### Public Version

Exhibit No.:

Issue: Integrated Resource Planning and 2024

Preferred Plans of Evergy Missouri West and

Evergy Missouri Metro

Witness: Cody VandeVelde

Type of Exhibit: Supplemental Direct Testimony

Sponsoring Party: Evergy Missouri West and Evergy Missouri

Metro

Case No.: EA-2025-0075

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### MISSOURI PUBLIC SERVICE COMMISSION

**CASE NO.: EA-2025-0075** 

### SUPPLEMENTAL DIRECT TESTIMONY

OF

### **CODY VANDEVELDE**

ON BEHALF OF

### EVERGY MISSOURI WEST AND EVERGY MISSOURI METRO

Kansas City, Missouri February 2025

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| 1  |    | I. <u>INTRODUCTION AND EXECUTIVE SUMMARY</u>   |  |  |  |  |  |
|----|----|--|--|--|--|--|--|
| 2  | Q: | Are you the same Cody VandeVelde who filed direct testimony in this case on                |  |  |  |  |  |
| 3  |    | November 15, 2024?   |  |  |  |  |  |
| 4  | A: | Yes. I previously submitted direct testimony on behalf of Evergy Missouri West, Inc.       |  |  |  |  |  |
| 5  |    | ("Evergy Missouri West," "EMW," or "West") and Evergy Metro, Inc. ("Evergy Missouri        |  |  |  |  |  |
| 6  |    | Metro," "EMM," or "Metro") (collectively the "Applicants" or "Companies"). The             |  |  |  |  |  |
| 7  |    | Applicants, along with Evergy Kansas Central, Inc. and Evergy Kansas South, Inc.           |  |  |  |  |  |
| 8  |    | ("Evergy Kansas Central" or "EKC"), are the operating utilities of Evergy, Inc. ("Evergy") |  |  |  |  |  |
| 9  | Q: | What is the purpose of your supplemental direct testimony?                                 |  |  |  |  |  |
| 10 | A: | I will discuss how EMW and EMM each conducted updated supplemental Integrated              |  |  |  |  |  |
| 11 |    | Resource Planning ("IRP") type model runs and analysis. I will explain how the expected    |  |  |  |  |  |
| 12 |    | on-going resource adequacy needs and load increase in Evergy Missouri West's service       |  |  |  |  |  |
| 13 |    | territory support Evergy's decision to allocate to EMW a 50% interest in the McNew         |  |  |  |  |  |
| 14 |    | Generating Station ("McNew") in Reno County, Kansas.                                       |  |  |  |  |  |
| 15 |    | I will also review the supplemental resource planning results which show a                 |  |  |  |  |  |
| 16 |    | continuing need for Evergy Missouri West to construct, operate, and own a 50% interest     |  |  |  |  |  |
| 17 |    | in the Viola Generating Station ("Viola") in Sumner County, Kansas, as well as 100% of     |  |  |  |  |  |
| 18 |    | the Mullin Creek #1 Generating Station ("Mullin Creek #1") in Nodaway County,              |  |  |  |  |  |
| 19 |    | Missouri.  |  |  |  |  |  |

| 1              | Q: | Generally, what adjustments have been made to the resource planning model since  |  |  |  |  |  |
|----------------|----|--|--|--|--|--|--|
| 2              |    | the filing of your Direct Testimony in November that update the 2024 Triennial IRF   |  |  |  |  |  |
| 3              |    | Report of Evergy Missouri West?  |  |  |  |  |  |
| 4              | A: | As I discuss below in greater detail, the adjustments to the IRP model and its analysis will   |  |  |  |  |  |
| 5              |    | be contained in the Annual Update to EMW's 2024 Triennial IRP Report that will be filed  |  |  |  |  |  |
| 6              |    | with the Commission in March of 2025. Evergy Missouri Metro will also file an annua  |  |  |  |  |  |
| 7              |    | update to its 2024 Triennial IRP Report at that time. The major changes in these reports   |  |  |  |  |  |
| 8              |    | reflect aligning future demand-side management ("DSM") planning assumptions with the   |  |  |  |  |  |
| 9              |    | 2024 outcomes of the Missouri Energy Efficiency Investment Act ("MEEIA") Cycle 4   |  |  |  |  |  |
| 10             |    | Commission Order, updating base retail load forecasts for EMW and EMM that assess new  |  |  |  |  |  |
| 11             |    | large customer loads, reflecting recent revisions to the Planning Reserve Margins and  |  |  |  |  |  |
| 12             |    | performance-based accreditation assumptions of Southwest Power Pool, Inc. ("SPP"), and   |  |  |  |  |  |
| 13             |    | updating construction costs of the Viola and McNew combined-cycle gas turbined   |  |  |  |  |  |
| 14             |    | ("CCGT") generating stations, as well as the Mullin Creek #1 simple-cycle gas turbine  |  |  |  |  |  |
| 15             |    | ("SCGT") unit (collectively, the "Projects").  |  |  |  |  |  |
| 16<br>17<br>18 | II | II. UPDATES TO THE 2024 TRIENNIAL IRP REPORT AND SUPPORT FOR ALLOCATING A 50% INTEREST IN MCNEW TO EVERGY MISSOURI WEST UNDER THE CCN RULE AND THE TARTAN FACTORS <sup>1</sup> |  |  |  |  |  |
| 19             | A  | . CCN Rule   |  |  |  |  |  |
| 20             | Q: | Which portion of the Commission's CCN rule applies to the IRP process?   |  |  |  |  |  |
| 21             | A: | Section (6)(G) of the CCN Rule requires a "description of how the proposed asset relates   |  |  |  |  |  |
| 22             |    | to the electric utility's adopted preferred plan" under the Commission's IRP Rule in   |  |  |  |  |  |
| 23             |    | Sections 22.010 through 22.080, 20 Code of State Regulations (CSR) 4240. Evergy witness  |  |  |  |  |  |

<sup>&</sup>lt;sup>1</sup> <u>In re Tartan Energy Co.</u>, No. GA-94-127, 1994 WL 762882 (Mo. P.S.C. 1994).

| 1  |    | Kevin Gunn summarized the CCN Rule in his Direct Testimony at pages 14-15, as well as |  |  |  |  |  |
|----|----|---|--|--|--|--|--|
| 2  |    | in his Supplemental Direct Testimony in Section III(A) regarding the CCN Rule.        |  |  |  |  |  |
| 3  | Q: | Have you previously described the IRP process in Missouri?                            |  |  |  |  |  |
| 4  | A: | Yes. As I discussed in my initial Direct Testimony on pages 3-5, the IRP process is   |  |  |  |  |  |
| 5  |    | conducted pursuant to the Commission's Electric Utility Resource Planning Rule cited  |  |  |  |  |  |
| 6  |    | above. The results that I presented in my Direct Testimony were based on the 2024     |  |  |  |  |  |
| 7  |    | Triennial IRP Reports of EMW and EMM filed on April 1, 2024, which contained the      |  |  |  |  |  |
| 8  |    | Preferred Plans of each utility.  |  |  |  |  |  |
| 9  | Q: | Please outline the different resource planning modeling exercises that have been      |  |  |  |  |  |
| 10 |    | completed to support testimony in this case and any previous or upcoming IRP filings. |  |  |  |  |  |
| 11 | A: | In general, there will have been four resource planning modeling exercises for EMW    |  |  |  |  |  |
| 12 |    | between the 2024 Triennial IRP and the planned 2025 Annual IRP update next month.     |  |  |  |  |  |
| 13 |    | 1) The "2024 Triennial IRP" model that was the basis of the 2024 IRP filing.          |  |  |  |  |  |
| 14 |    | 2) The "CCN Direct" modeling analysis that is described in my Direct                  |  |  |  |  |  |
| 15 |    | Testimony filed in November 2024.   |  |  |  |  |  |
| 16 |    | 3) The "CCN Supplemental Direct" modeling analysis which is described in              |  |  |  |  |  |
| 17 |    | detail in this Supplemental Direct Testimony.   |  |  |  |  |  |
| 18 |    | 4) The "2025 Annual IRP Update" model that will be the basis of the Annual            |  |  |  |  |  |
| 19 |    | IRP update planned for filing in March 2025.  |  |  |  |  |  |

| 1  | Q: | Will the CCN Supplemental Direct modeling adjustments be consistent with the 2025           |  |  |  |
|----|----|---|--|--|--|
| 2  |    | Annual IRP Update model?  |  |  |  |
| 3  | A: | Yes. Evergy expects the modeling assumptions used for the CCN Supplemental Direct           |  |  |  |
| 4  |    | analysis to be consistent with modeling assumptions in the upcoming 2025 Annual IRP         |  |  |  |
| 5  |    | Update filing.  |  |  |  |
| 6  | Q: | What considerations did Evergy contemplate as you updated the resource planning             |  |  |  |
| 7  |    | model for the CCN Supplemental Direct analysis?   |  |  |  |
| 8  | A: | Evergy conducted an in-depth analysis of the need of Evergy Missouri West, as well as its   |  |  |  |
| 9  |    | other utilities, for physical capacity and physical energy to be able to respond to current |  |  |  |
| 10 |    | and projected significant increases in economic development in both Missouri and Kansas     |  |  |  |
| 11 |    | related to new manufacturing facilities, data centers, and other business expansion. This   |  |  |  |
| 12 |    | was a continuation of the framework of analysis that I generally described in my Direct     |  |  |  |
| 13 |    | Testimony on pages 15-16. We continued to analyze the level of load growth in EMW's         |  |  |  |
| 14 |    | service territory and the supply-side and demand-side resource options available to respond |  |  |  |
| 15 |    | to these developments. Evergy also incorporated the effect of SPP's increased planning      |  |  |  |
| 16 |    | reserve margin requirements and resource accreditation calculations, as well as flexibility |  |  |  |
| 17 |    | in retirement plans of our aging coal fleet.  |  |  |  |
| 18 | Q: | What are the major changes in assumptions and other adjustments that Evergy made            |  |  |  |
| 19 |    | to the CCN Supplemental Direct model compared to the 2024 Triennial IRP?                    |  |  |  |
| 20 | A: | There were four major changes in assumptions. As described earlier, the major changes       |  |  |  |
| 21 |    | include: (1) alignment of DSM profiles to recent Commission orders regarding MEEIA          |  |  |  |
| 22 |    | Cycle 4, (2) assessment of the SPP's most recent resource adequacy requirements, (3)        |  |  |  |

| 1  |    | updated load forecasts, and (4) updated construction costs and attributes of combined-cycle |  |  |  |  |  |  |  |
|----|----|---|--|--|--|--|--|--|--|
| 2  |    | and simple-cycle natural gas generation resources.  |  |  |  |  |  |  |  |
| 3  | Q: | What demand-side management model changes were included in the CCN                          |  |  |  |  |  |  |  |
| 4  |    | Supplemental Direct model?  |  |  |  |  |  |  |  |
| 5  | A: | EMW's 2024 Triennial IRP selected the RAP+2 level of demand-side management                 |  |  |  |  |  |  |  |
| 6  |    | ("DSM") for its Preferred Plan. Since filing that IRP, EMW received a Commission order      |  |  |  |  |  |  |  |
| 7  |    | in its MEEIA Cycle 4 case which set a budget for a total DSM capacity for 2025-2027 that    |  |  |  |  |  |  |  |
| 8  |    | was less than the RAP+ DSM profile. To best align planning parameters, the Company          |  |  |  |  |  |  |  |
| 9  |    | decided to perform analysis for purposes of this CCN case with DSM levels in 2028 and       |  |  |  |  |  |  |  |
| 10 |    | beyond equal to the demand response that is approved in 2027 of the 2024 MEEIA Cycle        |  |  |  |  |  |  |  |
| 11 |    | 4 case.   |  |  |  |  |  |  |  |
| 12 | Q: | How did the Company incorporate SPP's latest resource adequacy requirements into            |  |  |  |  |  |  |  |
| 13 |    | the CCN Supplemental Direct modeling?   |  |  |  |  |  |  |  |
| 14 | A: | The Company updated resource planning assumptions to include the latest indication from     |  |  |  |  |  |  |  |
| 15 |    | SPP. Specifically, the summer 2029 Planning Reserve Margin ("PRM") was set to a level       |  |  |  |  |  |  |  |
| 16 |    | adequate to cover the SPP requirement of 17% and the winter 2029 PRM was set to cover       |  |  |  |  |  |  |  |
| 17 |    | the 38% SPP requirement. Additionally, the Company updated accredited capacity values       |  |  |  |  |  |  |  |
| 18 |    | to reflect the latest indication from SPP on Performance-Based Accreditation ("PBA") and    |  |  |  |  |  |  |  |
| 19 |    | Effective Load Carrying Capability ("ELCC") methodology <sup>3</sup> .                      |  |  |  |  |  |  |  |

 $<sup>^2</sup>$  Realistically Achievable Potential Plus.  $^3$  An update on SPP's latest resource adequacy provisions can be found in SPP's initial brief filed on February 18,

<sup>2025,</sup> in FERC Docket Nos. ER24-1317-000 and ER24-2953-000: https://spp.org/documents/73309/20250218 spp%20initial%20brief%20to%20order%20initiating%20hearing er24-1317%20and%20er24-2953.pdf

| 1 | Q: | How did the Company update the load forecast for the resource planning model that    |
|---|----|--|
| 2 |    | supports this CCN Supplemental Direct testimony?                                     |
| 3 | A: | The Company updated EMW's and Evergy Metro's base load forecast as it normally does. |

Q:

A:

This is a process that is done on an on-going basis, but at least annually as the Company adjusts future expectations for planning purposes. In addition to the normal base load forecast update, Evergy also included a higher level of economic development to include new large load opportunities. The new large load profile ramp included in the CCN Supplemental Direct modeling was informed by current discussions with prospective new large load customers.

# What were the other CCN Supplemental Direct model adjustments that Evergy performed in order to refresh and update the 2024 Triennial IRP reports for Evergy Missouri West and Evergy Metro?

The Company studied the optionality around market capacity and delaying a fossil unit retirement that was included as a placeholder coal retirement in EMW's 2024 Triennial IRP Preferred Plan. Evergy expects higher levels of market capacity options in SPP between 2026 – 2030 as compared to what was anticipated in the 2024 IRP model. As a result, Evergy has loosened the market capacity constraint in the supplemental IRP model in the near-term. The Company also studied the impact of converting the placeholder coal retirement planned for 2030 in the 2024 Triennial IRP to a unit extension and full conversion to natural gas.

| 1  | Q:  | What was the impact to EMW of delaying this plant retirement and fully converting            |  |  |  |  |
|----|---|--|--|--|--|--|
| 2  |   | to natural gas?  |  |  |  |  |
| 3  | A:  | Generally, by converting the unit to natural gas at the beginning of 2031 and extending the  |  |  |  |  |
| 4  |   | retirement date to 2039, rather than implementing the 2030 placeholder retirement that was   |  |  |  |  |
| 5  |   | outlined in the 2024 Triennial IRP, EMW is able to retain its 8% share, or approximately     |  |  |  |  |
| 6  |   | 50 MW, of capacity and energy from the unit over the 2031-2039 time period.                  |  |  |  |  |
| 7  | Q:  | In your Direct Testimony you indicated that Evergy expected that the second half of          |  |  |  |  |
| 8  |   | the McNew facility may be allocated not to EKC, but to an Evergy affiliate. What was         |  |  |  |  |
| 9  |   | the ultimate decision regarding the appropriate allocation of the second 50% of the          |  |  |  |  |
| 10 |   | McNew facility?  |  |  |  |  |
| 11 | A: As discussed in the Supplemental Direct Testimony of Kevin Gunn, Evergy made |  |  |  |  |  |
| 12 |   | decision to allocate the second 50% of the McNew facility and its associated costs to EMW.   |  |  |  |  |
| 13 | Q:  | Were you involved in the discussions and deliberations leading to that decision?             |  |  |  |  |
| 14 | A:  | Yes, I was involved along with a number of other leaders within the Company.                 |  |  |  |  |
| 15 | Q:  | Why was the decision made to allocate the second 50% of the McNew facility to                |  |  |  |  |
| 16 |   | EMW?   |  |  |  |  |
| 17 | A:  | Evergy's decision-making process is laid out in the Direct Testimony and Supplemental        |  |  |  |  |
| 18 |   | Direct Testimony of Kevin Gunn. It is also addressed to some degree in my Direct             |  |  |  |  |
| 19 |   | Testimony. Based on a number of considerations and factors related to regional resource      |  |  |  |  |
| 20 |   | adequacy, expected load and demand increases, and relative need among the possible           |  |  |  |  |
| 21 |   | candidates for allocation of the second 50% of the McNew plant, Evergy determined that       |  |  |  |  |
| 22 |   | EMW is the appropriate utility affiliate to take on this generation asset and its associated |  |  |  |  |
| 23 |   | costs.   |  |  |  |  |

| 1  | Q: | Did the Company consider any specific factors or conditions in making this decision?          |  |  |  |  |  |
|----|----|---|--|--|--|--|--|
| 2  | A: | As stated in Mr. Gunn's Supplemental Direct Testimony, and consistent with the general        |  |  |  |  |  |
| 3  |    | decision-making principles laid out at the time the Application was filed in this case, the   |  |  |  |  |  |
| 4  |    | second half of the McNew facility would be assigned to EMW only if all of the three of        |  |  |  |  |  |
| 5  |    | the following conditions were met:  |  |  |  |  |  |
| 6  |    | (1) The addition of an incremental large load customer under evaluation is                    |  |  |  |  |  |
| 7  |    | confirmed to be located in EMW territory and EMW is responsible for                           |  |  |  |  |  |
| 8  |    | developing capacity resources to meet the new load;   |  |  |  |  |  |
| 9  |    | (2) EMW is able to complete transmission infrastructure upgrades in time to                   |  |  |  |  |  |
| 10 |    | accommodate the new large customer's planned load ramp; and                                   |  |  |  |  |  |
| 11 |    | (3) EMW is able to finance the construction and ownership of the 50%                          |  |  |  |  |  |
| 12 |    | allocation.   |  |  |  |  |  |
| 13 |    | Because all three conditions were met, the decision was made to allocate the second           |  |  |  |  |  |
| 14 |    | half of the McNew facility to EMW.  |  |  |  |  |  |
| 15 | Q: | In evaluating these factors, why did Evergy conclude it was prudent to allocate a $50\%$      |  |  |  |  |  |
| 16 |    | interest in McNew to Evergy Missouri West?  |  |  |  |  |  |
| 17 | A: | Evergy reviewed numerous factors impacting resource needs among the various affiliates        |  |  |  |  |  |
| 18 |    | including but not limited to likely load additions and flexibility within each affiliate's    |  |  |  |  |  |
| 19 |    | portfolio. Although no particular load addition(s) was the singular driver of the decision,   |  |  |  |  |  |
| 20 |    | Evergy analyzed likely load additions in each entity's territory, some of which have been     |  |  |  |  |  |
| 21 |    | submitted as an Attachment AQ Delivery Point Assessment Process with Southwest Power          |  |  |  |  |  |
| 22 |    | Pool. The analysis actually concluded that all three affiliates had resource adequacy needs,  |  |  |  |  |  |
| 23 |    | sufficient future load, and additional demand to support allocation of the second half of the |  |  |  |  |  |

McNew facility. However, the other candidates for assignment of the asset (Evergy Kansas Central and Evergy Metro) have either a later need for the additional capacity or have more flexibility with respect to their other generation assets, including possible flexibility to delay the retirement of some of their respective assets. This enables EKC and Evergy Metro to meet their customers' needs through 2030 without the addition of the second half of the McNew facility. In addition, EMW not only has less flexibility than the other two candidate affiliates, but its portfolio has the most acute need for the additional capacity and dispatchable, economically competitive energy provided by the second half of McNew. Based on these factors, Evergy determined it is prudent to allocate the second half of the McNew facility to EMW. Is there a confirmed new large load customer that makes up this new demand

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A:

0: addition in the load forecast of the CCN Supplemental Direct analysis?

No, the customer informed large load profile that is included in the CCN Supplemental Direct load forecast has not been publicly announced or confirmed. That said, the load has completed Evergy's internal review. This review allows the Company to complete due diligence on large load customer requests, including the ability to vet the feasibility of the customer locating in Evergy's service territory, and requires a sizeable deposit to support the analysis to study the viability of the customer's project. Additionally, in January 2025 the load addition was submitted to the Attachment AQ process at SPP to study the transmission upgrade requirements.

| 1  | Q: | Is the 50% McNew allocation to EMW solely as a result of a large load customer                   |  |  |  |  |
|----|----|--|--|--|--|--|
| 2  |    | addition?  |  |  |  |  |
| 3  | A: | No. As discussed in this testimony there are numerous factors that led to incremental            |  |  |  |  |
| 4  |    | capacity and energy needs at EMW above what was established in the 2024 Triennial IRP.           |  |  |  |  |
| 5  |    | Lower DSM capacity expectation, higher existing retail base load forecast, on-going SPP          |  |  |  |  |
| 6  |    | resource adequacy adjustments, and the expectation of new large customer load are all            |  |  |  |  |
| 7  |    | contributing factors leading to the allocation of 50% McNew to EMW. This asset will              |  |  |  |  |
| 8  |    | provide capacity and energy benefits to all existing and future retail customers, not just a     |  |  |  |  |
| 9  |    | single large load customer.  |  |  |  |  |
| 10 | Q: | What were the construction cost estimates for Projects that were utilized in the 2024            |  |  |  |  |
| 11 |    | Triennial IRP analysis?  |  |  |  |  |
| 12 | A: | As stated in my Direct Testimony, in the 2024 IRP we utilized a cost estimate of \$1,271/kW      |  |  |  |  |
| 13 |    | to construct a CCGT coming online in 2029 and \$1,294/kW to construct an SCGT in 2030.           |  |  |  |  |
| 14 | Q: | Did those estimates used for the 2024 Triennial IRP analysis change by the time the              |  |  |  |  |
| 15 |    | Direct Testimony supporting this CCN was filed?  |  |  |  |  |
| 16 | A: | Yes. At that time, the Company was running updated modeling to prepare for the CCN               |  |  |  |  |
| 17 |    | Direct Testimony filing, the estimated cost for natural gas combined-cycle units had             |  |  |  |  |
| 18 |    | **, or approximately ** percent, from the estimate utilized                                      |  |  |  |  |
| 19 |    | in the 2024 IRP. Similarly, the simple-cycle construction costs had increased to                 |  |  |  |  |
| 20 |    | **. Additionally, as stated in my Direct Testimony, we performed CCN                             |  |  |  |  |
| 21 |    | Direct modeling analysis using the same inputs that were used in the 2024 Triennial IRP          |  |  |  |  |
| 22 |    | filing, changing only the cost, heat rate, and installed size characteristics of the new natural |  |  |  |  |
| 23 |    | gas generation to be consistent with recent estimates.   |  |  |  |  |



| 1  | Q: | Is construction cost an important analytical factor in the IRP selection of preferred           |  |  |  |  |  |  |
|----|----|---|--|--|--|--|--|--|
| 2  |    | plan resources?   |  |  |  |  |  |  |
| 3  | A: | Yes. As explained in my Direct Testimony, cost is a "critical uncertain factor" within the      |  |  |  |  |  |  |
| 4  |    | analytical framework of the IRP process. As is the case with all critical uncertain factors—    |  |  |  |  |  |  |
| 5  |    | including but not limited to construction costs, fuel and input costs, and load growth—a        |  |  |  |  |  |  |
| 6  |    | substantial change to any such factor may materially impact the outcome of the resource plan    |  |  |  |  |  |  |
| 7  |    | selection. In addition to critical uncertain factors, there are numerous other inputs and       |  |  |  |  |  |  |
| 8  |    | variables that can impact the resource plan selection process as well. All of those factors, in |  |  |  |  |  |  |
| 9  |    | addition to construction costs, are considered in Evergy's decision-making process.             |  |  |  |  |  |  |
| 10 | Q: | What are the current construction cost estimates for the Viola, McNew, and Mullin               |  |  |  |  |  |  |
| 11 |    | Creek stations in the CCN Supplemental Direct analysis?   |  |  |  |  |  |  |
| 12 | A: | As Evergy witness Kyle Olson states in his Supplemental Direct Testimony, the cost              |  |  |  |  |  |  |
| 13 |    | estimates for the natural gas facilities are as follows:  |  |  |  |  |  |  |
| 14 |    | ■ <u>Viola</u> : ** total, ** ** for EMW's 50% share.   |  |  |  |  |  |  |
| 15 |    | ■ <u>McNew</u> : ** total, ** ** for EMW's 50%  |  |  |  |  |  |  |
| 16 |    | share.  |  |  |  |  |  |  |
| 17 |    | <ul><li>Mullin Creek: ** total.</li></ul>   |  |  |  |  |  |  |
| 18 |    | Based on these updated construction cost estimates, the average combined cycle (Viola and       |  |  |  |  |  |  |
| 19 |    | McNew) cost per kW is ** and the simple cycle (Mullin Creek) cost per kW                        |  |  |  |  |  |  |
|    |    |   |  |  |  |  |  |  |

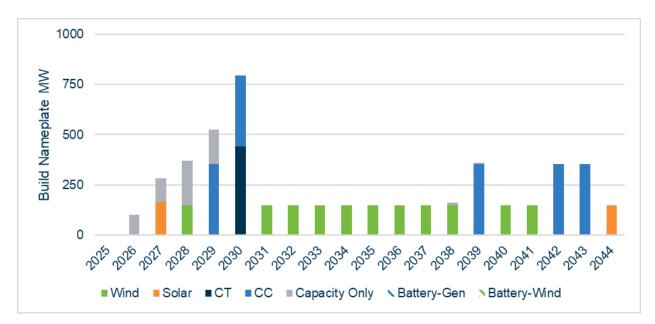


Q: After making all of the changes you've identified, including the updated construction costs, what is the differences between the CCN Supplemental Direct analysis capacity expansion plan compared to EMW's 2024 Triennial IRP Preferred Plan?

A:

Figure 1 below shows a new build plan after running capacity expansion with all of the updates explained earlier in my testimony. In addition to the 2024 Triennial IRP Preferred Plan resources, the largest difference in this CCN Supplemental Direct resource plan is the inclusion of the additional 50% combined-cycle resource in 2030 that was not in the 2024 Triennial IRP, which substantiates the need for the 50% McNew CCGT. Additionally, this updated plan includes 150 MW of incremental wind in 2028 and selects higher levels of market capacity 2026-2029, none of which was in EMW's 2024 IRP Preferred Plan. Other plan changes later in the planning horizon include more wind resources beyond 2035, as well as the addition of ½ CCGT's in 2039, 2042, and 2043.

FIGURE 1: EMW's CCN Supplemental Direct – 50% McNew Resource Plan

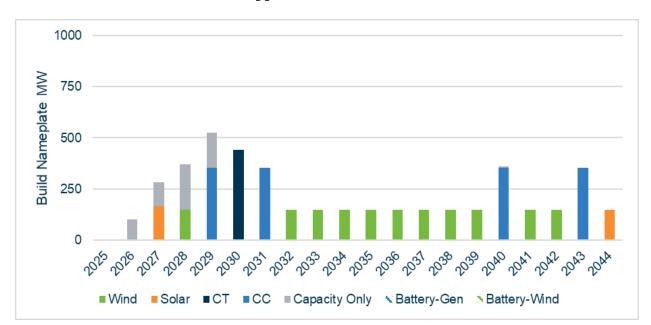


Q: Did Evergy study any other alternative resource plans during its CCN Supplemental Direct analysis that did not include the 50% McNew CCGT, yet were able to meet the higher capacity need and load forecast detailed earlier in this testimony?

Yes. Evergy studied three other planning scenarios to meet future capacity needs without the 50% McNew as an option. While each plan was able to solve for EMW's future incremental capacity need, all three plans were higher cost compared to the build plan displayed in Figure 1, above. Each of these scenarios includes the conversion of the 2024 Triennial IRP placeholder coal retirement to natural gas starting in 2031 and remaining online through 2039, as did the plan in Figure 1.

Figure 2 details how capacity expansion solves for EMW's need if the model is unable to select the 50% McNew CCGT in 2030. In this scenario the plan elects to build the next available ½ CCGT in 2031. Market capacity is also purchased in 2026-2029 at the same level as the plan that selected 50% McNew in 2030.

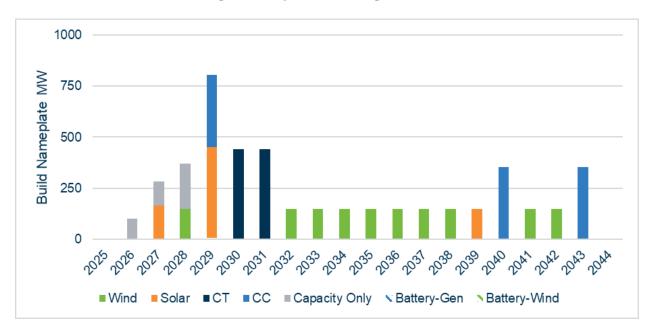
FIGURE 2: EMW's CCN Supplemental Direct – No 50% McNew in 2030 Plan



A:

Figure 3 details a plan that relaxes early build constraints for solar and storage, and does not allow the McNew or any CCGT build through 2031. This resource plan builds an incremental 450 MW of solar in 2029 and selects a full SCGT in 2031. Market capacity is purchased in 2026 - 2028.

FIGURE 3: EMW's CCN Supplemental Direct
No McNew, Higher Early Solar/Storage, No 2031 CCGT Plan



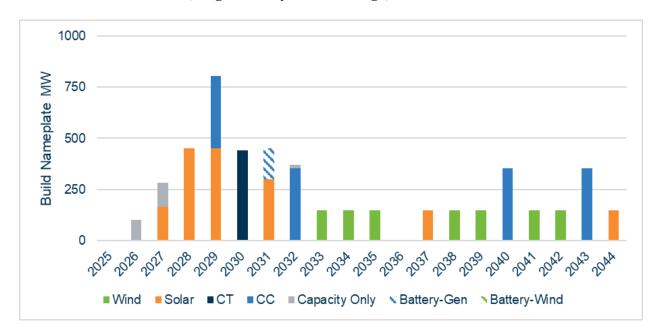
Lastly, Figure 4 shows a plan that relaxes early build constraints for solar and storage and does not allow the McNew nor any thermal resource (CCGT or SCGT) through 2031. The resource plan builds 1,200 MW of solar between 2028-2031, plus 150 MW of storage in 2031 before building a ½ CCGT in 2032. Market capacity is purchased in 2026, 2027, and 2032.

### FIGURE 4: EMW's Supplemental Direct

Q:

A;

### No McNew, Higher Early Solar/Storage, No 2031 Thermal Plan



What is your conclusion after studying alternative resource plans in the CCN Supplemental Direct analysis that did not include the 50% McNew CCGT?

EMW has a need for an incremental dispatchable thermal resources given the changes in the planning landscape and its need for additional capacity and energy. In each alternative resource plan that did not include the 50% McNew CCGT, capacity expansion selected the next available thermal build option. A CCGT was built in 2031 when capacity expansion did not include the 50% McNew CCGT as an option (Figure 2). When no CCGT builds were allowed in 2031 (Figure 3), capacity expansion built more storage in 2029 and an allowed SCGT in 2031 instead. As capacity expansion was constrained more, by not allowing a CCGT nor SCGT build in 2031 (Figure 4), a CCGT was built in 2032 which was the earliest possible new thermal build option. Each of the alternative resource plans elected to build the earliest available thermal unit to solve for emerging capacity need, even in plans with higher amounts of early solar and storage allowed.

EMW's CCN Supplemental Direct Resource Plan in Figure 1 (50% McNew CCGT) includes an asset already being developed and shared with a neighboring utility, and significantly reduces the overall risk of building to meet growth and capacity needs, compared to the alternative resource plans that don't include the 50% McNew CCGT option.

Q:

A:

## How do these alternative resource plans compare economically to the CCN Supplemental Direct Testimony Resource Plan?

As displayed in Figure 5 below, the 50% McNew Plan is the most economic plan for EMW customers to meet resource needs after running the models through the typical IRP endpoint Net Present Value Revenue Requirement ("NPVRR") rankings exercise. Due to many of the same resources being needed across the four different plans, there is not wide cost variability across the plans when evaluating the overall expected NPVRR projections. For example, each of these four plans needs some combination of a full CCGT and a full SCGT spread across the 2029–2032 timeframe, so there is some cost variability in the timing of the assumed build, but most of the required level of investment is similar.

FIGURE 5: EMW's CCN Supplemental Direct Overall Plan Rankings

| Rank | Plan | NPVRR  | Difference | Description  |
|------|------|--------|------------|--|
| 1    | ACAA | 14,307 |            | 50% McNew Plan   |
| 2    | ACIA | 14,312 | 5          | No McNew, Higher Early Solar/Storage, No 2031 Thermal Plan |
| 3    | ACGA | 14,350 | 44         | No 50% McNew in 2030 Plan                                  |
| 4    | ACHA | 14,423 | 116        | No McNew, Higher Early Solar/Storage, No 2031 CCGT Plan    |

### B. Tartan Factors

1

- 2 Q: What are the *Tartan* factors?
- 3 A: As explained by Evergy witness Kevin Gunn in his Direct Testimony at page 15-23, the
- 4 Commission has traditionally considered five criteria in evaluating whether a project is
- 5 necessary or convenient for the public service.
- 6 Q: Which of the *Tartan* factors will you address?
- 7 A: I will discuss why there is a need for EMW to be allocated a 50% interest in McNew, as
- 8 well as why this allocation is both necessary and convenient for the public service, and is
- 9 in the public interest.
- 10 Q: Why does EMW need to be allocated the 50% of capital and associated costs in
- 11 McNew?
- 12 A: Consistent with my testimony above, Evergy Missouri West needs both the capacity and 13 energy that a 50% share of the McNew generating station will provide to serve current 14 retail customers and expected load growth in its service territory. As evidenced by the 15 alternative CCN Supplemental Direct scenarios describe above in Figures 2-4, EMW needs a ½ CCGT to meet updated resource adequacy needs and to meet customer load growth. If 16 17 the 50% McNew plant is not allocated to EMW, there will be an even greater need to add 18 other resources prior to 2030, namely solar, and then by 2031 EMW would still need to 19 add a ½ CCGT. Delaying this ½ CCGT addition will not only be a higher cost plan for 20 EMW customers but will also add a greater level of risk to its customers. Evergy does not 21 have a project in an advanced a stage of development for 2031 as that of McNew. There 22 would be significant uncertainties for EMW to pivot from 50% McNew toward a 2031 ½ 23 CCGT. The broader market demand for gas turbines continues to grow, and Evergy does

not have firm committed Power Island Equipment ("PIE") slots with reservation agreements for a 2031 CCGT. Not only is PIE availability in question, but PIE costs would also be unknown as this point, thus introducing financial risk and uncertainty.

4 Q: Why is it necessary and convenient for the public service, as well as in the public interest to allocate a 50% interest in the McNew plant to EMW?

Having 50% of the McNew plant in Evergy Missouri West's generating fleet is clearly necessary and convenient for the public service, and in the public interest because it will allow EMW to continue to serve all of its customers with safe and reliable electricity. The results of the CCN Supplemental Direct analysis indicate that 50% of McNew will provide grid reliability and economic benefits that are both necessary and convenient for the public service, as well as in the public interest. Simply put, the 50% McNew resource is the best and most prudent positioned asset to deliver upon the fundamental objective of the IRP rules in Missouri. This asset will allow EMW to deliver a public service sourced from a conventional, dispatchable power production facility that will provide safe, reliable, and efficient energy in a manner that serves the current public interest and meeting economic growth in the State of Missouri.

17 Q: Does this conclude your testimony?

18 A: Yes.

A:

# 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  | )          | G N FA 2025 0075   |  |
| West and Evergy Metro, Inc. d/b/a Evergy<br>Missouri Metro for Permission and Approval             | )          | Case No. EA-2025-0075  |  |
| of a Certificate of Public Convenience and   | 3          |  |  |
| Necessity For Natural Gas Electrical   | )          |  |  |
| Production Facilities  | )          |  |  |
| AFFIDAVIT OF CO  | ODY VA     | NDEVELDE   |  |
| STATE OF MISSOURI )  |            |  |  |
| ) ss   |            |  |  |
| COUNTY OF JACKSON )  |            |  |  |
| Cody VandeVelde, being first duly swor   | n on his o | oath, states:  |  |
| <ol> <li>My name is Cody VandeVelde.</li> </ol>  | I work in  | Topeka, Kansas and I am employed by  |  |
| Evergy Metro, Inc. as Senior Director, Strategy and Long-Term Planning - Energy Resource           |            |  |  |
| Management.  |            |  |  |
| 2. Attached hereto and made a part   | hereof for | r all purposes is my Supplemental Direct   |  |
| Testimony on behalf of Evergy Missouri Metro and Evergy Missouri West consisting of eighteen       |            |  |  |
| (18) 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   | y to the o | questions therein propounded, including  |  |
| any attachments thereto, are true and accurate to the best of my knowledge, information and belief |            |  |  |
|  | /1/        | 1/11/1//   |  |
| /  | / /        | 1.11.11  |  |
| <del>(</del>   | dy X ande  | Velde  |  |
| 90   | dyyande    | Velde  |  |
| Subscribed and sworn before me this 19th day of  | f February | y 2025.  |  |
|  |            | edd Out  |  |
|  |            | to which the   |  |
| No   | tary Publ  | ic /   |  |
| My commission expires: H/24/225  |            | A THE PARTY OF THE |  |

## Evergy Metro, Inc. d/b/a Evergy Missouri Metro and Evergy Missouri West, Inc. d/b/a Evergy Missouri West

Docket No.: EA-2025-0075 Date: February 19, 2025

#### CONFIDENTIAL INFORMATION

\_\_\_\_\_\_\_

The following information is provided to the Missouri Public Service Commission under CONFIDENTIAL SEAL:

| Document/Page   | Reason for Confidentiality from List Below |
|---|--|
| Supplemental Direct, p. 10, lns. 18 and 20            | 3, 4, 5, and 6                             |
| Supplemental Direct, p. 11, lns. 14-15, 17, and 19-20 | 3, 4, 5, and 6                             |

Rationale for the "confidential" designation pursuant to 20 CSR 4240-2.135 is documented below:

- 1. Customer-specific information;
- 2. Employee-sensitive personnel information;
- 3. Marketing analysis or other market-specific information relating to services offered in competition with others;
- 4. Marketing analysis or other market-specific information relating to goods or services purchased or acquired for use by a company in providing services to customers;
- 5. Reports, work papers, or other documentation related to work produced by internal or external auditors, consultants, or attorneys, except that total amounts billed by each external auditor, consultant, or attorney for services related to general rate proceedings shall always be public;
- 6. Strategies employed, to be employed, or under consideration in contract negotiations;
- 7. Relating to the security of a company's facilities; or
- 8. Concerning trade secrets, as defined in section 417.453, RSMo.
- 9. Other (specify) \_\_\_\_\_\_.

Should any party challenge the Company's assertion of confidentiality with respect to the above information, the Company reserves the right to supplement the rationale contained herein with additional factual or legal information.