Exhibit No. 14

Evergy – Exhibit 14
Testimony of Jason Humphrey
Surrebuttal
File No. EA-2025-0075

Exhibit No.:
Issue: Updates Regarding Planned Resource Additions and Related Cost Issues
Witness: Jason Humphrey
Type of Exhibit: Surrebuttal Testimony
Sponsoring Party: Evergy Missouri West
Case No.: EA-2025-0075
Date Testimony Prepared: May 14, 2025

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO.: EA-2025-0075

SURREBUTTAL TESTIMONY

OF

JASON HUMPHREY

ON BEHALF OF

EVERGY MISSOURI WEST

Kansas City, Missouri

May 2025

Table of Contents

SURREBUTTAL TESTIMONY

OF

JASON HUMPHREY

Case No. EA-2025-0075

I. INTRODUCTION AND EXECUTIVE SUMMARY

Q: Please state your name and business address.

A: My name is Jason Humphrey. My business address is 818 S. Kansas Ave, Topeka, Kansas 66612.

Q: Are you the same Jason Humphrey who filed Direct testimony in this case on November 15, 2024, and Supplemental Direct testimony on February 19, 2025?

A: Yes. I previously submitted Direct and Supplemental Direct testimony on behalf of Evergy Missouri West, Inc. d/b/a Evergy Missouri West ("Evergy Missouri West", "EMW", the "Company") and Evergy Metro, Inc. d/b/a Evergy Missouri Metro ("Evergy Metro" or "EMM") (collectively referred to as the "Applicants" or the "Companies"). The Companies, along with Evergy Kansas Central, Inc. and Evergy Kansas South, Inc. ("Evergy Kansas Central" or "EKC"), are the operating utilities of Evergy, Inc. ("Evergy").

Q: What is the purpose of your Surrebuttal testimony?

A: The purpose of my Surrebuttal testimony is to respond to various witnesses' testimony from the Missouri Public Service Commission Staff ("Staff") set forth in the Staff Report & Recommendation ("Staff Rec."). Additionally, I respond to testimony submitted by Sierra Club, Renew Missouri Advocates ("Renew Missouri"), and the Office of the Public Counsel ("OPC"). Specifically, my Surrebuttal addresses the following: (1) supporting the Tartan factors of "need" and "economic feasibility" pertaining to the Projects; (2)

uncertainty in the domestic and global markets regarding the overall cost of materials; (3) location site analysis of the Projects and the potential for transmission congestion; (4) Evergy's gas procurement strategy; and (5) alternative resource generation assets.

Q: Why is Evergy seeking CCNs for the Projects at this time?

A: As outlined in the Company's Application and Direct Testimony, the pursuit of CCNs for these Projects is a crucial step in addressing the increasing demand for both energy and capacity reliability in the region. The Company is a making a strategic long-term investment in its diverse portfolio of generation resource infrastructure to meet both current and future customer demands. This approach not only guarantees energy security but also aligns with the broader objective of creating a more resilient, reliable, and sustainable energy grid. These projects are a key part of a comprehensive plan to expand generating capacity, which will strengthen the Company's ability to adequately and safely serve its customers while driving regional economic growth. Ultimately, these initiatives are designed to solidify the Company's role in driving growth, securing energy reliability, and fostering long-term prosperity in the region.

II. RESPONSE TO STAFF'S RECOMMENDATION

A. *Tartan*[1] Factor – Need

Q: Does EMW agree with Staff on page 19 that additional capacity is a necessity because the lack of electric service is an inconvenience?

A: Yes. The Projects are essential to address evolving demands and regulatory requirements within EMW's service territory. See Staff Rec. at 9. There has been a significant increase

[1] In re Tartan Energy Co., No. GA-94-127, 1994 WL 762882 (1994).

in large load customers in EMW's service territory, including industrial and commercial entities whose power requirements place considerable demands on existing electrical infrastructure. Id. This surge in load growth necessitates proactive system planning and expansion to ensure continued reliability, capacity, and operational flexibility to satisfy EMW's customers' needs. In parallel, the Southwest Power Pool ("SPP") has recently increased its reserve margin requirements, while re-examining its resource capacity accreditation methodology. These changes obligate load-serving entities like EMW to maintain a larger buffer of accredited capacity to accommodate peak demand and ensure regional grid stability. See Staff Rec. at 14-15. Additionally, long-term uncertainty regarding environmental compliance is always a risk to aged, less efficient and higher emitting portions of Evergy's generation fleet. Environmental rules could lead to the retirement or reduced operation of certain generation assets, thereby diminishing available resource margins and increasing the urgency to develop highly efficient and flexible dispatchable resources, just like the Projects proposed in this case. As discussed herein, the Projects' advanced technology permits the facilities to operate during peak demand and when called on by market conditions. See J. Humphrey Direct at 14-15. The Projects are ideally situated to be frequently dispatched in the SPP market in a wide range of operating scenarios.

Q: Is Evergy Missouri West requesting additional CCNs through other proceedings in furtherance of the Preferred Plan consistent with the Company's 2024 IRP?

A: Yes. The CCNs for the Projects are part of a holistic approach by the Company to provide safe and adequate electric service through a diversified portfolio of generation assets. As discussed in Evergy's Application and Direct, and Staff's Recommendation, EMW

recently acquired approximately 143 megawatts ("MW") of the Dogwood Energy Facility ("Dogwood") natural gas combined cycle unit, and in the near future EMW is planning to construct two (2) solar facilities both of are anticipated be in-service by the summer of 2027. See App., No. EA-2024-0292; Staff Rec. at 19.

Q: Did Evergy Missouri West factor Dogwood's capacity accreditation into the Company's 2024 IRP?

A: Yes. Evergy agrees with Staff's recommendation that "EMW will not receive its total share of [the 143 MW of] accredited capacity of Dogwood until 2031." See Staff Rec. at 19. This was known to EMW and disclosed to the Commission in docket No. EA-2023-0291. Thus, EMW factored Dogwood's capacity into its 2024 Triennial IRP, 2025 Annual IRP Update, and the CCN Supplement Direct modeling analysis. See generally C. VandeVelde Supp. Direct.

Q: Why is it important for the Company to continue to execute on this portfolio of projects as part of the Preferred Plan identified in the 2024 Triennial IRP?

A: The 2024 IRP Preferred Plan portfolio has been shown to be very robust against the many uncertain futures evaluated in the IRP. Importantly, these highly efficient, modern, firm, and dispatchable assets have been a key part of this lowest cost portfolio and continue to provide flexible energy and capacity in support of an "all of the above" generation portfolio strategy. See C. VandeVelde Direct at 6. The Projects offer EMW customers the opportunity to benefit from modern dispatchable power, consistent with the assumptions made in the IRP. In fact, given the capacity benefit of these natural gas plants, it is imperative that Missouri West start construction in a timely manner to ensure these

resources are available to serve customers and be a part of the generation mix that supports EMW's compliance with the SPP's resource adequacy rules.

B. *Tartan* Factor – Economic Feasibility

Q: Are the Projects economically feasible, as required by the *Tartan* factors?

A: Yes. As described in the Supplemental Direct testimony of Cody VandeVelde, the Projects are wholly consistent with the Preferred Plan portfolio for Evergy Missouri West. The portfolio went through a rigorous IRP process and was evaluated based on the minimization of the net present value of the revenue requirements ("NPVRR") and its impact on for Evergy Missouri West's customers.

Furthermore, as described in the Direct testimony of J Kyle Olson, the Projects have gone through a competitive, multi-step process including competitive solicitations for an Owner's Engineer ("OE"), Power Island Equipment ("PIE"), Generator Step-Up ("GSU") transformer, and an Engineering, Procurement, and Construction ("EPC") contractor. It is important to note that no natural gas plant bids were received as a part of the 2023 all-source Request for Proposal ("RFP").

Q: Does EMW agree with Staff on pages 26 and 27 that the Company will need to acquire additional generation resources, which would impact the Projects' economic feasibility, if the SPP files tariffs to implement winter resource adequacy requirements?

A: No. The addition of incremental units, which are contemplated in the IRP do not impact the economic feasibility of these additions. The Projects are part of an overall portfolio identified in the Preferred Plan that is designed to provide safe and adequate service in compliance with the SPP's resource adequacy requirements. As demonstrated in the Application and supporting witness testimony, the Company requires the capacity provided

by the Projects to meet the SPP tariff rules. Even if the Company potentially requires additional capacity to meet the heightened resource adequacy requirements recently established by the SPP, then this increased necessity would, in turn, enhance the economic feasibility of the Projects.

This is particularly relevant when considering current market uncertainties, such as the volatility surrounding steel and aluminum tariffs, as well as the "Liberation Day" tariffs, which have the potential to impact construction and material costs. See J. Humphrey Supp. Direct 6-7. Thus, obtaining CCNs for the Projects now may offer cost advantages by mitigating future price escalation risks and ensuring the timely availability of critical infrastructure, because the demand forecasts and regulatory obligations justify the investment, as demonstrated by EMW's Supplemental analysis. Id.

Q: Is there uncertainty in the domestic and global markets regarding the overall cost of materials, particularly steel and aluminum, to build the gas facilities, as Staff suggests on page 30?

A: Yes, as there is uncertainty with any multi-year, major construction project. As discussed in my Supplement Direct, there is overall cost uncertainty in the market because of the federal and legislative actions, mainly involving tariffs. See J. Humphrey Supp. Direct at 6-7. The 25% tariffs on steel and aluminum have now come into effect. Id. "The new tariffs increase input costs, cause shortages and supply chain disruptions, and escalate the risk of disputes involving cost allocation, project delays, scope changes, and performance defenses such as force majeure, change in law, or impracticability. These tariffs and other federal actions have the potential to impact the final price of the Projects during the five-to-six-year development process that is required for these power plants to reach

commercial operation." Id. Thus, while favorable contracts and delivery timelines are still available at pricing levels that are consistent with our estimates, now is the essential time to approve the CCNs for the Projects. Uncertainty in markets manifests itself as risk, and risk always carries a price. Because of the uncertainty caused by the tariffs, as well as the demand for natural gas facilities globally, it is important to secure these projects at this time before additional risk is priced in.

Q. Did EMW perform location-specific analysis for the Projects?

A: Yes. See Staff Rec. at 34-35. Staff seemed to ignore this exact discussion on page 21 of my Direct and pages 12-17 of Evergy witness J Kyle Olson's Direct. See Staff Rec. at 34-35. In 2023, EMW, with help from Power Engineers ("Power"), "conducted an extensive siting study for the purpose of assisting Evergy in locating, investigating, and evaluating potential sites for" the Projects. See J. Humphrey Direct at 12. As discussed by J Kyle Olson, EMW selected sites based on technical factors including minimization of transmission upgrades, access to natural gas pipelines, water and land access, and transmission injection capability. See K. Olson Direct at 12-17; J. Humphrey Direct at 21.

When siting a plant, access to the necessary infrastructure is the most critical evaluation criteria for the plant. Ultimately without access to land, the electrical grid, and the natural gas infrastructure needed, EMW fundamentally cannot construct, manage, or operate a generation asset. When Evergy conducted the siting study in 2023, it was clear that infrastructure access was going to be a large, limiting factor in site selection. However, given the limited availability of sites where a modern and efficient combustion turbine could be located, Evergy focused efforts on the known, evaluable siting criteria and did not focus on unknown or speculative variables. Such speculative variables include potential

fluctuations in market prices, grid reliability, or the changes in generation resources throughout the SPP. The unknown or speculative variables all impact market price assumptions. However, and most importantly, it remains Evergy's obligation to provide safe and adequate service that is compliant with the SPP's resource adequacy requirement.

Q: Did EMW consider the cost of procuring firm transportation of natural gas for the Projects when evaluating their economic feasibility?

A: Yes. Staff's statement that EMW's natural gas procurement is "still largely uncertain" is simply untrue. See Staff Rec. at 34-35; see also W. Jones Direct at 4, 6-12 (Renew Missouri). As discussed by Evergy witness Cody VandeVelde, low, medium, and high natural gas prices were evaluated in EMW's 2024 Triennial IRP and the Company's 2025 Annual IRP Update. See EMW 2024 Triennial IRP, Volume 4 at 2; EMW's 2025 Annual IRP Update at 17. Additionally, EMW is pursuing "firm fuel transport from the natural gas pipelines for the combined cycle sites as well as onsite storage of diesel as a backup fuel for the simple cycle site." See J. Humphrey Direct at 9-10; see also K. Olson Direct at 34-35. "Evergy plans to reserve firm transport for the entirety of the gas supply needed for the combined cycles… [which] will allow Evergy's gas to flow when it needed for" its customers. Id. Discussions with natural gas pipeline companies informed the IRP planning assumptions used to evaluate the cost of procuring firm transportation of natural gas for these facilities. See EMW's 2025 Annual IRP Update at Table 6. This strategy to procure firm fuel will be a key component in ensuring the projects are able to meet the fuel assurance portions of SPP Performance Based Accreditation ("PBA") methodology for firm, dispatchable power.

III. RESPONSE TO OPC – J. SEAVER

Q: Do you agree with OPC on pages 6 and 7 of Mr. Seaver's testimony that the final cost of the Projects is uncertain because of domestic and global markets for materials?

A: No, not entirely. The projects come with substantial competitive procurements and market bids and competent testimony and evidence supporting the price estimates used in this case. However, as discussed herein, the imposition of tariffs on steel and aluminum introduces cost pressures and supply chain uncertainties that directly affect the overall economics of the Projects. These materials constitute critical components in the construction of power plants, generator lead lines, substations, and related facilities, meaning fluctuations in their availability and price can lead to substantial increases in capital expenditures. Moreover, the tariffs may disrupt supply chains, extend procurement timelines, and contribute to project delays. As such, the tariffs represent not only a material cost consideration but also a broader macroeconomic factor reinforcing the urgency and prudence of advancing the Projects without delay. See J. Humphrey Supp. Direct at 6-7.

Additionally, OPC's statement is entirely speculation. The Projects' cost estimates reflect the appropriate amount of contingency at this stage in their development. While the increased risk and uncertainty caused by the tariff announcements is a factor that will ultimately impact the projects, Evergy and its partners will continue to have price and schedule impact minimization at the forefront as these projects are ultimately brought to market. These uncertainties and unknowns are the reality in any major construction project. In some ways, the fact that we know this is a dynamic environment at the onset of the Projects is an advantage versus a tariff announcement two years in. Tariffs are an item that

is already on the risk parameter for the Projects and will remain a focus throughout procurement activity.

Q: Is OPC properly applying the Commission's prudence standard on pages 16 to 20 when stating that the Company could have purchased the Projects' technology years ago when it was less expensive, thus the Company is imprudent?

A: No. As discussed in Evergy witness Kevin Gunn's Direct, Supplemental Direct, and Surrebuttal, the Commission has all the necessary information to determine decisional prudence for the Projects. OPC is re-asserting the previously rejected argument that EMW is imprudent for relying on the SPP market for the past decade and not building resource generation assets to supply its customers with energy. This contention, as argued recently in Report & Order at 12, In re Evergy Missouri West Eleventh Prudence Review FAC, File No. EO-2023-0277 (Aug. 7, 2024), is entirely based on improper hindsight. EMW's reliance on the SPP market at the time was not, and has not been considered imprudent, as determined by the Commission. Relying on historical cost data, which is no longer commercially available or reflective of current markets today, and then comparing it to today's market prices, is not an appropriate or reliable basis for assessing whether the capital investment decision for the Projects is prudent. "While some may argue the Company should have started yesterday and others may argue to wait for tomorrow, the reality is the best time to start is now while EMW has time to take a thoughtful, measured, and planned approach." J. Humphrey Direct at 10.

IV. RESPONSE TO SIERRA CLUB – M. GOGGIN

Q: Did the IRP account for wind, solar, battery, or other generation or energy storage alternatives when compared to the Projects, as Mr. Goggin discusses on pages 44 and 45?

A: Yes. Mr. Goggin simply ignores EMW's 2024 Triennial IRP, the Company's CCN Supplemental Direct modeling, and the 2025 Annual IRP Update, as all the models included alternatives resources, such as wind, solar, batteries, market purchases, or any other alternative. Batteries were a key resource type evaluated in all of these models and capacity expansion did not select them as they did not result in a plan optimized for the lowest NPVRR for EMW's customers. As discussed by Cody VandeVelde in his prior and Surrebuttal testimony, EMW needs "generation," as determined by the IRP, and batteries do not produce energy but rather store energy, with short-term duration to inject the energy back to the grid, which limits their reliability benefits in sustained peak conditions. See EMW 2024 Triennial IRP, Volume 4 at 58; M. Goggin Rebuttal at 30 (Sierra Club). Additionally, Mr. Goggin's suggestion that EMW should build solar facilities simply ignores EMW's current proceeding No. EA-2024-0292 where the Company is requesting CCNs for two solar facilities with approximately 165 MW of combined capacity, which were also determined in the 2024 IRP.

Q: Do the Projects increase EMW's dependence on natural gas, thus imposing an economic and reliability risk on ratepayers, as Sierra Club suggests throughout pages 50 to 55?

A: No. The Projects will have firm fuel supply, either through firm fuel transport contracts, or through on-site liquid fuel storage. These units will be available to be called upon when

they are needed by our customers. Natural gas supports Evergy's "all of the above" strategy. These projects provide energy to customers at times when the sun is not shining, and the wind is not blowing. Evergy fully endorses the benefits of a diversified fleet, and the Projects are part of that diversity along with the solar and wind planned over the next few years.

Q: Did EMW account for the gas plants capacity accreditation in line with SPP policy?

A: Yes. As further discussed in Mr. VandeVelde's Surrebuttal testimony, EMW followed the SPP procedure for performance-based accreditation ("PBA") and fuel assurance as they were known at the time. This implementation of PBA is an important step in ensuring that these plants contribute to an EMW that is able to meet its SPP resource adequacy requirements.

Q: Sierra Club witness Mr. Goggin states in Section 2 of his Rebuttal that EMW ignores transmission congestion in the SPP that "will inhibit" the economic operation of the Viola and McNew gas plants in Kansas, as well as the Mullin Creek #1 gas plant in Missouri. Do you agree?

A: No, I do not agree. The SPP Definitive Interconnection System Impact Study ("DISIS") process will identify both the interconnection facilities where the project will tie into the high voltage transmission grid as well as network upgrades which will allow the energy generated by the plants to flow in the SPP region. With the network upgrades identified and completed as part of the DISIS project, the grid will be responsive to the new generation resources provided by these three plants and allow them to support the firm, dispatchable power needs for the region. Mr. VandeVelde also addresses transmission congestion issues raised by Mr. Goggin in his Surrebuttal testimony.

V. RESPONSE TO RENEW MISSOURI – W. JONES

Q: Should EMW commit to using battery storage instead of the Projects, as Mr. Jones suggest on pages 5, 36-37, 45, and 49 of his testimony?

A: No. As discussed herein and in Cody VandeVelde's Surrebuttal, the 2024 Triennial IRP and 2025 Annual IRP Update included batteries in its alternative resource plan modeling, but the modeling determined the Projects as the most prudent resources to satisfy EMW customers' need.

Q: Are the Projects' natural gas procurement strategy comparable to Evergy's Hawthorn Station ("Hawthorn"), as Mr. Jones suggests pages 22 through 25?

A: No. The Hawthorn Station's role in Evergy's generation fleet is not comparable to the Projects' combined cycle combustion gas turbines ("CCGT"). Evergy Metro does not have the same generation fleet as EMW, and the fuel strategy for Hawthorn reflects its role in Metro's fleet. As EMW units, the Projects would not have the same fuel procurement strategy as Hawthorn, nor should they as they will serve differing roles for their respective utilities. The future Evergy natural gas procurement strategy that will be applied to the new CCGTs is currently being developed but is expected to be notably different than how natural gas is procured at Hawthorn today. Mr. Jones states: "During the period from June 2022 through July 2024, 100% of gas purchased for Hawthorn was reported as being bought on advanced contracts." See N. Jones Direct at 23. However, nearly 100% of gas purchased for Hawthorn is purchased on a next-day or same-day basis. It is possible that Mr. Jones is confusing transportation contracts with supply contracts. However, even excluding that fact, comparing the new CCGTs to Hawthorn is like comparing apples to oranges.

First, the 5-year average net capacity factor of Hawthorn 6/9 is well below 20%, because Hawthorn 6/9 is not available in the winter months. Hawthorn is not being winterized and there is unavailability of firm natural gas transport on the severely constrained line segment 235 on the Southern Star system. To illustrate the point, the entire Hawthorn site has a max daily quantity capability of 232,000 Dth/day if running on natural gas. Total available annual firm transport MDQ held at Hawthorn is ~42,000 Dth/day, or about 18% of maximum capability. In contrast, the expectation is that full firm transport will be available at the Projects' new CCGT sites, plus the units will be designed to be able to operate in the winter months. Thus, the Projects' net capacity factor will be significantly higher than Hawthorn's natural gas generation. Additionally, the technology difference between Hawthorn and the new CCGTs results in a significantly different heat rate efficiency. This difference in efficiency will further drive a completely different operation profile of the new CCGTs when compared to Hawthorn.

Q: Will EMW's Gas Procurement Plan reduce exposure to the volatility of natural gas spot prices, as Mr. Jones suggests on pages 29 and 30?

A: Yes. EMW's gas procurement plan, which will be highly subject to stakeholder and Commissioner scrutiny, permits Evergy to "reserve firm transport for the entirety of the gas supply needed for the combined cycle plants." Furthermore, Evergy anticipates using both financial instruments and firm physical purchases to find the right balance of spot versus long purchases of fuel, just as Evergy traditionally has for our coal and nuclear fleets. Thus, implementing a gas procurement plan will help mitigate some of the market price volatility traditionally seen in natural gas pricing when compared to short term/spot purchasing only. See J. Humphrey Direct at 9-10; K. Olson Direct at 34-35.

Additionally, the Projects' combined cycle combustion turbines' advanced technology significantly increases the high-efficiency baseload of the Company's capacity generation and uses the minimum amount of fuel needed for a specific amount of energy need. See J. Humphrey Direct at 14-15. The turbines "have better heat rates and lower capital costs per kilowatt of capacity" and have the "greatest operational flexibility with emissions compliant minimum loads down to 35% of output for the gas turbine. This wide operating range and flexibility in the market is also of critical importance to Evergy as the makeup of generators on the grid incorporates more intermittent resources." Id.

Q: Please summarize your testimony

A: The Projects are necessary to meet evolving regulatory requirements, and growing energy demands in EMW's service territory. EMW requires new generation, as identified in the IRP, and batteries store rather than produce energy. The Company strongly considered the siting of the plants including the pursuit of firm service through the SPP DISIS process, and the combined cycle combustion turbines utilize advanced technology to enhance high-efficiency baseload capacity.

In sum, the load growth from an increase in large load customers is placing heightened demand on existing transmission and distribution infrastructure, while steel and aluminum tariff volatility, supply chain disruptions, and allocation challenges could impact construction costs—all of these factors underscore the urgency of securing CCNs now.

Q: Does that conclude your testimony?

A: Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of Evergy Missouri West, Inc. d/b/a Evergy Missouri West and Evergy Metro, Inc. d/b/a Evergy Missouri Metro for Permission and Approval of a Certificate of Public Convenience and Necessity For Natural Gas Electrical Production Facilities	)))))))	Case No. EA-2025-0075

AFFIDAVIT OF JASON HUMPHREY

STATE OF MISSORUI)
) ss
COUNTY OF JACKSON)

Jason Humphrey, being first duly sworn on his oath, states:

1. My name is Jason Humphrey and I am employed by Evergy Metro, Inc. as Vice President – Generation Development.

2. Attached hereto and made a part hereof for all purposes is my Surrebuttal Testimony on behalf of Evergy Missouri West consisting of fifteen (15) pages, having been prepared in written form for introduction into evidence in the above-captioned docket.

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.

Jason Humphrey

Subscribed and sworn before me this 14th day of May 2025.

Notary Public

My commission expires: April 26, 2029

ANTHONY R WESTENKIRCHNER
NOTARY PUBLIC - NOTARY SEAL
STATE OF MISSOURI
MY COMMISSION EXPIRES APRIL 26, 2029
PLATTE COUNTY
COMMISSION #17279952