more sophisticated customers may be able to participate in the real-time market and therefore adding that as an option might entice some additional participation.

VII. CONCLUSION

Q: What concluding remarks do you have with respect to your testimony?

A. Evergy is excited to propose the programs and pilots contained within my testimony and to move its Rate Plan forward. The Rate Plan provides for innovative pilots and programs that provides choice to our customers, enables additional customer benefits from AMI infrastructure and data and provides for grid management. Evergy is open to working with stakeholders to better evaluate the pilots so that Evergy, stakeholders and the MPSC can understand the value of these programs. Additionally, customer research has continued to show that customers prefer choice, and our proposed portfolio seeks to accomplish this.

Q: Does this conclude your testimony?

A: Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro's Request for Authority to Implement A General Rate Increase for Electric Service	))))	Case No. ER-2022-0129

AFFIDAVIT OF KIMBERLY H. WINSLOW

STATE OF MISSOURI)
) ss
COUNTY OF JACKSON)

Kimberly H. Winslow, being first duly sworn on her oath, states:

1. My name is Kimberly H. Winslow. I work in Kansas City, Missouri, and I am employed by Evergy Metro, Inc. as Senior Director, Energy Solutions.

2. Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of Evergy Missouri Metro consisting of sixty-nine (69) pages, having been prepared in written form for introduction into evidence in the above-captioned dockets.

3. I have knowledge of the matters set forth therein. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded, including any attachments thereto, are true and accurate to the best of my knowledge, information and belief.

Kimberly H. Winslow

Subscribed and sworn before me this 7th day of January 2022.

Notary Public

My commission expires: 4/26/2025

ANTHONY R. WESTENKIRCHNER
NOTARY PUBLIC - NOTARY SEAL
STATE OF MISSOURI
MY COMMISSION EXPIRES APRIL 26, 2025
PLATTE COUNTY
COMMISSION #17279952

TABLE OF REQUESTED VARIANCES FOR
ADVANCE EASY PAY (AEP) PILOT PROGRAM AND
RESIDENTIAL SUBSCRIPTION PRICING (RSP) PILOT PROGRAM

20 CSR 4240-2.060(4) – Applications for Variances or Waivers

	Variance Requested[1,2]	Rationale[3]	Justification[4]
20 CSR 4240-13.020 **Billing and Payment Standards**	(1) A utility shall normally render a bill for each billing period to every residential customer in accordance with commission rules and its approved tariff.	AEP: No bills will be issued for a billing period because of daily access to actual usage and cost information. SP: Bills will be rendered according to the approved Residential Subscription Pricing Pilot tariff with appropriate waivers below.	AEP: Additional issuance of a periodic bill would be redundant and untimely, and would likely cause confusion. SP: The program is unique in the nature of the charge being agreed to by the customer for 12 months. The charge will change annually with notification to the customer prior. Therefore, there is no need for monthly actual information on a standard bill.
	(2) Each billing statement rendered by a utility shall be computed on the actual usage during the billing period except as follows:*... *Full text omitted to conserve space.	AEP: No billing statements will be issued for a billing period because of daily access to actual usage and cost information. For clarity, estimates for historical usage and forward expected usage will utilize the rules outlined in (2)(C) for estimation. SP: Customers will receive a monthly bill in accordance with their agreed upon monthly charge at the start of joining the program.	AEP: Additional issuance of a periodic bill would be redundant and untimely, and would likely cause confusion. Due to the nature of AEP, Company will need to estimate future usage. SP: As the program will be set up with an agreed upon monthly charge at the start, there is not a need to bill based on actual usage monthly. Customers will still have options available to find out their actual usage other than the actual bill.

	Variance Requested[1,2]	Rationale[3]	Justification[4]
20 CSR 4240-13.020 **Billing and Payment Standards (Con't)**	(6) A utility may bill its customers on a cyclical basis if the individual customer receives each billing on or about the same day of each billing period. If a utility changes a meter reading route or schedule which results in a change of nine (9) days or more of a billing cycle, notice shall be given to the affected customer at least fifteen (15) days prior to the date the customer receives a bill based on the new cycle.	AEP: Customer's billing periods will no longer be valid as they will receive access to their usage and cost information daily.	AEP: The nature of AEP is that there are no billing periods and therefore no changes to them except for when the customer returns to a standard rate.
	(7) A monthly-billed customer shall have at least twenty-one (21) days and a quarterly- billed customer shall have at least sixteen (16) days from the rendition of the bill to pay the utility charges, unless a customer has selected a preferred payment date in accordance with a utility's preferred payment date plan. - * *Full text omitted to conserve space.	AEP: Customers will no longer have billing periods or specific due dates when participating in AEP. The customer will be paying in advance for usage and not tied to minimum periods of billing or minimum periods to pay.	AEP: The program offers customers the opportunity to have all their usage and cost information available daily and will not require billing periods or payment periods based on the nature of pre-payment.
	(9) Every bill for residential utility service shall clearly state— * *Full text omitted to conserve space.	AEP: Payment will be accomplished before usage occurs, and no bill will be rendered. Additionally, because bills are not rendered, and instead the service is paid in advance, advising the customer of an amount due and payment due dates are not feasible. SP: Customers will no longer have bills that are reliant on monthly usage reads as they have previously agreed to their monthly charge.	AEP: Payment due dates will be unnecessary. Information that remains relevant – account balance, taxes, and energy usage and charges – will be available daily via the participant's selected communication methods. SP: (9)(A) Based on a fixed monthly bill amount for a 12 month period, the customer will not need beginning and ending meter readings on their bill.

	Variance Requested[1,2]	Rationale[3]	Justification[4]
20 CSR 4240-13.020 **Billing and Payment Standards (Con't)**	(12) During the billing period prior to any tariffed seasonal rate change, a utility shall notify each affected customer, on the bill or on a notice accompanying the bill, of the expected effect of the upcoming seasonal rate change on the customer's bill and the months during which the forthcoming seasonal rate will be in effect.	AEP: Payment will be accomplished before usage occurs, and no bill will be rendered. SP: Customers will receive a monthly bill in accordance with their agreed upon monthly rate at the start of joining the rate.	AEP: This information will be proactively provided through outbound communications, along with seasonal efficiency tips. Customers will have access to their usage and cost information on a daily basis. SP: The agreed upon fixed monthly charge accounts for seasonal rate changes. It will not be provided to the SP customer to minimize confusion of their fixed rate offer and guaranteed offer for no true-up.

[1] 20 CSR 4240-2.060(4)(A) – The regulation from which the Company requests a waiver and/or variance in order to implement the pilots.
[2] 20 CSR 4240-2.060(4)(C) – Evergy Missouri is the only public utility affected by this variance request.
[3] 20 CSR 4240-2.060(4)(B) – The reason the waiver and/or variance is requested to accommodate the pilots.
[4] 20 CSR 4240-2.060(4)(B) – The justification for the waiver/and or variance, e.g., why no one will be harmed, and may even benefit, from its waiver for the purposes of the pilots.

	Variance Requested[1,2]	Rationale[3]	Justification[4]
20 CSR 4240-13.025 Billing Adjustments	(1)(C) In the event of an undercharge, the utility shall offer the customer the option to pay the adjusted bill over a period at least double the period covered by the adjusted bill…	AEP: Three options will be available for undercharged amounts: 1) the undercharges will move to unpaid balance, and 25% of the initial and all future payments will go towards the arrears until the amount is repaid; 2) The customer can pay the amount in full; or 3) participants can move back to traditional billing.	AEP: The customer will have the option to make payments on a different time schedule through the 25% arrearage payoff mechanism contemplated by AEP in order to remain in the program. Otherwise, the customer may return to traditional billing and therefore have access once again to the typical payment agreement and its applicable time period for repayment.
20 CSR 4240-13.030 Deposits	(2)(C) [The utility may require a deposit if the] customer has failed to pay an undisputed bill on or before the delinquent date for five (5) billing periods out of twelve (12) consecutive monthly billing periods, or two (2) quarters out of four (4) consecutive quarters. Prior to requiring a customer to post a deposit under this subsection, the utility shall send the customer a written notice explaining the utility's right to require a deposit or include such explanation with each written discontinuance notice. Notwithstanding the foregoing; a utility may not require a deposit from a customer if such customer [under certain specific circumstances.]* *Full text omitted to conserve space.	AEP: If for any reason the customer chooses to return or is removed from AEP and returned to traditional billing before completing six months of participation, the customer will be required to provide a deposit at that time or restore their prior deposit amount as if they had not participated in AEP. Notwithstanding the foregoing, if participation in AEP increased the customer's credit with the Company, that improved credit will be taken into consideration.	AEP: If customers who are deemed a credit risk are unsuccessful on AEP, in that short timeframe, it is likely they still have the same issues with traditional billing that required the prior deposit. It is therefore reasonable to collect a deposit immediately on return to traditional payment status. The deposit could be paid in installments as necessary. The intent is to either restore the customer to the same deposit position they would be in were it not for participation in AEP or, if the customer's credit with the Company actually improved through participation, allow that improvement to be taken into consideration.
	(4)(C) Upon discontinuance or termination other than for a change of service address, [the deposit] shall be credited, with accrued interest, to the utility charges stated on the final bill and the balance, if any, shall be returned to the customer within twenty-one (21) days of the rendition of the final bill…	AEP: AEP anticipates using the deposit – as well as accrued interest – as a credit towards the participant's AEP account so that any unused deposit can be applied to pre-paid service or towards arrearages.	AEP: Because the program applies any remaining deposit to AEP, it is reasonable to also use the interest that has accrued to that deposit for the same purpose.
	Variance Requested[1,2]	Rationale[3]	Justification[4]

20 CSR 4240-13.030 Deposits (Con't)	(4)(D) Upon satisfactory payment of all undisputed utility charges during the last twelve (12) billing months, it shall be promptly refunded or credited, with accrued interest, against charges stated on subsequent bills. Payment of a charge is satisfactory if received prior to the date upon which the charge becomes delinquent provided it is not in dispute. Payment of a disputed bill shall be satisfactory if made within ten (10) days of resolution or withdrawal of the dispute. A utility may withhold refund of a deposit pending the resolution of a dispute with respect to charges secured by the deposit…	AEP: The customer's participation in AEP will not be counted against the customer in computing the time after which a deposit will be returned. For example, if a customer utilizes traditional payment methods for three months, participates in AEP for four months, then reverts back to traditional billing and reinstates the deposit, the Company will be allowed to return the deposit after nine additional months, assuming all other conditions of the section are met.	AEP: This method of time calculation is intended to restore the customer to the same deposit position they would be in were it not for participation in AEP.

	Variance Requested[1,2]	Rationale[3]	Justification[4]
20 CSR 4240-13.045 Disputes	(1) A customer shall advise a utility that all or part of a charge is in dispute by written notice, in person, or by a telephone message directed to the utility during normal business hours. A dispute must be registered with the utility at least twenty-four (24) hours prior to the date of proposed discontinuance for a customer to avoid discontinuance of service as provided by these rules.	AEP: Because a customer dispute may be lodged shortly before the money in an AEP account runs out and the services are automatically terminated, it will not always be possible for the participants to accomplish 24-hour advance notice to the company. That said, customers will receive, through the two channels of communication to which they agreed for participation in the pilot, notices 5 days before, 2 days before, and the day before an anticipated zero balance, with an additional final notice occurring at 8 am the date of disconnection. Additionally, no disconnection will occur during non-business hours.	AEP: Because of access to usage information on a daily basis, and because of the consistent notifications the customer will receive in advance of an anticipated zero account balance, a customer should be able to more quickly raise and resolve any disputes. If they do not, however, it may not be possible – due to the automated nature of the process – for the Company to prevent disconnection of the service. If the customer disputes the charges after disconnection and the dispute is credible, service can be restored promptly. Importantly: 1) Low income customers will not be disconnected under this pilot, but instead will (as necessary) be shifted back to traditional payment; and 2) the meters of those participating in the AEP program with remote connection enabling devices will be capable of restoring service, under normal conditions, within an hour of any payment or resolution.

	Variance Requested[1,2]	Rationale[3]	Justification[4]
20 CSR 4240-13.045 Disputes (Cont'd)	(7) Failure of the customer to pay to the utility the amount not in dispute within four (4) working days from the date that the dispute is registered or by the delinquent date of the disputed bill, whichever is later, shall constitute a waiver of the customer's right to continuance of service and the utility may then proceed to discontinue service as provided in this rule.	AEP: There will not be a delinquent date of the disputed bill since the key factor is the date and time the participant reaches a zero balance. That said, customers will receive, through the two channels of communication to which they agreed for participation in the pilot, notices 5 days before, 2 days before, and the day before an anticipated zero balance, with an additional final notice occurring at 8 am the date of disconnection. Additionally, no disconnection will occur during non-business hours. Instead, if the Company receives sufficient notice of the dispute in advance of the disconnection, it will move the account to dispute status and delay the disconnection. Any arrearage accrued due to lack of disconnection will be paid off with 25% of each subsequent payment, pursuant to the process established in the AEP tariff.	AEP: Because of access to usage information on a daily basis, customers should be able to more quickly raise and resolve any disputes. Additionally, the participant will be informed of the need to notify the Company as soon as possible of any dispute, or automated disconnection may be unavoidable. The multiple notices that, under normal circumstances, the customer receives before a zero balance and before disconnection should allow sufficient time to dispute any portion of a charge. Importantly: 1) Low income customers will not be disconnected under this pilot, but instead will (as necessary) be shifted back to traditional payment; and 2) the meters of those participating in the AEP program with remote connection enabling devices will be capable of restoring service, under normal conditions, within an hour of any payment.

	Variance Requested[1,2]	Rationale[3]	Justification[4]
20 CSR 4240-13.050 Discontinuance of Service	(2) (F) The failure to pay a bill correcting a previous underbilling, whenever the customer claims an inability to pay the corrected amount, unless a utility has offered the customer a payment arrangement equal to the period of underbilling.	AEP: Participants who have an inability to pay a previous underbilling will have two options: 1) The underbilling could be moved to unpaid balance and paid off with 25% of each subsequent account payment; or 2) the customer could move or be moved back to traditional billing and go onto a payment arrangement contemplated in the rule, which anticipates a time period equal to the period of the underbilling.	AEP: The customer will have the option to make payments on a different time schedule – the 25% arrearage payoff mechanism contemplated by AEP – in order to remain in the program. Otherwise, the customer may move, or be moved as may be appropriate, back to traditional billing and therefore have access once again to the typical payment agreement and its applicable time period for repayment.

	Variance Requested[1,2]	Rationale[3]	Justification[4]
20 CSR 4240-13.050 Discontinuance of Service (Cont'd)	(4) The notice of discontinuance shall contain the following information: (A) The name and address of the customer and the address, if different, where service is rendered; (B) A statement of the reason for the proposed discontinuance of service and the cost for reconnection; (C) The date on or after which service will be discontinued unless appropriate action is taken; (D) How a customer may avoid the discontinuance; (E) The possibility of a payment agreement if the claim is for a charge not in dispute and the customer is unable to pay the charge in full at one (1) time; and (F) A telephone number the customer may call from the service location without incurring toll charges and the address of the utility prominently displayed where the customer may make an inquiry….	AEP: Program materials and resources clearly state that service is pre-paid, so that as long as the account balance stays above zero, no disconnection will occur. The program does not contemplate the possibility of a payment agreement. Additionally, in order to participate in the program, customers will execute an agreement specifically containing the information required for inclusion in a typical disconnect notice, such as contact information, how to avoid disconnection, etc.	AEP: Participants will still receive communications that contain the information required in (A) through (D) and (f), (or at a minimum, directions on where to find this information based on their communications preferences participants establish for their profile) via mobile app, text, email, telephone (IVR), and smartphone push notifications. Importantly: 1) Low income customers will not be disconnected under this pilot, but instead will (as necessary) be shifted back to traditional payment; and 2) the meters of those participating in the AEP program with remote connection enabling devices will be capable of restoring service, under normal conditions, within an hour of any payment.

	Variance Requested[1,2]	Rationale[3]	Justification[4]
20 CSR 4240-13.050 Discontinuance of Service (Cont'd)	(5) An electric, gas, or water utility shall not discontinue residential service pursuant to section (1) unless written notice by first class mail is sent to the customer at least ten (10) days prior to the date of the proposed discontinuance. Service of notice by mail is complete upon mailing. As an alternative, a utility may deliver a written notice in hand to the customer at least ninety-six (96) hours prior to discontinuance. …	AEP: Rendering of a physical notice, particularly within the time periods established by the rule, is not practical given the nature of the AEP program.	AEP: The customer will have access to their daily account balance and usage data, making such notices unnecessary. Additionally, customers will receive, through the two channels of communication to which they agreed for participation in the pilot, notices 5 days before, 2 days before, and the day before an anticipated zero balance, with an additional final notice occurring at 8 am the date of disconnection. Importantly: 1) Low income customers will not be disconnected under this pilot, but instead will (as necessary) be shifted back to traditional payment; and 2) the meters of those participating in the AEP program with remote connection enabling devices will be capable of restoring service, under normal conditions, within an hour of any payment.
	(6) A utility shall maintain an accurate record of the date of mailing or delivery….	AEP: Rendering of a physical notice, particularly within the time periods established by the rule, is not practical given the nature of the program. Therefore, it will not be possible to retain records of this specific type of disconnection notice.	AEP: Instead, both the customer and the Company will have electronic access to the account's balance history, history of charges, and communication history, which includes anticipated zero balance and disconnection notices.

	Variance Requested[1,2]	Rationale[3]	Justification[4]
20 CSR 4240-13.050 Discontinuance of Service (Cont'd)	(7)(B) [Notice shall be provided] [a]t least ten (10) days prior to discontinuance of service for nonpayment of a bill or deposit at a multidwelling unit residential building where each unit is individually metered and for which a single customer is responsible for payment for service to all units in the building or at a residence in which the occupant using utility service is not the utility's customer, the utility shall give the occupant(s) written notice of the utility's intent to discontinue service; provided, however, that this notice shall not be required unless one (1) occupant has advised the utility or the utility is otherwise aware that s/he is not the customer…	AEP: It is unlikely that this situation will arise with a participant under this regulation, since it applies to one person being responsible for multiple metered units. Still, should such a customer participate in the program, the physical delivery of a disconnection notice, particularly within the time periods established by the rule, is not practical given the nature of the program.	AEP: Participating customers will have access to their daily account balance and usage data. The customer will also have notice through the program agreement that this process is accomplished based on account balance. Importantly: 1) Low income customers will not be disconnected under this pilot, but instead will (as necessary) be shifted back to traditional payment; and 2) the meters of those participating in the AEP program with remote connection enabling devices will be capable of restoring service, under normal conditions, within an hour of any payment.
	(8) At least twenty-four (24) hours preceding discontinuance, a utility shall make reasonable efforts to contact the customer to advise the customer of the proposed discontinuance and what steps must be taken to avoid it. Reasonable efforts shall include either a written notice following the notice pursuant to section (4), a doorhanger or at least two (2) telephone call attempts reasonably calculated to reach the customer.	AEP: Because it is difficult to predict exactly when an account will reach a zero balance and whether the customer will make a payment before it reaches a zero balance, this level of customer contact is not practical or cost effective. That said, customers will receive, through the two channels of communication to which they agreed for participation in the pilot, notices 5 days before, 2 days before, and the day before an anticipated zero balance, with an additional final notice occurring at 8 am the date of disconnection. Additionally, no disconnection will occur during non-business hours.	AEP: The customer will have access to their daily account balance and usage data, as well as automated disconnection communications. The customer will also have notice through the program agreement that this process is accomplished based on account balance. Importantly: 1) Low income customers will not be disconnected under this pilot, but instead will (as necessary) be shifted back to traditional payment; and 2) the meters of those participating in the AEP program with remote connection enabling devices will be capable of restoring service, under normal conditions, within an hour of any payment.

	Variance Requested[1,2]	Rationale[3]	Justification[4]
20 CSR 4240-13.050 Discontinuance of Service (Cont'd)	(9) Immediately preceding the discontinuance of service, the employee of the utility designated to perform this function, except where the safety of the employee is endangered, shall make a reasonable effort to contact and identify him/herself to the customer or a responsible person then upon the premises and shall announce the purpose of his/her presence. When service is discontinued, the employee shall leave a notice upon the premises in a manner conspicuous to the customer that service has been discontinued and the address and telephone number of the utility where the customer may arrange to have service restored.	AEP: Disconnections will be accomplished remotely and no Company employee will be deployed to physically disconnect service. That said, the customer will receive multiple notices before an anticipated zero account balance, including a final notice at 8 am the date of disconnection.	AEP: The customer will have access to their daily account balance and usage data, as well as automated disconnection alerts as noted above. The customer will have notice through the program agreement that this process is accomplished based on account balance. Importantly: 1) Low income customers will not be disconnected under this pilot, but instead will (as necessary) be shifted back to traditional payment; and 2) the meters of those participating in the AEP program with remote connection enabling devices will be capable of restoring service, under normal conditions, within an hour of any payment.
20 CSR 4240-13.055 Cold Weather Rule	(1)(E) Low income registered elderly or disabled customer means a customer registered under the provisions of subsection (1)(C) of this rule whose household income is less than one hundred fifty percent (150%) of the federal poverty guidelines...	AEP: The AEP tariff – and LIHEAP – define "low income" as at or below 200% of the federal poverty level. The Company requests that the same apply to AEP customers under the provisions of the CWR during the cold weather period.	AEP: This waiver will create more consistency between the AEP tariff and LIHEAP.

	Variance Requested[1,2]	Rationale[3]	Justification[4]
20 CSR 4240-13.055 Cold Weather Rule (Con't)	(3)(A) [Notice Requirements. From November 1 through March 31, prior to discontinuance of service due to nonpayment, the utility shall…] Notify the customer, at least ten (10) days prior to the date of the proposed discontinuance, by first-class mail, and in the case of a registered elderly or handicapped customer the additional party listed on the customer's registration form of the utility's intent to discontinue service. The contact with the registered individual shall include initially two (2) or more telephone call attempts with the mailing of the notice…	AEP: Physical delivery of a disconnection notice, particularly within the time periods established by the rule, is not practical given the nature of the AEP program. That said, customers will receive, through the two channels of communication to which they agreed for participation in the pilot, notices 5 days before, 2 days before, and the day before an anticipated zero balance, with an additional final notice occurring at 8 am the date of disconnection. Additionally, no disconnection will occur during non-business hours.	AEP: The customer will have access to their daily account balance and usage data, as well as automated disconnection communications. The customer will have notice through the program agreement that this process is accomplished based on account balance. In the case of required personal contact (D), the emergency contact (if provided) will be notified. Importantly: 1) Low income customers will not be disconnected under this pilot, but instead will (as necessary) be shifted back to traditional payment; and 2) the meters of those participating in the AEP program with remote connection enabling devices will be capable of restoring service, under normal conditions, within an hour of any payment.

	Variance Requested[1,2]	Rationale[3]	Justification[4]
20 CSR 4240-13.055 Cold Weather Rule (Con't)	(3)(B) [Notice Requirements. From November 1 through March 31, prior to discontinuance of service due to nonpayment, the utility shall…] Make further attempts to contact the customer within ninety-six (96) hours preceding discontinuance of service either by a second written notice as in subsection (3)(A), sent by first class mail; or a door hanger; or at least two (2) telephone call attempts to the customer…	AEP: Physical delivery of a disconnection notice, particularly within the time periods established by the rule, is not practical given the nature of the AEP program. That said, customers will receive, through the two channels of communication to which they agreed for participation in the pilot, notices 5 days before, 2 days before, and the day before an anticipated zero balance, with an additional final notice occurring at 8 am the date of disconnection. Additionally, no disconnection will occur during non-business hours.	AEP: The customer will have access to their daily account balance and usage data, as well as automated disconnection communications. The customer will also have adequate metering capabilities, which will include a meter capable of monitoring a customer's individual residential space. The customer will have notice through the program agreement that this process is accomplished based on account balance. In the case of required personal contact (D), the emergency contact (if provided) will be notified. Importantly: 1) Low income customers will not be disconnected under this pilot, but instead will (as necessary) be shifted back to traditional payment; and 2) the meters of those participating in the AEP program with remote connection enabling devices will be capable of restoring service, under normal conditions, within an hour of any payment.

	Variance Requested[1,2]	Rationale[3]	Justification[4]
20 CSR 4240-13.055 Cold Weather Rule (Con't)	(3)(C) [Notice Requirements. From November 1 through March 31, prior to discontinuance of service due to nonpayment, the utility shall…] Attempt to contact the customer at the time of the discontinuance of service in the manner specified by 4 CSR 240-13.050(8)…	AEP: Disconnections will be accomplished remotely, and no Company employee will be deployed to physically disconnect service therefore making contact with the customer is not practical with the AEP program. That said, customers will receive, through the two channels of communication to which they agreed for participation in the pilot, notices 5 days before, 2 days before, and the day before an anticipated zero balance, with an additional final notice occurring at 8 am the date of disconnection. Additionally, no disconnection will occur during non-business hours.	AEP: The customer will have access to their daily account balance and usage data, as well as automated disconnection communications. The customer will also have adequate metering capabilities, which will include a meter capable of monitoring a customer's individual residential space. The customer will have notice through the program agreement that this process is accomplished based on account balance. In the case of required personal contact (D), the emergency contact (if provided) will be notified. Importantly: 1) Low income customers will not be disconnected under this pilot, but instead will (as necessary) be shifted back to traditional payment; and 2) the meters of those participating in the AEP program with remote connection enabling devices will be capable of restoring service, under normal conditions, within an hour of any payment.

	Variance Requested[1,2]	Rationale[3]	Justification[4]
20 CSR 4240-13.055 Cold Weather Rule (Con't)	(3)(D) [Notice Requirements. From November 1 through March 31, prior to discontinuance of service due to nonpayment, the utility shall…] Make a personal contact on the premises with a registered elderly or handicapped customer or some member of the family above the age of fifteen (15) years, at the time of the discontinuance of service…	AEP: Disconnections will be accomplished remotely, and no Company employee will be deployed to physically disconnect service therefore making contact with the customer is not practical with the AEP program. That said, customers will receive, through the two channels of communication to which they agreed for participation in the pilot, notices 5 days before, 2 days before, and the day before an anticipated zero balance, with an additional final notice occurring at 8 am the date of disconnection. Additionally, no disconnection.	AEP: The customer will have access to their daily account balance and usage data, as well as automated disconnection communications. The customer will also have adequate metering capabilities, which will include a meter capable of monitoring a customer's individual residential space. The customer will have notice through the program agreement that this process is accomplished based on account balance. In the case of required personal contact (D), the emergency contact (if provided) will be notified. Importantly: 1) Low income customers will not be disconnected under this pilot, but instead will (as necessary) be shifted back to traditional payment; and 2) the meters of those participating in the AEP program with remote connection enabling devices will be capable of restoring service, under normal conditions, within an hour of any payment.

	Variance Requested[1,2]	Rationale[3]	Justification[4]
20 CSR 4240-13.055 Cold Weather Rule (Con't)	(3)(E) [Notice Requirements. From November 1 through March 31, prior to discontinuance of service due to nonpayment, the utility shall…] Ensure that all of the notices and contacts required in this section shall describe the terms for provisions of service under this rule, including the method of calculating the required payments, the availability of financial assistance from the Division of Family Services and social service or charitable organizations that have notified the utility that they provide that assistance and the identity of those organizations.	AEP: The program clearly states that service is pre-paid, so that as long as the account balance stays above zero, no disconnection will occur. That said, customers will receive, through the two channels of communication to which they agreed for participation in the pilot, notices 5 days before, 2 days before, and the day before an anticipated zero balance, with an additional final notice occurring at 8 am the date of disconnection. These notices will direct the customer to the location of additional information, including a toll- free contact number.	AEP: Participants will still receive alerts and other non-physically rendered communications that will either contain the required information, including the availability of financial assistance, or will direct customers to a location where this additional information is available (e.g., text and voice messages will reference links to websites and toll free numbers where the information will be provided). Importantly: 1) Low income customers will not be disconnected under this pilot, but instead will (as necessary) be shifted back to traditional payment; and 2) the meters of those participating in the AEP program with remote connection enabling devices will be capable of restoring service, under normal conditions, within an hour of any payment.

	Variance Requested[1,2]	Rationale[3]	Justification[4]
20 CSR 4240-13.055 Cold Weather Rule (Con't)	(6)(B) [Discontinuance of Service. From November 1 through March 31, a utility may not discontinue heat-related residential utility service due to nonpayment of a delinquent bill or account provided …] The utility receives an initial payment and the customer enters into a payment agreement both of which are in compliance with section (10) of this rule…	AEP: CWR payment agreements that comply with 4 CSR 240-13.055(10) will not be available under the pilot, so instead, compliance with the AEP arrearage payoff (25% of payments go to any arrearage) will apply. Payment Agreements will only be available if the participant reverts back to traditional billing.	AEP: The customer will have access to their daily account balance and usage data, as well as automated disconnection communications. The customer will have notice through the AEP program agreement that this process is accomplished based on account balance.
	(9)(B) Reconnection Provisions. If a utility has discontinued heat-related utility service to a residential customer due to nonpayment of a delinquent account, the utility, from November 1 through March 31, shall reconnect service to that customer without requiring a deposit; provided— ... (B) The utility receives an initial payment and the customer enters into a payment agreement both of which are in compliance with section (10) of this rule;	AEP: CWR payment agreements that comply with 4 CSR 240-13.055(10) will not be available under the pilot, so instead, compliance with the AEP arrearage payoff (25% of payments go to any arrearage) will apply. Payment Agreements will only be available if the participant reverts back to traditional billing.	AEP: The customer will have access to their daily account balance and usage data, as well as automated disconnection communications. The customer will have notice through the AEP program agreement that this process is accomplished based on account balance.
	(10) Payment Agreements. The payment agreement for service under this rule shall comply with the following…* *Full text omitted to conserve space.	AEP: CWR payment agreements that comply with 4 CSR 240-13.055(10) will not be available under the pilot, so instead, compliance with the AEP arrearage payoff (25% of payments go to any arrearage) will apply. Payment Agreements will only be available if the participant reverts back to traditional billing.	AEP: The customer will have access to their daily account balance and usage data, as well as automated disconnection communications. The customer will have notice through the program agreement that this process is accomplished based on account balance.

Commercial Installed Charging Station Cost Projection

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

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

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

Evergy's Customer Education/Outreach for Business EV Charging Rebates and Rates

Evergy will use an integrated, multi-channel marketing campaign approach that is optimized around the marketing funnel, which outlines the path customers take from awareness to education to conversion and, finally, to continued engagement. We guide customers through this process by matching marketing campaign elements and tactics to customers' informational needs at various points within the funnel. Customers receive further support through the engagement portion when we cross-promote other related programs or information in which they haven't yet participated, like encouraging off-peak charging.

Evergy's marketing team has demonstrated success in program marketing, including many years of MEEIA marketing and most recently with our Time of Use Plan, which saw its enrollment goals quickly met and positive feedback from customers on communication, marketing, and enrollment process. In addition, Evergy's past electric vehicle education and marketing program has received many industry and professional marketing and website awards and honors, including from Chartwell, ESource, Public Relations Society of America (PRSA) and International Association of Business Communicators (IABC), among others.

Marketing Planning

When new programs are proposed to the Commission, the Evergy marketing team participates in stakeholder discussion and reviews Commission feedback and orders to help inform our marketing strategy. Once a program is fully approved by stakeholders and the Commission, the Evergy marketing team will work to develop a campaign strategy considering the agreed-upon programs, individual requirements, customer segments identified, and desired stipulations outcomes and goals. One of the key drivers in developing a marketing strategy will be the final approved program and stipulation information, which makes waiting on approval important before building out all the marketing strategies and details.

This planning will have multiple phases developed over 3-5 months once programs are approved:

1. Customer and Program Research and Audience Development
2. Marketing Strategy, Outreach/Advertising Tactics, Timeline and Budget
3. Program Naming and Messaging
4. Creative Development
5. Testing
6. Deployment and Measurement

While we haven't developed a full marketing plan at this point for the Business EV Charging Rebates and Business EV Time of Use Rate programs, we have drafted an outline (See Below) based on our current understanding and thinking for customer outreach and education. This draft will likely change and continue to develop as discussions with stakeholders and Commission continue and once final programs are approved.

Budgeting

Evergy will use customer feedback, advertising channel measurement, and enrollment metrics to continuously adjust our marketing spend over the 5-year project based on this feedback and overall campaign performance. In addition, advertising buys, printing, and mailing costs fluctuates often, making it important to allow for ongoing adjustments and change to marketing spend categories.

While we expect to know more details around suggested spending during the marketing strategy and timeline phase, we currently estimate the below percentage spend during year one of these programs. Year one is expected to have more startup and research costs that won't be needed in future years, and those costs will be shifted to additional outreach tactics, depending on enrollment performance.

Year 1 Estimated Budget	
Program Naming, Messaging, Research and Startup:	20%
Employee Materials and Training:	5%
Website and Enrollment Development:	15%
Commercial Rebate and Rate Outreach and Education:	45%
Enrollment Success, Continued Education & Cross Promotion:	15%

DRAFT/EXAMPLE:
Marketing Strategy for Business EV Charging Rebates and Rates

Note: Final outreach, tactics, goals, and metrics will be developed in a full marketing plan once programs are approved taking into consideration stakeholder and Commission feedback.

Overview

This marketing strategy (DRAFT) outlines the high-level education and marketing strategies, and goals for commercial EV charging rebates and rates. Additional detailed marketing and communication plans will be developed once final program details are established through the stakeholder and Commission engagement process.

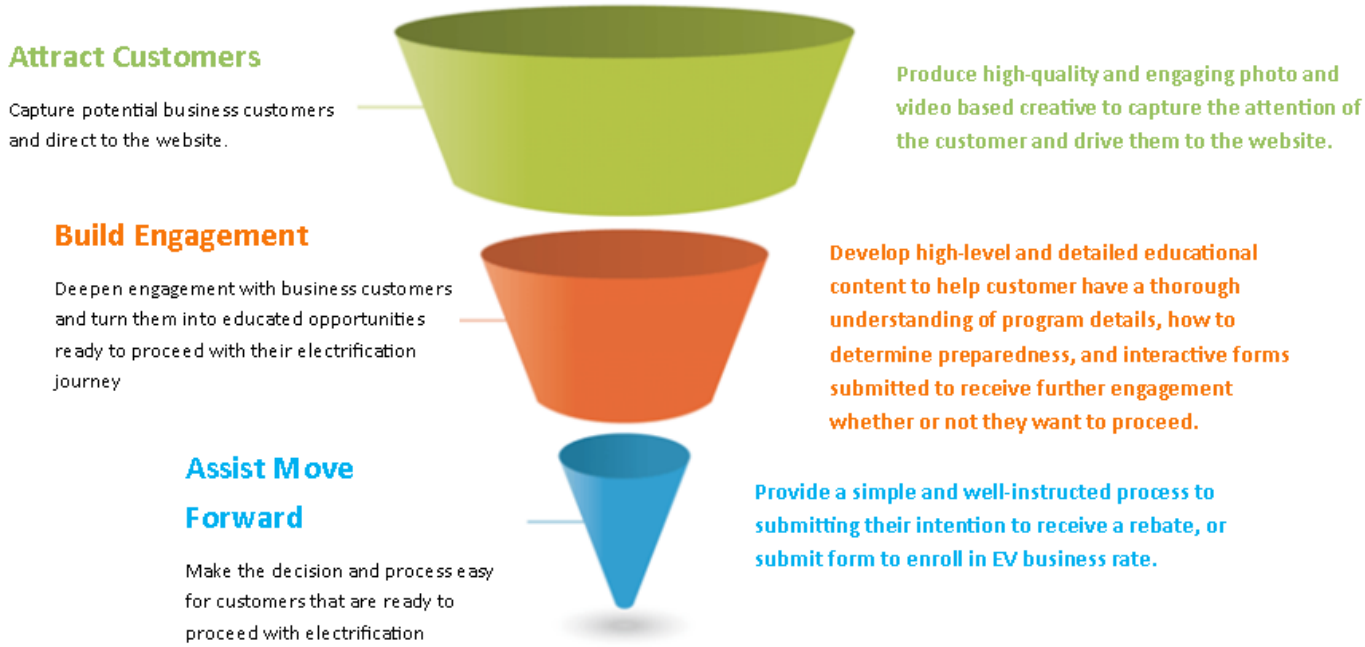
Main Goals

The key to success is to establish Evergy as a knowledgeable leader in electrification and create an education-based web presence serving as the destination for all outreach activities. Also, it will be important to get the outreach materials in front of the customer either through direct outreach for smaller business customers, or Customer Solution Manager interaction for larger business customers. The commercial customer should be educated on the benefits of EVs and offering EV charging, that rebates are available to help offset the cost of installing infrastructure, benefits of off-peak charging and that Evergy is a trusted advisor to help them through the process.

- **Educate** commercial customers on the benefits of offering EV charging
- **Inform** commercial customers on the availability of rebates to help offset the cost of installing EV charging
- **Encourage** and educate commercial customers on the benefits of off-peak charging
- **Support** commercial customers at a trusted advisory on EVs, EV charging and rate options

Strategy

An integrated, multi-channel marketing campaign approach that is optimized around the marketing funnel, which outlines the path customers take from awareness to education to conversion and, finally, to continued engagement. We will guide customers through this process by matching marketing campaign elements and tactics to customers' informational needs at various points within the funnel. Customers will receive further support through the engagement portion when we cross-promote other related programs or information in which they haven't yet participated, like encouraging off-peak charging.



Targets and Tactic

	Rebates	Rates
Target	Business customers and 3rd party developers (i.e. Francis Energy, Tesla)	Business Fleet and Transit customers
Goals	- Educate on available incentive - Educate on eligibility - Educate on how to apply - Educate on Qualified Equipment - Educate on beneficial electrification - Educate on site selection and program	- Educate on availability of new rates - Educate on eligibility - Educate on benefits of TOU rates

Possible Outreach Plans/Tactics	a. Website Content b. Staff training c. Material/collateral d. Customer events/webinars e. Program guides f. Digital advertising g. Social Media Ads h. Email targeting i. Case Studies	a. Website Content b. Digital advertising c. Staff training/CSM support d. Case Studies e. Direct Mail f. 1:1 Outreach
Possible Metrics	1. EV adoption growth 2. Number of rebate participants 3. Event/webinar participation 4. Interest forms received 5. Number of site visits/interest meetings 6. % Website clicks 7. Marketing performance by tactic	1. Interest forms received 2. Number of site visits/interest meetings 3. Number of participants 4. % Website clicks 5. Marketing performance by tactic

Core Audiences

Marketing materials and webpages will be developed around 4 main audience groups, with some additional personalization for sub-audiences within the main groups. The 4 main audience groups will be Workplace and Business Fleets, Transit Agencies and Schools, Multi-Family Owners, and Public Charging locations.

Workplace & Business Fleet				
Target Audience	**Target Audience**	**Program**	**Key Message**	**Tactics**
Workplace	-Business customers with a workforce who can benefit from charging during the day	-EV Charging Rebate - Off-Peak Charing Education	- Sustainability goals - Attract workforce - Offset cost of installation	-Direct mail -Email - Web - Webinar - Video - Case Studies
Business Fleet	-Business customers with more than two electrified fleet vehicles	-EV Charging Rebate -EV Business Rate - Off-Peak Charing Education	- Sustainability goals - Lower cost of operation - Offset cost of installation - Save more with EV rate	

Transit/School Fleet				
Target Audience	**Target Audience**	**Program**	**Key Message**	**Tactics**
Transit	-Transit authorities	-EV Charging Rebate -Transit rate - Off-Peak Charing Education	-Sustainability goals -Lifetime cost -Operational cost -Offset cost of installation -Lower charging cost	- Events - Direct Mail - Email - Web - Webinar - Video - Case Studies
School	-Districts/individual schools			

Multi-family				
Target Audience	**Target Audience**	**Program**	**Key Message**	**Tactics**
Multi-family	-Property managers -HOA	-EV Charging Rebate - Off-Peak Charing Education	-Sustainability goals -Benefit to current tenants -Attract new residents -Offset cost of installation	- Direct Mail - Email - Web - Webinar - Video - Case Study

Public Charging				
Target Audience	**Target Audience**	**Program**	**Key Message**	**Tactics**
Businesses	-Business customers wanting to provide public charging	-EV Charging Rebate - Off-Peak Charing Education	-Sustainability goals -Attract new customers -Additional customer base spends time and money -Offset cost of installation	- Direct Mail - Email - Web - Webinar

Cost Effectiveness Evaluation of On-Road Transportation Electrification

Evergy, Missouri Metro

Revised May 2021

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Executive Summary

Evergy has identified critical investments in transportation electrification that will further enable electric vehicle (EV) adoption in its Missouri 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 $42.5 million in customer benefits through 2040 under a medium EV adoption scenario, which is equivalent to customer benefits of $1,112 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 Missouri 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 $1,886 per EV to $5,233 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 $843 per EV to $3,462 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 $10.5 million to $113.4 million. On a per vehicle basis, this benefit translates to between approximately $1,042 and $1,771 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 Missouri. With the help of Evergy's Clean Charge Network, the EV market in Evergy's Missouri Metro service territory has grown over the past five years, with EVs on the road increasing by 431% from 384 EVs in 2015 to 2,041 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 Missouri 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 5,061 and 160,248 metric tons of greenhouse gases could be reduced annually through increased EV adoption within Evergy's Missouri 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.

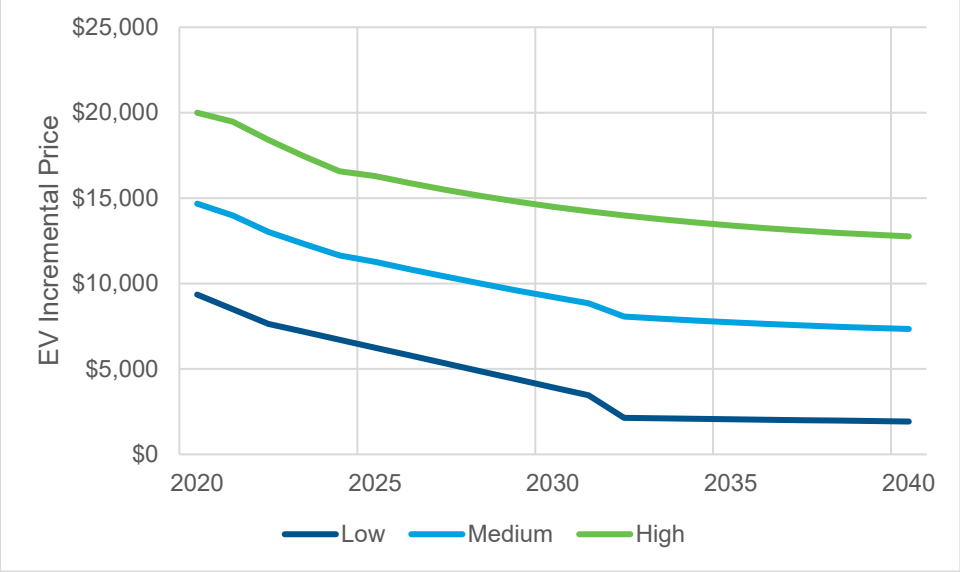
2. Data & Assumptions

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

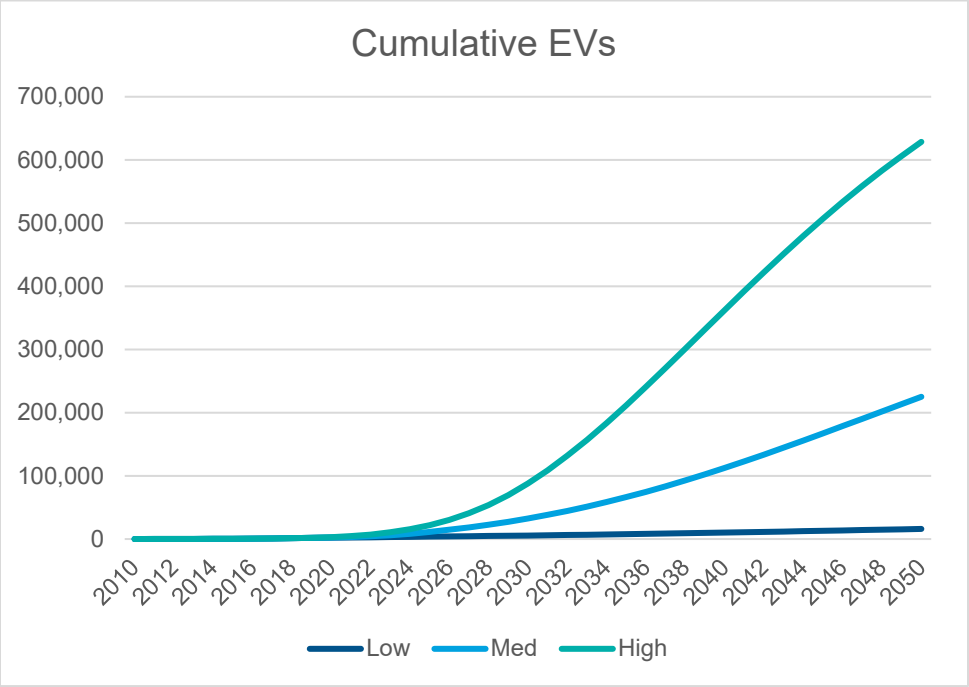
[5] Internal Revenue Service. Plug-In Electric Drive Vehicle Credit (IRC 30D), Accessed January 2021 online via https://www.irs.gov/businesses/plug-in-electric-vehicle-credit-irc-30-and-irc-30d.

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 Missouri Metro service territory for this analysis. Figure 2 shows EPRI's low, medium, and high EV adoption scenarios.

Figure 2. EPRI Evergy Missouri 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]

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

Fuel Pricing

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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 Missouri Metro 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.

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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 Integrated Resource Plan 2020 Annual Update, which developed a Southwest Power Pool Locational Marginal Prices forecast. [8] Capacity costs are sourced from the Missouri Energy Efficiency Investment Act (MEEIA) Cycle 3 plan, which was approved in December 2019.[9]

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Gasoline pricing assumptions were developed using a combination of wholesale gasoline pricing, EIA projects 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 forecasted 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 (MO) gasoline taxes	Held constant at 17.0 ¢/gallon.

[8] Missouri Public Service Commission Case No. EO-2020-0280.

[9] Missouri Public Service Commission Case No. EO-2019-0132.

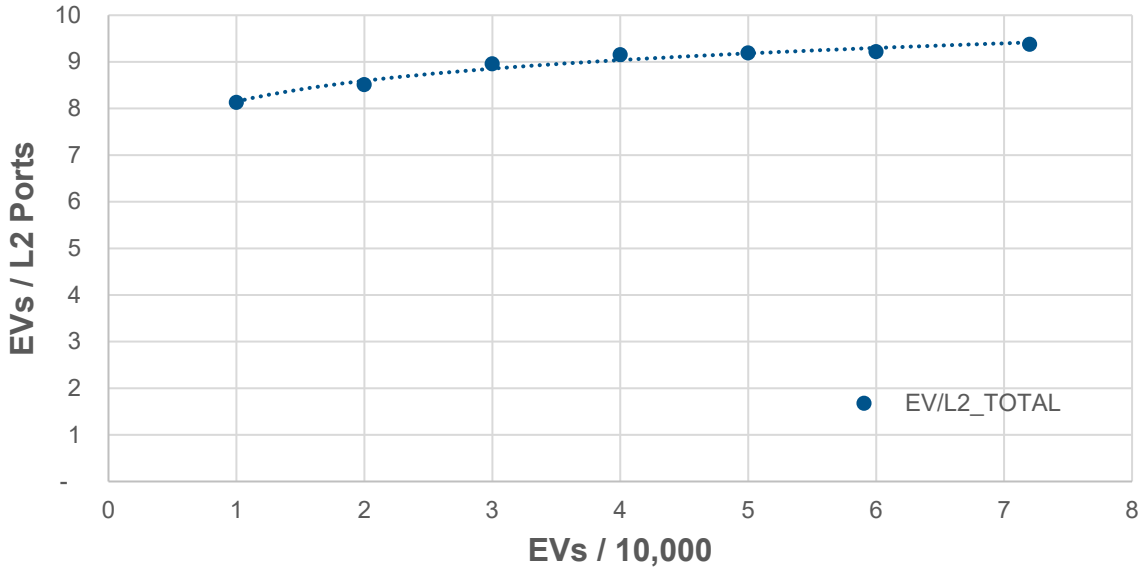
EV Charging Infrastructure

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.[10] 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 Missouri Metro Service Territory



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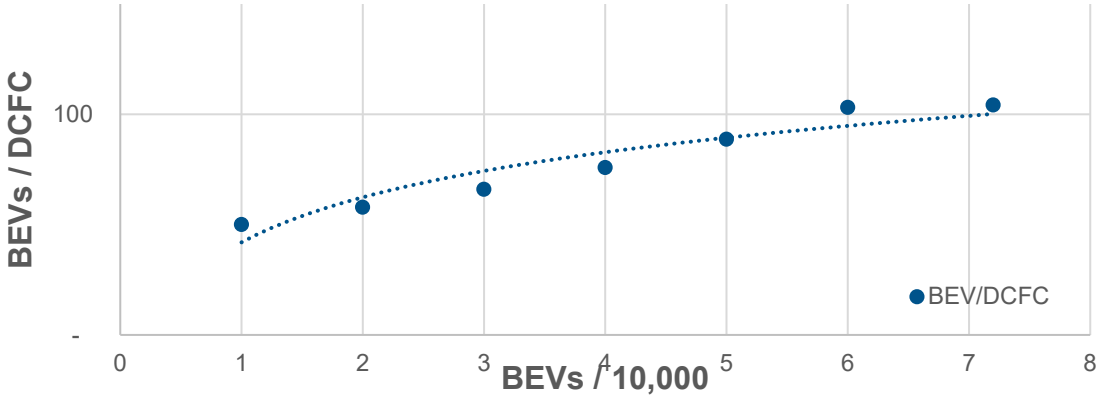
- For DCFC (assumed to be units providing at least 50 kW), ICF fit a curve to outputs from the EVI-Pro Lite tool across different BEV adoption rates for the Kansas City area to estimate the amount of DCFCs that would be needed (see Figure 4).

Figure 4. DC Fast Chargers as a Function of BEVs in Evergy's Missouri 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 project EV adoption in Evergy's Missouri Metro service territory.

Charging Infrastructure Costs

ICF's analysis applied the following cost assumptions for residential charging, commercial (non-residential) charging, and DC fast charging 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.
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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 Missouri Metro service territory. There is a net present value (NPV) of approximately $42.5 million in customer benefits from 2021 through 2040 under the medium EV adoption scenario, which is equivalent to customer benefits of $1,112 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 Missouri 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 $52.7 million, or $1,378 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 $184.6 million for EV drivers or -$4,826 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 $95.3 million, valued at approximately $2,490 per EV deployed. However, as EV pricing increases to the high incremental cost, ICF reports net societal costs of $142.1 million or -$3,714 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	$95.3	$52.7	$42.5
Per EV Deployed	$2,490	$1,378	$1,112

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	-$23.4	-$66.0	$42.5
Per EV Deployed	-$612	-$1,724	$1,112

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	-$142.1	-$184.6	$42.5
Per EV Deployed	-$3,714	-$4,826	$1,112

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 Missouri 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	$31.1	$20.6	$10.5
Per EV Deployed	$5,233	$3,462	$1,771

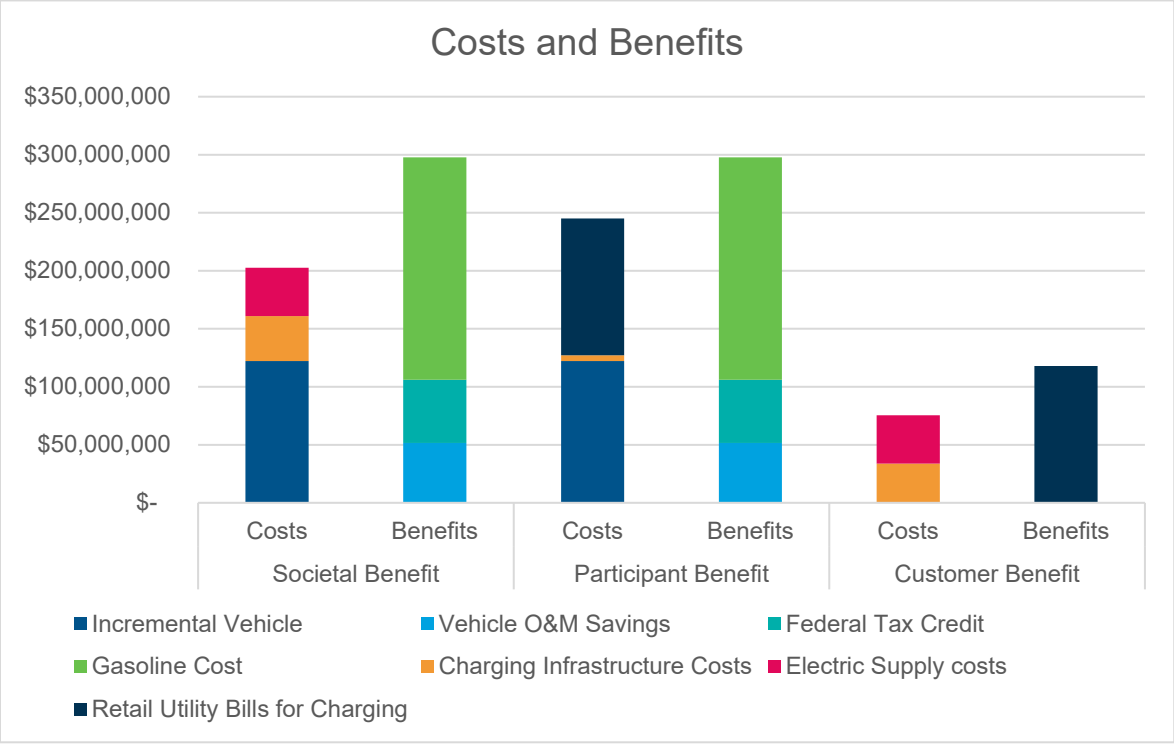
EV Adoption	Medium Scenario		
EV Pricing	Low Scenario		
Rate (Res / Comm)	Residential, Small General Service, Medium General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	$95.3	$52.7	$42.5
Per EV Deployed	$2,490	$1,378	$1,112

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	$205.3	$91.8	$113.4
Per EV Deployed	$1,886	$843	$1,042

Conclusion

Increased EV adoption with low incremental EV pricing will benefit EV drivers, Evergy's customers, and society throughout the Missouri 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, Missouri West

Revised May 2021

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Executive Summary

Evergy has identified critical investments in transportation electrification that will further enable electric vehicle (EV) adoption in its Missouri West 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 $22.6 million in customer benefits through 2040 under a medium EV adoption scenario, which is equivalent to customer benefits of $900 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 Missouri West 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 $1,581 per EV to $4,980 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 $739 per EV to $3,313 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 $4.9 million to $65.7 million. On a per vehicle basis, this benefit translates to between approximately $842 and $1,666 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 Missouri. With the help of Evergy's Clean Charge Network, the EV market in Evergy's Missouri West service territory has grown over the past five years, with EVs on the road increasing by 377% from 203 EVs in 2015 to 969 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 Missouri West 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 2,798 and 130,483 metric tons of greenhouse gases could be reduced annually through increased EV adoption within Evergy's Missouri West 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.

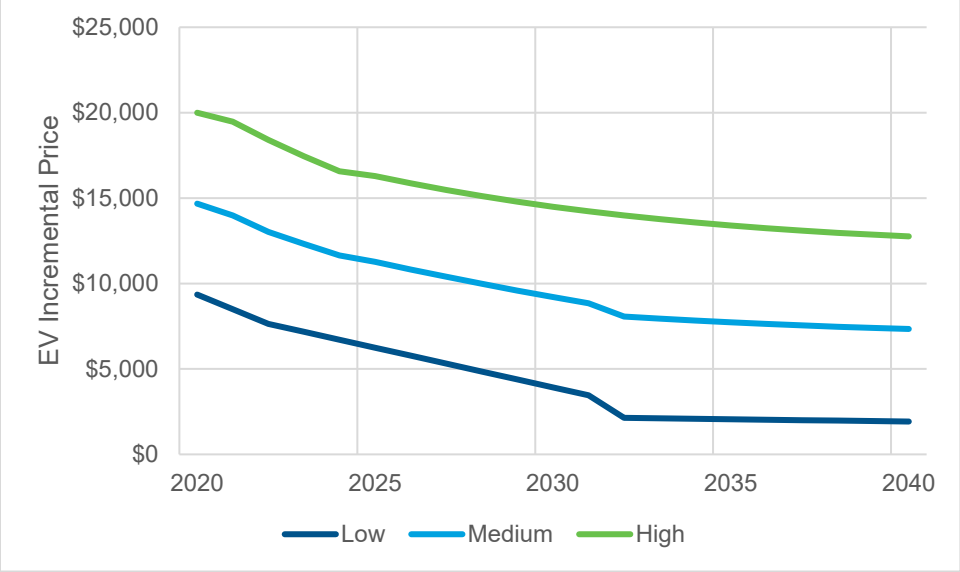
2. Data & Assumptions

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

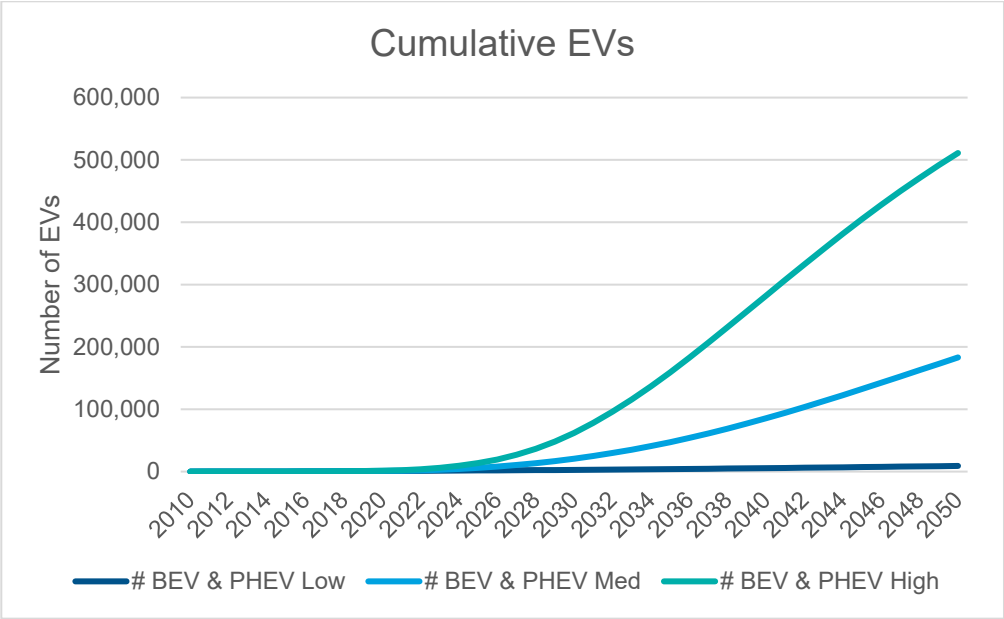
[5] Internal Revenue Service. Plug-In Electric Drive Vehicle Credit (IRC 30D), Accessed January 2021 online via https://www.irs.gov/businesses/plug-in-electric-vehicle-credit-irc-30-and-irc-30d.

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 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 Missouri West service territory for this analysis. Figure 2 shows EPRI's low, medium, and high EV adoption scenarios.

Figure 2. EPRI Evergy Missouri West EV Adoption Scenarios Used in ICF Modeling



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[8] Missouri Public Service Commission Case No. EO-2020-0281.

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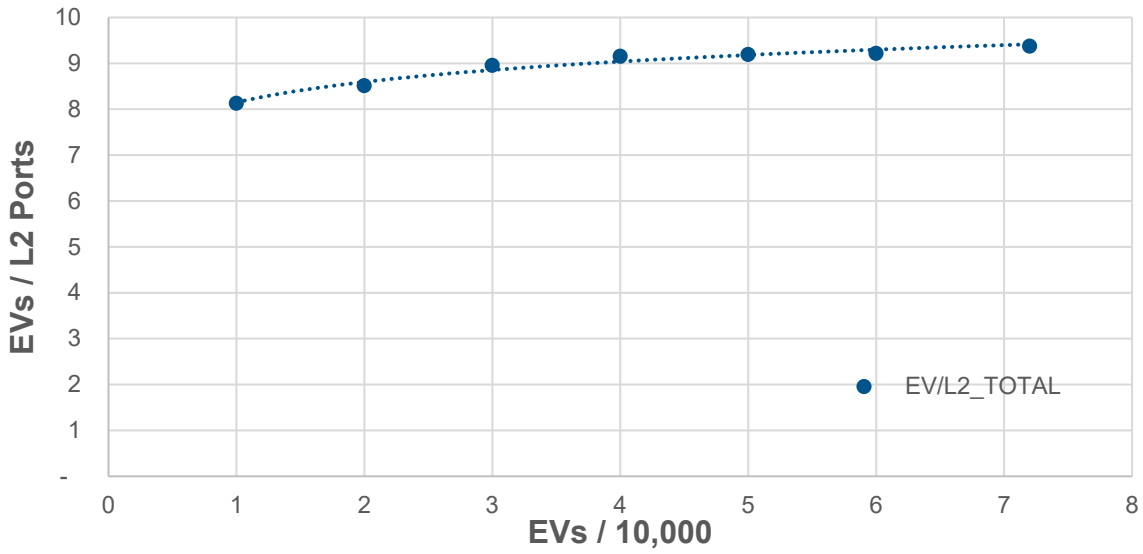

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- For DCFC (assumed to be units providing at least 50 kW), ICF fit a curve to outputs from the EVI-Pro Lite tool across different BEV adoption rates for St. Joseph to estimate the amount of DCFCs that would be needed (see Figure 4).

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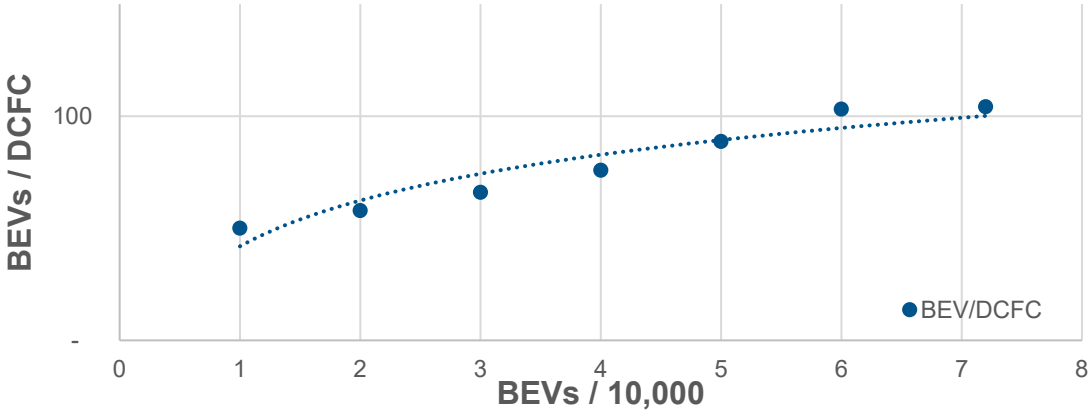

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ICF's analysis demonstrates that there are net customer benefits associated with EV adoption within Evergy's Missouri West service territory. There is a net present value (NPV) of approximately $22.6 million in customer benefits from 2021 through 2040 under the medium EV adoption scenario, which is equivalent to customer benefits of $900 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 Missouri West 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 $27.6 million, or $1,101 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 $123.8 million for EV drivers or -$4,939 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 $50.2 million, valued at approximately $2,001 per EV deployed. However, as EV pricing increases to the high incremental cost, ICF reports net societal costs of $101.3 million or nearly -$4,040 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, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	$50.2	$27.6	$22.6
Per EV Deployed	$2,001	$1,101	$900

EV Adoption	Medium Scenario		
EV Pricing	Medium Scenario		
Rate (Res / Comm)	Residential, Small General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	-$25.6	-$48.1	$22.6
Per EV Deployed	-$1,019	-$1,919	$900

EV Adoption	Medium Scenario		
EV Pricing	High Scenario		
Rate (Res / Comm)	Residential, Small General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	-$101.3	-$123.8	$22.6
Per EV Deployed	-$4,040	-$4,939	$900

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 Missouri West 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, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	$14.7	$9.8	$4.9
Per EV Deployed	$4,980	$3,313	$1,666

EV Adoption	Medium Scenario		
EV Pricing	Low Scenario		
Rate (Res / Comm)	Residential, Small General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	$50.2	$27.6	$22.6
Per EV Deployed	$2,001	$1,101	$900

EV Adoption	High Scenario		
EV Pricing	Low Scenario		
Rate (Res / Comm)	Residential, Small General Service, Public Charging		
	Societal	Participant	Customer
Net, $M, NPV	$123.5	$57.7	$65.7
Per EV Deployed	$1,581	$739	$842

Conclusion

Increased EV adoption with low incremental EV pricing will benefit EV drivers, Evergy's customers, and society throughout the Missouri West 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