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APPLICATION OF EL PASO ELECTRIC COMPANY FOR APPROVAL OF ITS TEXAS ELECTRIC VEHICLE -READY PILOT PROGRAMS AND TARIFFS	§ § § § §	**STATE OFFICE OF ADMINISTRATVE HEARING**

DIRECT TESTIMONY

OF

JARED BALLEW

ON BEHALF OF EV.ENERGY CORP

February 20, 2024

I. Introduction and Summary of Recommendations

Q: Please state your name.

A: My name is Jared Ballew.

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

A: I am the US Policy Director at EV.ENERGY CORP (ev.energy).

Q: Please describe your current role and your relevant professional experience.

A: In my current role, I lead ev.energy's regulatory and policy efforts across the United States. I primarily engage on behalf of ev.energy at utility regulatory commissions, state legislatures, and other regulatory agencies to promote public policies that maximize the benefits of electric vehicle (EV) charging, such as managed charging (V1G) and vehicle-to-grid (V2G) programs, and advance best practices within the electric vehicle charging industry.

My relevant professional experience appears in my CV, which is attached as Attachment JB-1.

Q: Please describe ev.energy.

A: ev.energy is an industry-leading software platform for EV grid integration, with over five years of experience administering more than a dozen managed EV programs across the US – including SmartCharge New York, the country's largest managed charging program – as well as dozens of additional programs across the UK, Europe, and Australia. ev.energy provides an end-to-end solution for utilities to directly connect to residential, commercial, and fleet EVs through a broad suite of Application Programming Interfaces (APIs), utilizing a hardware-agnostic platform that allows for customer participation through either

networked electric vehicle supply equipment (EVSE) or vehicle telematics. Through our APIs with dozens of auto original equipment manufacturers (OEM) and EVSE brands, ev.energy's software provides coverage for the vast majority of light-duty EVs in Texas.

To deliver high-performing and cost-effective managed charging programs for our utility partners, ev.energy connects to the vehicle or EVSE to obtain charging data and can utilize these connections to deliver active load control for the purposes of vehicle-grid integration. Specifically, ev.energy can obtain one or multiple signals from a utility including time-of-use rate structures, localized load feeds or thermal inputs from a distributed energy resource management system (DERMS) platform, bulk system demand-response dispatches, and/or renewable energy generation forecasts. ev.energy's algorithm can use these signals to schedule, turn on/off, and/or throttle EV charging in order to optimize load at both the network and local distribution levels while still ensuring the customer's vehicle is charged by the time they need it. Over 95% of EV drivers on our platform adhere to managed charging each day, which we achieve through an award-winning mobile app or mobile-friendly web portal that can be co-branded for the utility and provides the customer with transparency and convenient control over their EV charging schedule, consumption/costs, battery level and health, and the ability to opt out of managed charging events if needed.

Our software helps utilities administer a diverse range of managed-charging program designs around one or multiple goals, including:

- Reliable off-peak load shifting: EPRI has verified our ability to shift 80-90% of EV charging to off-peak hours with Ameren across Missouri and Illinois;[1]
- Meaningful DR curtailment: With a customer opt-out rate of less than 2% during the summer 2023 season, we were able to deliver over 1 kW of load reduction per EV to the United Illuminating Company of Connecticut;[2]
- Renewable generation alignment: Administering programs such as Silicon Valley Clean Energy's GridShift program, ev.energy shifted an average of 42% of EV charging to hours of low carbon intensity;[3]
- EV Charging Subscription Rate Programs: Our platform collects charging data for National Grid's EV Charge Smart Plan which saves their New York customers up to 30% on their at-home EV charging by offering a choice of two subscription tiers that provide off-peak charging for a flat monthly fee;[4] and
- Customer savings: We've been proven to reduce customers' energy bills by administering an EV-specific Time-of-Use rate for Con Edison, nudging and incentivizing customers to charge during off-peak hours and saving them an average of $400/year through the Smart Charge New York program.[5]

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[1] https://skipsolabs-epri.s3.amazonaws.com/uploads/content/44bf0c2a83c23c767aa6ef08548c268bb68864ba.pdf.
[2] https://www.dpuc.state.ct.us/dockcurr.nsf/8c6fc37a54110c3e852576190052b64d/2da56c102725a0d385258a2a0072c555/$FILE/Annual%20Review%20Tech%20Session%20%209.19.23_.pdf, slide 22.
[3] https://cyclecanenergy.org/wp-content/uploads/GridShift-pilot-report_2021.pdf.
[4] https://www.nationalgridus.com/Charge-Smart-UNY.
[5] https://scny.ev.energy/.

Q: What is ev.energy's relationship with El Paso Electric Company (EPE or the Company)?

A: ev.energy was selected as the vendor to administer the EV Smart Rewards Pilot. However, ev.energy participates in various utility proceedings across the country, including places where we have not been selected as a vendor. ev.energy believes managed charging is a critical component of the transition to electrified transportation and advocates for the implementation of managed charging programs wherever feasible.

Q: What is the purpose of your Direct Testimony?

A: The purpose of my Direct Testimony is to explain ev.energy's position on EPE's Application for approval of its Texas Electric EV-Ready Pilot Programs. Specifically, I will address EPE's proposal to implement the EV Smart Rewards managed charging Pilot. ev.energy strongly supports the approval of EPE's Application, which represents a strong step towards developing the necessary capabilities to harness the massive potential of EVs to provide benefits to EPE and its customers.

Q: Please summarize your recommendations for the Commission.

A: I recommend that the Public Utility Commission of Texas (Commission) approve EPE's proposed EV Smart Rewards Pilot for the reasons outlined in my testimony.

II. El Paso Electric's Proposed EV Smart Rewards Pilot

Q: What will you address in this section of your testimony?

A: In this section of my testimony, I will provide an overview of utility managed charging programs and discuss ev.energy's position on EPE's proposed EV-Ready Pilot Programs, with a focus on the proposed EV Smart Rewards Pilot.

Q: What are managed charging programs?

A: Managed charging programs refer to utility programs that are designed to manage customer EV charging activity in response to grid conditions and distribution constraints. Managed charging programs generally fall into two categories:[6]

1) Passive Managed Charging – Relies on rates (e.g., EV-specific TOU rates) or incentives to influence customers to manually shift their charging behavior.
2) Active Managed Charging – Enables utilities and grid operators to directly connect with participants' networked charging stations or vehicle telematics to actively control participating customers' charging activity in response to grid conditions, while still respecting customer preferences around battery level and departure time. This direct control generally delivers greater grid benefits.[7] Active managed charging programs are analogous to EPE's Energy Wise Savings Program, in which EPE actively manages customers' smart thermostats to mitigate peak loads on hot days.[8]

Many utilities have recognized the importance of managing EV charging activity and begun to implement managed charging programs. There are numerous examples of managed charging programs across the United States, such as Ameren's Managed Charging Pilots in Illinois and Missouri,[9] ConEd's SmartCharge NY program,[10] Xcel

[6] Smart Electric Power Alliance, *The State of Managed Charging in 2021*, p. 9. Available at: https://sepapower.org/resource/the-state-of-managed-charging-in-2021/.
[7] *Id.*
[8] https://tx.epelectricmarketplace.com/content_drpc_info.html.
[9] https://skipsolabs-epri.s3.amazonaws.com/uploads/content/44bf0c2a83c23c767aa6cf08548c268bb68864ba.pdf.
[10] https://www.coned.com/en/save-money/rebates-incentives-tax-credits/rebates-incentives-tax-credits-for-residential-customers/electric-vehicle-rewards.

Energy's Colorado Charging Perks Pilot,[11] Madison Gas and Electric's MGE Charge Ahead program,[12] Eversource and United Illuminating's Connecticut EV Charging Programs,[13] and New York State Electric & Gas/Rochester Gas & Electric's Charge Smart program.[14]

Crucially, managed charging programs are specifically designed around EV charging activity, which helps maximize the benefits realized from these programs.

Q: Why is it important for utilities to implement EV-specific load management tools such as managed charging programs?

A: Strategies designed around shifting customer electricity consumption at the whole-home level (e.g., whole-home TOU rates) can be an effective means for encouraging certain customers to shift their general electricity consumption to off-peak hours. However, some customers may be unwilling to take service for their entire household on TOU rates, but still want to participate in a managed charging program for their EV. For example, many customers might be unwilling to shift the times that they heat or cool their home, use hot water, or use their oven in response to TOU rates and will choose a flat volumetric rate option as a result of these preferences. However, EVs are typically parked overnight, and drivers typically do not care when charging occurs as long as their vehicle reaches the desired state of charge by the time they leave home in the morning. As a result, there are

[11] https://ev.xcelenergy.com/Charging-Perks.
[12] https://www.mge.com/our-environment/electric-vehicles/charging/charge-ahead.
[13] https://www.uinet.com/documents/1678076/1704262/UI+-+UEVC002+-+EV+Program+Participant+Guide+12-2023.pdf/2360d292-2da0-0c67-a31a-fdc74cd60824?t=1702590958394.
[14] https://www.nyseg.com/smartenergy/electricvehicles/ev-programs-for-your-home.
https://www.rge.com/smartenergy/electricvehicles/ev-programs-for-your-home.

likely to be some customers who are willing to participate in EV-specific managed charging programs but who are unwilling to participate in optional whole-home TOU rates.

Additionally, EV charging load has unique characteristics from other residential energy usage that make EV-specific charging programs more effective for managing load than other strategies, such as whole-home TOU rates. Specifically, most personal vehicles are stationary for 22 or more hours daily,[15] and over 80% of EV charging occurs at home.[16] This significant downtime means there is substantial flexibility for when EV charging activity can occur over the course of the day to meet drivers' needs, presenting a massive potential to manage residential EV charging around grid conditions.

Additionally, active managed charging programs can stagger charging activity, allowing the utility to minimize or avoid "timer peaks," in which EV charging load spikes at the beginning of an off-peak period for drivers on TOU rates or certain passive managed charging programs.[17] As a result of EVs' long dwell times, there is significant flexibility in charging schedules, which managed charging programs can take advantage of to align charging with the most beneficial periods for the grid.

Q: What has EPE proposed for the EV Smart Rewards Pilot?

A: The proposed EV Smart Rewards Pilot is a two-year, voluntary residential managed charging pilot, in which EPE would have the ability to actively manage the charging

[15] *See* SEPA, The State of Managed Charging in 2021 (November 2021), p. 7. Available at: https://sepapower.org/resource/managed-charging-incentive-design/.
[16] *See* David Hurlbut, et al, Electric Vehicle Charging Implications for Utility Ratemaking in Colorado, NREL, slide 10, available at: https://www.nrel.gov/docs/fy19osti/73303.pdf.
[17] Smart Electric Power Alliance, *Residential Electric Vehicle Rates That Work* (November 2019), p. 12. Available at: https://sepapower.org/resource/residential-electric-vehicle-time-varying-rates-that-work-attributes-that-increase-enrollment/.

activity of participating customers.[18] The program would be available to EPE's residential customers that have a qualifying electric vehicle with telematics capabilities or a qualifying networked charging station.[19] EPE proposes to cap participation in the pilot at 880 customers, which represents approximately 10% of the expected EVs in EPE's service territory by the end of 2025.[20]

Participating customers would receive a one-time enrollment incentive of $125, annual $50 incentives for customers that allow EPE's to schedule at least 80% of their charging during off-peak periods, and the opportunity to earn up to $5 in additional incentives per month for participating in low carbon and demand response events.[21]

Q: What are EPE's objectives for the EV Smart Rewards Pilot?

A: EPE states that the purpose of the pilot is to:[22]

1. Evaluate customer acceptance and efficacy of managed charging programs with minimal impact to a customer's driving behavior;
2. Reduce adverse grid impacts related to unmanaged charging to optimize the use of existing infrastructure;
3. Minimize the required investment in additional infrastructure; and
4. Help the Company evaluate the effectiveness of several managed charging strategies (e.g., shifting charging load to off-peak periods, avoidance of timer

[18] Direct Testimony of Angie Rodriguez, p. 13.
[19] *Id.*, p. 14.
[20] *Id.*, p. 15.
[21] *Id.*, p. 14.
[22] *Id.*

peaks, alignment of charging with renewable energy generation, and increase customer engagement with the utility).

Q: Does ev.energy support EPE's proposed EV Smart Rewards Pilot?

A: Yes. ev.energy strongly supports the proposed EV Smart Rewards Pilot. As EV adoption grows, it is critical that utilities begin to implement strategies to properly manage EV charging activity. The continued increase in EV adoption presents a massive opportunity for utilities and grid operators to harness the inherent flexibility of EV charging load to realize various grid benefits. Through this pilot, EPE will proactively prepare for a future in which many of EPE's customers will rely on its services to fuel their daily transportation needs, which will have severe impacts on the grid if not managed effectively.

Conversely, the proper management of EV charging can help utilities realize grid and societal benefits by incentivizing off-peak charging, aligning charging with low-cost and low-carbon generation, avoiding curtailment of renewable generation,[23] placing downward pressure on electricity rates for *all* utility customers,[24] and avoiding costly distribution upgrades,[25] among other benefits.[26] Cumulatively, the benefits realized by

[23] Smart Electric Power Alliance, *A Comprehensive Guide to Managed Charging*, p. 9. Available at: https://sepapower.org/resource/a-comprehensive-guide-to-electric-vehicle-managed-charging/.
[24] Synapse Energy Economics, Electric Vehicles Are Driving Rates Down, p. 1 (June 2023), available at https://www.synapse-energy.com/sites/default/files/Electric%20Vehicles%20Are%20Driving%20Rates%20Down%20Factsheet.pdf.
[25] EPRI Managed EV Charging Software Incubatenergy Labs 2020 Pilot Project Report, p. 2. Available at: https://skipsolabs-epri.s3.amazonaws.com/uploads/content/44bf0c2a83c23c767aa6cf08548c268bb68864ba.pdf.
[26] Anwar, M.B., Muratori, M., Jadun, P., Hale, E., Bush, B., Denholm, P., Ma, O., and Podkaminer, K., 2022, Assessing the value of electric vehicle managed charging: A review of methodologies and results: Energy and Environmental Science, v. 15, p. 466–498, doi: 10.1039/d1ee02206g.

managed charging programs have been shown to consistently provide hundreds of dollars in utility investment cost savings per EV each year.[27]

Further, the National Renewable Energy Laboratory (NREL) and U.S. Department of Energy (US DOE) recently conducted an analysis which assessed the value of EV managed charging.[28] While the results of the study demonstrated significant variability due to the inclusion of programs with vastly different designs (*e.g.*, passive vs. active management) and encompassed examples from utilities with different operational conditions, the analysis provides additional evidence that managed charging programs have the potential to provide significant value to utilities and ratepayers.

Finally, EPE's proposal to evaluate multiple managed charging strategies within the pilot will allow for comparison between various program designs and assess which approaches can realize the greatest benefits for EPE and its customers. These insights can help guide the development of future managed charging programs and ensure that the programs are designed to provide the most value to EPE's customers.

Q: Are there any other components of EPE's proposed Pilot design that you would like to highlight?

A: Yes, ev.energy strongly supports EPE's proposal to utilize both vehicle telematics and networked residential charging stations for the Pilot, allowing for multiple customer participation pathways. This hardware-agnostic approach will advance equity of access by offering multiple channels for different customer profiles to participate.

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[27] https://pubs.naruc.org/pub/32F23B46-1866-DAAC-99FB-FBF37F6CA4C0, *See* Slide 15.
[28] *Id.*; https://www.energy.gov/eere/analysis/assessing-value-electric-vehicle-managed-charging-review-methodologies-and-results; https://pubs.rsc.org/en/content/getauthorversionpdf/d1ee02206g.

Programs that rely on a single type or brand of hardware for customer participation can inadvertently impose social equity barriers, which the inclusion of multiple participations pathways (e.g., networked charging stations and vehicle telematics) can help alleviate. For example, solely utilizing vehicle telematics from a limited subset of auto OEMs as the primary channel for eligibility risks blocking customers who drive lower cost or older EV models that lack telematics (and customers that drive EVs which require additional subscriptions to access their telematics data) from enjoying the financial benefits of participation. Similarly, managed charging programs that solely utilize private Level 2 EVSE can also create equity issues by restricting participation from renters, residents of multi-unit dwellings, and low-income communities. For example, the MIT Science Policy Review found that "lower income households may find the installation of home charging unaffordable, and those in multifamily housing are less likely to have access to charging at home."[29] Rewiring America has further found that 60-70 percent of households have electrical panels with ratings less than the 200 amps needed to fully electrify, with service upgrades costing between $2,000–$30,000.[30]

Instead of relying on a single pathway for participation, we are encouraged that EPE has designed the proposed Pilot in a manner that enables participation from a wide variety of technologies. This approach will advance equity of access by allowing for

[29] *See* August 30, 2021 "A perspective on equity in the transition to electric vehicles", available https://sciencepolicyreview.org/2021/08/equity-transition-electric-vehicles/.
[30] *See* "Circuit Breakers: Upending Electrification Myths", available at https://www.rewiringamerica.org/circuit-breakers-the-grid#12.

participation from a broad range of customer profiles, not just those that can afford newer, high-cost EVs.

Q: Is there a risk of delaying the implementation of EV managed charging programs?

A: Yes, while EVs have the potential to provide massive benefits to utilities and ratepayers, these benefits are largely contingent on charging activity occurring during times that are beneficial to the grid. Conversely, unmanaged charging can intensify negative impacts on the grid if charging activity occurs at times when the grid or distribution system is strained (e.g., periods of peak demand). Accordingly, it is imperative that utilities begin to implement managed charging programs to gain learnings now and assess the best strategies to manage charging activity effectively over the long-term. Pilots, such as what EPE has proposed, allow utilities to develop a key system management tool to ensure that EVs do not increase strain on the grid, and instead provide benefits to all customers through increased energy sales during times the grid is underutilized.

Q: Does EPE currently have any EV load management offerings available to its residential customers?

A: Yes, EPE currently offers a TOU EV Charging Rate (Schedule EVC), which is available to residential and commercial customers for separately metered facilities that are solely used for EV charging.

Q: How is the proposed EV Smart Rewards Pilot different from Schedule EVC?

A: While both the proposed Pilot and Schedule EVC ultimately share a similar goal of shifting EV charging to more beneficial periods, there are a couple of key advantages that the proposed Pilot has over Schedule EVC. Firstly, the proposed EV Smart Rewards Pilot

would allow EPE to actively control participants' charging activity rather than relying on a passive price signal to influence changes in customer charging behavior. As previously discussed, active managed charging programs can realize greater benefits than passive programs (e.g., greater load curtailment, avoidance of timer peaks, etc.) because the utility can directly control participating customers' charging behavior allowing the utility to actively manage load around grid conditions in real-time.

Additionally, Schedule EVC requires the installation of a second meter in order to take service on the rate. EPE has estimated that the cost for customers to install a second meter can be up to $5,000, which is prohibitively expensive for many customers.[31] By contrast, the EV Smart Rewards Pilot avoids the need for a second meter by utilizing the internal metering capabilities embedded in compatible networked EV charging stations and/or vehicle telematics. By eliminating the requirement to install a second meter, participation in an EV managed charging offering will be more widely available to EPE customers and advance equity by reducing financial barriers to participation.

Q: Do you expect the benefits of the EV Smart Rewards Pilot will outweigh its costs?

A: Yes. While I have not undertaken a quantitative analysis, I expect the benefits EPE will realize from actively shifting customers' EV charging load to times when it is most beneficial to the grid will far outweigh the cost of the Pilot. Perhaps more importantly, the Pilot will provide EPE with the opportunity to study the most effective strategies for managing EV charging load, which will inform the development of future managed

[31] Direct Testimony of Manuel Carrasco, pp. 9-10.

charging programs that are available to more customers. The primary purpose of any pilot program should be to ensure that the utility learns effective strategies for future programs. Accordingly, while I expect the financial benefits of the EV Smart Rewards Pilot will outweigh its costs, even if they do not the Commission should find that the learnings EPE will gain from the Pilot justify the Pilot's costs. The Commission can and should apply more rigorous cost-benefit analyses to any future proposals EPE makes for full-fledged managed charging programs that are available to all customers.

Q: Will the EV Smart Rewards Pilot incentivize more customers to adopt EVs?

A: It is worth pointing out that the purpose of this Pilot is not to incentivize EV adoption or support customers looking to purchase or lease an EV. Rather, the EV Smart Rewards Pilot reflects a recognition on EPE's part that the number of EVs in EPE's service territory will continue to grow and that EPE must learn how to manage the substantial new load that those EVs will bring. Left unmanaged, this new EV charging load will trigger the need for grid upgrades for which all customers will pay. By learning to manage EV charging load actively and effectively, EPE can ensure that charging takes place when it is most beneficial to the grid, avoiding the need for costly upgrades and putting downward pressure on rates for all its customers.

Q: What do you recommend regarding EPE's proposed EV Smart Rewards Pilot?

A: I recommend that the Commission approve EPE's proposed EV Smart Rewards Pilot.

III. Conclusion and recommendations

Q: Please summarize your recommendations for the Commission.

A: I recommend that the Commission approve EPE's proposed EV Smart Rewards Pilot as proposed by EPE.

Jared Ballew

Employment History

ev.energy, September 2023 – Present
US Policy Director
Responsible for tracking, monitoring, and analyzing utility regulatory filings across the country in order to develop ev.energy's policy positions and strategy to promote electric vehicle managed charging and V2X solutions for businesses, utilities, and electric vehicle drivers.

ChargePoint, Inc., June 2021 – August 2023
Utility Policy Coordinator
Responsible for tracking, monitoring, and analyzing electric utility regulatory filings to develop ChargePoint's policy positions and strategy to promote electric vehicle charging solutions for businesses, utilities, and electric vehicle drivers.

Iowa Utilities Board, January 2019-June 2021
Utility Analyst/Senior Utility Analyst
Responsible for review, analysis, and development of recommendations for utility regulatory issues and filings. Responsible for engagement with MISO, SPP and OMS on federal/regional policy issues.

Education

Master of Science (M.S.), Geology - Climatology focus (2018)
Iowa State University, Ames, IA

Bachelor of Science (B.S.), Biology and Environmental Science (2015)
Iowa State University, Ames, IA

Publications

Mette, M.J., Whitney, N.M., Ballew, J., Wanamaker, A.D., 2018, Unexpected isotopic variability in biogenic aragonite: A user issue or proxy problem? Chemical Geology, doi:10.1016/j.chemgeo.2018.02.027.

Ballew, J. Refinement and utilization of the marine climate proxy Arctica islandica: An ideal replication strategy for stable isotope studies and an investigation into the shell growth and hydrographic variability of Georges Bank (Northwestern Atlantic), 2018, Iowa State University, Ames, Iowa. Presented at thesis defense, 2018.