FILED
November 6, 2026
Missouri Public
Service Commission

Exhibit No. 300

Renew Missouri – Exhibit 300
Rebuttal Testimony of Nicholas Johnson
Case No. EA-2026-0154

Exhibit No.:	_____
Issue(s):	Economic feasibility, failure to consider alternatives, public interest
Witness:	Dr. Nicholas H. Johnson
Type of Exhibit:	Rebuttal Testimony
Sponsoring Party:	Renew Missouri
Case No.:	EA-2026-0154
Date Testimony Filed:	September 15, 2026

MISSOURI PUBLIC SERVICE COMMISSION

FILE NO.

EA-2026-0154

REBUTTAL TESTIMONY

OF

NICHOLAS JOHNSON

ON BEHALF OF
RENEW MISOURI

SEPTEMBER 15, 2026

****DENOTES CONFIDENTIAL INFORMATION****

Public Version

Table of Contents

I. INTRODUCTION AND PURPOSE 2

II. NEED FOR CAPACITY VERSUS NEED FOR THIS RESOURCE 5

III. LACK OF A DIRECT COMPARISON TO EQUIVALENT-CAPACITY STORAGE ALTERNATIVES 7

IV. CUSTOMER EXPOSURE TO FUEL COST RISK 11

V. INFLUENCE OF PRIOR DEVELOPMENT DECISIONS ON RESOURCE SELECTION 14

VI. CONCLUSION 16

I. INTRODUCTION AND PURPOSE

Q. Please state your name and business address.

A. My name is Dr. Nicholas Johnson. My business address is 1 Maybeck Pl, Elsah, IL 62028.

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

A. I am employed by Principia College as an Associate Professor.

Q: On whose behalf are you testifying?

A. I am testifying on behalf of Renew Missouri Advocates d/b/a Renew Missouri. Renew Missouri is an advocacy group appearing before regulatory agencies such as the Missouri Public Service Commission ("PSC" or the "Commission"), the Kentucky Public Service Commission, and the Kansas Corporation Commission in the role as expert witnesses on clean energy. Renew Missouri's work involves engaging as intervenors on utility rate cases, applications for certificates of convenience and necessity ("CCNs"), mergers and acquisitions, Accounting Authority Orders ("AAOs"), and energy efficiency investment portfolios. Renew Missouri also routinely engages in workshops and rulemaking by providing comments.

Q. Please describe your educational background.

A. I have a BS with majors in physics and religion from Principia College. I have an MS in environmental policy from Michigan Technological University. I have a PhD in energy and mineral engineering from Pennsylvania State University.

Q. Please describe your professional background.

A. I have been employed as a professor at Principia College since 2015 teaching in both the department of economics and the department of sustainability. I worked at the US Department of Energy (US DOE) in the Office of Policy for 18 months in between 2022 and 2024 as American Association for the Advancement of Science (AAAS) Science and Technology Policy Fellow (STPF) and then as a federal employee. At the US DOE, I focused on federal policy implications

for electricity markets, transmission line development analysis, and the effects of the current entanglement of electricity and natural gas markets. As a professor I teach some directly relevant topics to these proceedings—such as cost-benefit analysis—and others tangentially related such as environmental economics and environmental justice.

My curriculum vitae is included as Schedule NJ-1 to my Rebuttal Testimony.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to explain that Evergy[1] has not demonstrated that the proposed Mullin Creek #2 gas plant represents the most economically feasible resource for meeting future capacity needs or the most prudent resource choice under the public-interest standard embodied in the Tartan criteria. My testimony focuses on Tartan Factors 1 (need for the project), 2 (economic feasibility), and 5 (public interest). While Evergy has presented evidence supporting a future need for additional accredited capacity, and I appreciate that Evergy has been planning in a highly unstable policy environment over the last decade, the record does not adequately demonstrate that Mullin Creek #2, a 440 MW simple-cycle combustion turbine, is the most prudent resource choice for satisfying that need.

Q: Please provide a summary of your recommendations to the Missouri Public Service Commission in this proceeding.

A. My testimony focuses on Tartan Factors 1, 2, and 5. First, while Evergy has demonstrated a likely future need for additional accredited capacity, I do not believe the record adequately demonstrates that Mullin Creek #2 is the most prudent resource choice for satisfying that need. I recommend that the Commission distinguish between demonstrating a need for capacity and demonstrating a need for this specific resource. Second, I conclude that the resource-selection

[1] "Evergy" refers to Evergy Metro, Inc. ("Evergy Metro") d/b/a Evergy Missouri Metro ("Evergy Missouri Metro," "EMM," "Company," or "Applicant").

outcome is sensitive to assumptions regarding resource accreditation, particularly projected ELCC values for storage resources and accreditation assumptions for new thermal generation. I recommend that the Commission carefully evaluate those assumptions and the degree to which they influence the preferred-plan outcome. Third, although Evergy evaluated numerous resource plans and sensitivities, I have not identified a direct comparison between Mullin Creek #2 and a portfolio specifically designed to provide an equivalent quantity of accredited capacity through battery storage or storage paired with renewable generation. I recommend that the Commission consider whether the absence of such a comparison limits its ability to evaluate the economic feasibility of the proposed resource. Finally, because customer fuel costs are recovered through Fuel Adjustment Clauses, I recommend that the Commission carefully consider customer exposure to future fuel-cost risk and the expected operating profile of Mullin Creek #2 when evaluating the public-interest and economic-feasibility implications of the project.

Q: Generally, what is your understanding of how the Commission evaluates whether to grant a requested certificate of convenience and necessity?

A. My understanding is that the Commission evaluates CCN applications under the "Tartan Factors",[2] which include: (1) whether there is a demonstrated need for the project; (2) whether the project is economically feasible; (3) whether the applicant has the financial ability to complete the project; (4) whether the applicant has the managerial ability to complete and operate the project; and (5) whether the project promotes the public interest. The Commission's evaluation is not limited to whether a project can be built, but whether the applicant has demonstrated that the proposed resource represents a reasonable and prudent response to an identified need. My testimony focuses primarily on Tartan Factors 1, 2, and 5, specifically whether Evergy has

[2] *In re Tartan Energy Co., L.C.*, 3 Mo. P.S.C. 3d 173, Case No. GA-94-127, 1994 WL 762882 (Sept. 16, 1994).

demonstrated a need for the specific proposed resource, whether Mullin Creek #2 is the most economically feasible means of meeting that need, and whether approval of the project serves the long-term public interest.

II. NEED FOR CAPACITY VERSUS NEED FOR THIS RESOURCE

Q. Do you agree that Evergy has demonstrated a need for additional capacity resources?

A. Yes. The record supports a finding that Evergy faces growing resource-adequacy obligations and expects substantial load growth over the planning horizon, including growth associated with large-load customers in the near-term.[3] The record also reflects Evergy's analysis of future capacity needs and the contribution of projected load growth to those needs. My testimony does not challenge the conclusion that additional accredited capacity may be required in the future.

Q. If you do not dispute the need for additional capacity, what is your concern under the first Tartan Factor of need?

A. My concern is not whether additional capacity may be needed, but whether Evergy has adequately demonstrated that the identified need is most prudently met through construction of Mullin Creek #2. While Evergy's analysis supports a future capacity requirement, the record does not sufficiently explain why a 440 MW simple-cycle combustion turbine is the most appropriate resource choice when compared to alternative portfolios that may have different operating characteristics, fuel-price exposure, and scalability. Consequently, I do not believe the record adequately establishes that Mullin Creek #2 is the most prudent resource for meeting the projected capacity need.

Q. What assumptions appear particularly important to that determination?

[3] *Direct Testimony of Cody VandeVelde*, p. 6.

A. One important set of assumptions concerns the accreditation of battery-storage and renewable resources. Evergy uses projected ELCC values for new battery and renewable resources in its IRP planning. Under SPP's ACAP framework those ELCC values determine the accredited contribution of resources for purposes of satisfying reserve-margin requirements.[4] As projected ELCC values decline, the amount of accredited capacity provided by the same resource also declines. The projected reductions shown in Evergy's analysis are substantial over the planning horizon.[5] As a result, those assumptions can materially influence which resources are selected by the optimization model.

Q. Why does that matter?

A. Because the preferred-plan outcome may be sensitive to those accreditation assumptions. Evergy states that its ELCC estimates were based on recent SPP ELCC estimates and future projections.[6] However, the record does not clearly demonstrate how resource-selection outcomes would change if future ELCC values differ from those projections. If alternative accreditation trajectories lead to materially different resource portfolios, then the apparent preference for Mullin Creek #2 may depend significantly on those assumptions rather than on an inherent advantage of the resource itself.

Q. Are there other accreditation assumptions that warrant scrutiny?

A. Yes. **[redacted].

[redacted]

[4] In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro's 2026 Integrated Resource Plan Annual Update Filing, File No. EO-2026-0188, *Evergy Missouri Metro 2026 Annual Update Integrated Resource Plan May 2026*, Tables p. 43.

[5] In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro's 2026 Integrated Resource Plan Annual Update Filing, File No. EO-2026-0188, *Evergy Missouri Metro 2026 Annual Update Integrated Resource Plan May 2026*, Tables 20, 21.

[6] Evergy's response to the Staff of the Missouri Public Service Commission ("Staff") Data Request (DR) 27, MPSC_20260723-f.1-Answer-0027_6.docx p. 2.

[redacted] Because accredited capacity is a primary driver of resource selection in the model, it is important to understand how sensitive the preferred-plan outcome is to that assumption. The record would be stronger if it more clearly demonstrated whether reasonable changes to the assumed outage rate and resulting accreditation value would materially affect the optimizer's preference for Mullin Creek #2.

III. LACK OF A DIRECT COMPARISON TO EQUIVALENT-CAPACITY STORAGE ALTERNATIVES

Q. Do you agree with Evergy's assertion that the capacity need filled by Mullin Creek #2 cannot be met reliably or cost-effectively by renewable or storage resources?

A. Not entirely. I agree that Evergy's modeling did not select renewable resources as a direct replacement for Mullin Creek #2 in the ACDA sensitivity. However, I do not believe that result alone demonstrates that renewable or storage-based alternatives are incapable of meeting the identified capacity need. Rather, it demonstrates that under the specific assumptions used in Evergy's capacity-expansion model, the model continued to select thermal resources. Evergy witness Cody VandeVelde[9] acknowledges that batteries, renewable resources, ACAP accreditation, and ELCC methodologies were incorporated into the analysis, and Evergy's evaluated a scenario in which Mullin Creek #2 was removed as an option. Nevertheless, the record

[7] In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro's 2026 Integrated Resource Plan Annual Update Filing, File No. EO-2026-0188, *Evergy Missouri Metro 2026 Annual Update Integrated Resource Plan May 2026*, p. 50; Evergy's response to the Staff of the Missouri Public Service Commission ("Staff") Data Request (DR) 27, MPSC_20260723-f.1-Answer-0027_2.docx.
[8] Evergy Response to Staff Data Request 25, Q0025_CONF_Evergy LRE Ceiling Calculation (1).xlsx.
[9] *Direct Testimony of Cody VandeVelde*, pp. 6-12.

does not provide a transparent comparison between Mullin Creek #2 and an alternative portfolio specifically designed to provide a comparable quantity of accredited capacity through storage or storage paired with renewable resources. As a result, the record demonstrates the outcome of Evergy's modeling assumptions, but it does not necessarily demonstrate that a storage- or hybrid-based alternative could not satisfy the same capacity requirement under a different set of reasonable planning assumptions.

Furthermore, the 2026 planning results[10] show that a number of alternative portfolios produce relatively similar economic outcomes, with differences among many of the highest-ranked plans amounting to less than a few percent of total NPVRR. Under those circumstances, assumptions regarding accreditation, resource availability, and portfolio composition can materially influence the selection of a preferred resource plan. The Commission should therefore exercise caution in interpreting the ACDA results as conclusive evidence that Mullin Creek #2 is the only reliable or cost-effective means of satisfying the identified capacity need.

Q. Did Evergy evaluate alternatives to Mullin Creek #2?

A. Yes. Evergy evaluated numerous alternative resource plans, sensitivities, and planning scenarios. Evergy also evaluated Plan ACDA, which removed Mullin Creek #2 as an available resource option.

Q. Does that mean Evergy demonstrated that no reasonable storage-based alternative exists?

A. No. The fact that Evergy evaluated many alternative plans does not mean that all potentially relevant alternatives were directly compared. The record demonstrates that Evergy modeled storage resources, renewable resources, and multiple combinations of resource additions.

[10] In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro's 2026 Integrated Resource Plan Annual Update Filing, File No. EO-2026-0188, *Evergy Missouri Metro 2026 Annual Update Integrated Resource Plan May 2026* Appendix 6D Evergy Metro Rankings and Performance Metrics.

However, I have not identified a scenario specifically designed to compare Mullin Creek #2 against a portfolio intended to provide an equivalent amount of accredited capacity through battery storage or battery storage paired with renewable generation.

Q. Why is that distinction important?

A. Because the question before the Commission is not simply whether Evergy's preferred plan ranked well within Evergy's modeling framework. The question is whether Mullin Creek #2 represents the most economically feasible resource choice. To answer that question, it would be useful to understand how Mullin Creek #2 compares with alternatives intended to provide a similar quantity of accredited capacity. The record contains a comparison between the preferred plan and a No-Mullin-Creek sensitivity, but I have not found a direct comparison between Mullin Creek #2 and a portfolio specifically constructed around an equivalent accredited-capacity contribution from storage resources or storage paired with renewable generation.

Q. Why do you believe such a comparison would be useful?

A. The 2026 Annual Update demonstrates that Evergy's planning process considered numerous scenarios and that many resource plans produced relatively similar economic outcomes. Where differences among competing plans are relatively small, understanding the economics of specific resource choices becomes increasingly important. A direct comparison between Mullin Creek #2 and an alternative portfolio designed to provide a similar accredited-capacity contribution would help clarify whether the apparent preference for Mullin Creek #2 reflects an inherent economic advantage of the resource itself or simply the result of the particular portfolio combinations evaluated by the model. Evergy's resource-selection process is not solely a mechanical exercise in selecting the portfolio with the lowest modeled NPVRR. Mr. VandeVelde states that while minimization of NPVRR cost is the primary objective function it is not the only objective, which

implies some level of other criteria and/or judgement is used "to provide service that is safe, reliable, efficient, compliant with legal mandates, and in the public interest."[11] The IRP process provides a holistic and integrated view, allowing utilities to select the most cost-effective and resilient resource mix over the long term, rather than simply defaulting to the cheapest resources in the short term. Indeed, the preferred plan (ACAA) in the 2026 IRP update was the third cheapest and Evergy explicitly used expert judgement in making the selection.[12] The resource-plan rankings demonstrate that multiple portfolios often produce very similar economic outcomes; the differences between many plans are relatively small on a percentage basis. Where relatively small economic differences separate competing portfolios, understanding the assumptions and alternatives underlying the preferred resource choice becomes especially important.

Q. How does that relate to Mullin Creek #2?

A. Although Evergy evaluated numerous resource plans and sensitivities, I have not identified a portfolio specifically designed to provide an equivalent amount of accredited capacity through battery storage or battery storage paired with renewable generation. The record therefore demonstrates that Evergy's model selected Mullin Creek #2 under the assumptions provided to the model, but it does not provide a direct comparison showing whether a portfolio intentionally constructed to provide a similar accredited-capacity contribution would produce materially different economic results. Under these circumstances, understanding the assumptions that drive resource selection becomes especially important. While the model selected Mullin Creek #2 in the preferred portfolio and in the No-Mullin-Creek sensitivity the replacement resources did not consist solely of storage, the record does not provide a transparent, apples-to-apples comparison

[11] *Direct Testimony of Cody VandeVelde*, p. 3

[12] In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro's 2026 Integrated Resource Plan Annual Update Filing, File No. EO-2026-0188, *Evergy Missouri Metro 2026 Annual Update Integrated Resource Plan May 2026*, p. 3 and Table 17.

between Mullin Creek #2 and alternative portfolios designed specifically to provide an equivalent quantity of accredited capacity through storage or storage paired with renewable generation. Consequently, it is difficult to determine whether the apparent economic preference for Mullin Creek #2 reflects a fundamental advantage of the resource itself or particular modeling assumptions regarding accreditation, storage economics, and resource availability.

Q. What conclusion do you draw?

A. I am not suggesting that Evergy failed to evaluate alternative resources. The record demonstrates that Evergy performed extensive modeling and sensitivity analysis. My concern is narrower. Despite the large number of scenarios evaluated, I have not identified a direct, apples-to-apples comparison between Mullin Creek #2 and a portfolio intentionally designed to provide an equivalent quantity of accredited capacity through battery storage or battery storage paired with renewable generation. Given that Evergy itself considers factors beyond simple NPVRR rankings when selecting a preferred plan, such a comparison would help the Commission better evaluate whether Mullin Creek #2 represents the most economically feasible resource choice under Tartan Factor 2 and Tartan Factor 5. Consequently, the record does not clearly demonstrate how the economics of the proposed facility compare with that specific class of alternatives.

IV. CUSTOMER EXPOSURE TO FUEL COST RISK

Q. Did you review Evergy's prior Integrated Resource Plan modeling to understand how combustion turbines were expected to operate in selected resource plans?

A. Yes. I reviewed the annual generation information associated with Evergy Metro's 2024 preferred plan (CAAB), which was the top-ranked portfolio in the 2024 IRP.[13] The generation

[13] In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro's 2024 Triennial Integrated Compliance Filing Pursuant to 20 CSR 4240-22, File No. EO-2024-0153, *Evergy Metro Volume 6 Integrated Resource Plan and Risk*

outputs indicate that the combustion turbine selected by the model was expected to operate at very low utilization levels in most years. Based on the annual generation data, the implied capacity factor of the combustion turbine was generally only a few percent, and in most years was below three percent. Only a limited number of years showed materially higher utilization.

Q. What significance do you attach to those utilization levels?

A. The low capacity factors suggest that the combustion turbine's primary value in Evergy's planning models was its contribution to accredited capacity rather than its production of energy. In other words, the resource appears to have been selected principally to satisfy reserve-margin and resource-adequacy requirements rather than to generate significant amounts of electricity on an annual basis. That distinction is important because the economic justification for the resource depends heavily on the assumptions used to value its capacity contribution.

Q. How does that observation relate to the proposed Mullin Creek #2 facility?

A. **[redacted][14]** However, I have not identified a comparable public analysis showing the expected annual generation, operating hours, or capacity factor associated with Mullin Creek #2 under the preferred plan ACAA. Because the project's economic evaluation includes fuel costs through the NPVRR analysis, Evergy necessarily modeled some level of operation. Yet the expected utilization of the facility is not readily apparent from the materials I reviewed.

Analysis Integrated Resource Plan 20 CSR 4240-22.060 April 2024, Appendix 6B Annual Generation by ARP and Appendix 6D Evergy Metro Rankings and Performance Metrics.

[14] In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro's 2026 Integrated Resource Plan Annual Update Filing, File No. EO-2026-0188, *Evergy Missouri Metro 2026 Annual Update Integrated Resource Plan May 2026*, p. 50; Evergy's response to the Staff of the Missouri Public Service Commission ("Staff") Data Request (DR) 0027_2. MPSC_20260723-f.1-Answer-0027_2.docx.

Q. Why is that important from an economic-feasibility and public-interest perspective?

A. Evergy's NPVRR analysis incorporates assumptions regarding fuel prices, load growth, and plant operation. The 2026 Annual Update identifies data-center and AI-related development as a significant driver of forecasted load growth,[15] and Evergy has devoted substantial analysis to forecasting those loads. My concern is therefore not that Evergy failed to model future demand. Rather, my concern is that uncertainty surrounding future large-load development creates uncertainty regarding how frequently Mullin Creek #2 may ultimately operate. Missouri customers will pay actual fuel costs through fuel-adjustment mechanisms, not the fuel costs assumed in planning models. If data-center growth, baseload demand, or other large-load development results in Mullin Creek #2 operating more frequently than anticipated, customer fuel expenditures may be materially higher than those reflected in Evergy's economic forecasts. Because I have not identified a clear presentation of the facility's expected operating profile, annual generation, or capacity factor under the preferred plan, it is difficult to assess how sensitive the projected economics are to higher utilization levels, increased fuel consumption, or increased recovery of fuel costs through Fuel Adjustment Clauses.

Q. Are you suggesting that Evergy's load forecast is unreasonable?

A. No. The record demonstrates that Evergy has performed extensive load forecasting and expects substantial growth associated with large-load customers, including three data centers in the Metro Large Load Customer Pipeline.[16] My point is that the proposed facility is justified primarily as a capacity resource, while the economic consequences to customers depend upon how frequently

[15] In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro's 2026 Integrated Resource Plan Annual Update Filing, File No. EO-2026-0188, *Evergy Missouri Metro 2026 Annual Update Integrated Resource Plan May 2026*, p. 10.

[16] In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro's 2026 Integrated Resource Plan Annual Update Filing, File No. EO-2026-0188, *Evergy Missouri Metro 2026 Annual Update Integrated Resource Plan May 2026*, Table 45.

the facility ultimately operates. If future load growth results in substantially greater utilization than contemplated by the planning assumptions, customers would bear correspondingly greater fuel-cost exposure. Not all potential large load customers were included in base load planning, depending on where they are in Evergy's internal review process.[17] Understanding the expected operating profile of Mullin Creek #2 is therefore important when evaluating both the project's economic feasibility and its consistency with the public interest.

Q. What conclusion do you draw from this information?

A. My conclusion is not that Evergy failed to model fuel costs or plant utilization. Rather, my concern is that the public record emphasizes Mullin Creek #2's accredited-capacity contribution while providing limited transparency regarding the extent to which the facility is expected to operate and consume fuel. Given that fuel costs are ultimately borne by customers, the Commission should understand how the economics of the preferred plan change if Mullin Creek #2 operates more frequently than assumed and whether that increased utilization could materially affect customer costs recovered through Fuel Adjustment Clauses.

V. INFLUENCE OF PRIOR DEVELOPMENT DECISIONS ON RESOURCE SELECTION

Q. Does Mullin Creek #2 appear to benefit from being constructed at a site that was originally planned for two generating units?

A. Yes. The record indicates that the Mullin Creek site was developed as a two-unit site from the outset.[18] Evergy obtained land rights, transmission interconnection rights, permitting, and other development-related assets with the expectation that a second unit could eventually be constructed.

[17] *Direct Testimony of Cody VandeVelde*, pp. 13-14.
[18] *Direct Testimony of Jason Humphrey*, pp. 4-5.

Evergy also states that the project benefits from a "design once, build many" philosophy and the experience gained from developing Mullin Creek #1.

Q. Why is that relevant to Tartan Factor 5, the public interest?

A. Development efficiencies can provide real value for customers by reducing project risk, shortening development timelines, and potentially lowering costs. However, those advantages do not necessarily establish that the proposed resource is the most prudent resource choice under present-day conditions. The fact that a site was planned for a second generating unit does not, by itself, demonstrate that completing that second unit remains preferable to alternative resource options.

Q. What is your concern?

A. My concern is that the record does not clearly distinguish between the value of the resource itself and the value associated with prior development decisions. The Commission should understand whether Mullin Creek #2 was selected primarily because it represents the most economical and prudent resource available today, or whether its selection was influenced in part by the incremental advantages that naturally arise when a project is built at an already-developed site.

Q. Why is that distinction important?

A. Because the public interest is best served when resource decisions remain responsive to current circumstances. The Commission should be confident that the preferred outcome reflects today's planning assumptions, costs, resource alternatives, and customer needs, rather than simply continuing a development strategy established several years ago. In my view, the record would be stronger if it provided a clearer comparison between completion of the second Mullin Creek unit

and alternative portfolios capable of meeting similar reliability objectives under current planning assumptions.

VI. CONCLUSION

Q. What is your conclusion and recommendation to the Commission?

A. Evergy has demonstrated that additional accredited capacity is likely to be needed in the future. My testimony does not dispute that conclusion. Rather, my concern is that the record does not adequately demonstrate that Mullin Creek #2 is the most prudent resource choice for meeting that need. The outcome of Evergy's resource-selection process appears sensitive to assumptions regarding resource accreditation, future ELCC values, and the treatment of alternative technologies. While Evergy evaluated numerous scenarios and sensitivities, I have not identified a direct comparison between Mullin Creek #2 and a portfolio specifically designed to provide an equivalent amount of accredited capacity through battery storage or battery storage paired with renewable generation.

I therefore recommend that the Commission in this case: (1) distinguish between the need for capacity and the need for this specific resource; (2) require greater transparency regarding the assumptions that drive resource selection; (3) evaluate how sensitive the preferred-plan outcome is to accreditation assumptions for both storage and thermal resources; (4) seek a clearer understanding of the expected utilization of Mullin Creek #2 and the resulting customer fuel-cost exposure; and (5) consider whether alternative resource portfolios could satisfy the same reliability objectives while providing greater flexibility and lower long-term risk to Missouri customers. In addition, if the Commission should approve this CCN request, I recommend that future IRP filings and annual updates used to support CCN requests: (1) include selected capacity-expansion scenarios developed in response to stakeholder input; and (2) incorporate probabilistic assessments

of ratepayer cost exposure for key parameters and variables that are not routinely evaluated through high-, mid-, and low-case assumptions, including ELCC trajectories and combustion-turbine utilization rates. Particular attention should be given to assumptions for which resource-selection outcomes or NPVRR results are highly sensitive, and to parameters and variables that may materially affect costs ultimately borne by customers through mechanisms such as Fuel Adjustment Clauses. Such analyses would provide the Commission with a clearer understanding not only of expected outcomes, but also of the range and likelihood of adverse customer-cost impacts if planning assumptions prove inaccurate.

Q. Does this conclude your testimony?

A. Yes.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of Evergy Metro, Inc. d/b/a Evergy Missouri Metro for Permission and Approval of a Certificate of Convenience and Necessity Authorizing It to Construct, Install, Own, Operate, Manage, Maintain, and Control a Natural Gas Electrical Production Facility	)))))))	**Case No. EA-2026-0154**

AFFIDAVIT OF NICK JOHNSON

STATE OF ILLINOIS)
) **ss**
COUNTY OF MADISON)

COMES NOW Nick Johnson and on his oath states that he is of lawful age; that he prepared the attached Rebuttal Testimony; and that the same is true and correct to the best of his knowledge and belief.

Further the Affiant sayeth not.

Nick Johnson

Subscribed and sworn before me this 12 day of September, 2026.

Notary Public, State of Illinois
Official Seal
Creola Davis
Commission # 975157
My Commission Expires 7/18/2027

Notary Public

My Commission expires: 7-18-27

NICHOLAS H. JOHNSON

1 Maybeck Place, Elsah, IL 62028
618.979.3744 / nick.johnson@principia.edu

AREAS OF EXPERTISE: *Sustainability, economics, energy engineering, Regional Transmission Organizations, electric reliability, environmental policy, energy policy, electricity policy, electricity markets, optimization, network analysis, renewable energy (wind, solar, biofuels)*

EDUCATION

2021 **Doctor of Philosophy, Energy & Mineral Engineering**
Focus: Energy Management & Policy
Pennsylvania State University
Dissertation: "Studies in the Governance of Regional Transmission Organizations"

2009 **Master of Science, Environmental Policy**
Michigan Technological University
Thesis: "A Cost-Benefit Analysis for a Proposed Wind Turbine at Principia College"

2004 **Bachelor of Science, Majors: Physics, Religion; Minor: Mathematics**
Principia College, Illinois
Senior Physics Capstone: "Rare Gas Moderators for the PIASA Beam"
Senior Religion Capstone: "The Christian Science Liturgy"

PUBLICATIONS

Downing, J, **NH Johnson**, M McNicholas, D Nemtzow, R Oueid, J Paladino, and EB Wolfe. Pathway to Commercial Liftoff: Virtual Power Plants. U.S. Department of Energy, September, **2023**.

Johnson, NH, *Demand* and *Greenhouse gas neutral* and *Demand management.* In: B Haddad and BD Solomon (Editors), *Dictionary of Ecological Economics*. Edward Elgar Press, **2023**.

Cocks, M and **NH Johnson**. "Smart City Technologies in the USA: Smart Grid and Transportation Initiatives in Columbus, OH." In: HM Kim, S Sabri, and A Kent (Editors), *Smart Cities for Technological and Social Innovation*, Elsevier, **2020**.

Solomon, B and **NH Johnson**. **2012**. Public policies, economics, public perceptions, and the future of bioenergy crops, p.285-299. In: C Kole, CP Joshi, and DR Shonnard (Editors), *Handbook of Bioenergy Crop Plants.* Boca Raton, FL: Taylor & Francis Group.

Johnson, NH and B Solomon. **2010**. A net-present value analysis for a wind turbine purchase at a small U.S. college. *Energies* 3(5):943-959.

Johnson, NH. **2010**. Biofuels, p.201-204. In: Warf, B (Editor), *Encyclopedia of Geography, Volume I.* Thousand Oaks, CA: Sage Publications.

Solomon, B and **NH Johnson**. **2009**. Valuing climate protection through willingness to pay for biomass ethanol in the Upper Midwest. *Ecological Economics* 68(7):2127-2144.

Solomon, B and **NH Johnson**. **2008**. Introduction, p.3-27. In: BD Solomon and VA Luzadis (Editors), *Renewable Energy from Forest Resources in the United States.* Oxfordshire, UK: Routledge.

PRESENTATIONS

Johnson, NH. **2025**. Panelist, The AI Crossroads Panel, Webster University, Webster, MO. 17 Nov.

Johnson, NH. **2025**. "Introduction to Network Analysis", Social Impact Gathering Workshop, Grinnell College, Grinnell, IA. 14 Nov.

Johnson, NH. **2025**. "The Clean and Reliable Grid Affordability Act (CRGA) and the Challenges Facing the Illinois Electric Grid", Sierra Club Piasa Palisades Group speaker series, Alton, IL. 13 May.

Johnson, NH. **2025**. "U.S. Renewable Energy Policy", IS 318 Sustainability and Renewable Energy, Southern Illinois University Edwardsville. 1 April.

Johnson, NH. **2024**. "An Introduction to Environmental Cost Benefit Analysis", SPARK program, Washington University in St. Louis. 20 August.

Johnson, NH. **2019**. "The Power Grid", American Association of University Women branch meeting, Minneapolis, MN. 21 January.

Blumsack S, **NH Johnson**, and K Yoo. **2017**. "Can Capacity Markets be Designed by Democracy?", The Hawaii International Conference on System Sciences: Meeting the Productivity Challenge, Hilton Waikoloa Village, HI. 4-7 January.

Johnson, NH. **2016**. "Voting networks in Regional Transmission Organizations: The benefits and burdens of participation", Industry Studies Association Conference: Meeting the Productivity Challenge, Minneapolis, MN. 24-25 May.

Johnson, NH. **2015**. "Of socials structures and infrastructure: Voting networks in Regional Transmission Organizations", Energy Policy Research Conference, Denver, CO. 10-11 September.

Johnson, NH and S Blumsack. **2014**. "Comparing innovation in Regional Transmission Organizations", Energy Policy Research Conference, San Francisco, CA. 4-5 September.

Johnson, NH and S Blumsack. **2014**. "Transmission planning in regional transmission organizations", Industry Studies Association Conference: Sustaining Sustainability in the Face of Increasing Risk, Portland, OR. 27-30 May.

AWARDS AND FELLOWSHIPS

2026 Prairie State Protector, June awardee, Sierra Club Illinois Chapter

2023 The Secretary of Energy's Achievement Award, U.S. Department of Energy
1. *Inflation Reduction Act Energy Tax Credit Tiger Team*
2. *Pathways to Commercial Liftoff Report Team*

2022-2023 American Association for the Advancement of Science (AAAS) Science and Technology Policy Fellow (STPF), Office of Policy, U.S. Department of Energy

TEACHING EXPERIENCE

2025- Associate Professor, Sustainability Department, Principia College

2023- Department Chair, Sustainability Department, Principia College

2020-2025 Assistant Professor, Sustainability Department, Principia College

2021-2022 Department Chair, Sustainability Department, Principia College

2017-2020 Instructor, Sustainability Department, Principia College

2015-2016 Visiting Faculty, Sustainability Department, Principia College
SUS 280 *Topics in Sustainability: Modern Climate Change* (Fall 2015, Fall 2016)
SUS 250 *Energy & Living Systems* (Fall 2016)
SUS 401 *Independent Sustainability Project* (Spring 2017)

2015- Visiting Faculty, Department of Economics, Principia College

2016 ECON 203 *Principles of Microeconomics* (Fall 2016, Spring 2017)
ECON 271 *Environmental Economics* (Spring 2015, Spring 2016)

2013-2016 Guest Lecturer [energy, climate change, adaptation/mitigation], Center for Sustainability, Principia College
SUS 151 *Introduction to Sustainability* (Spring 2013, Spring 2014, Spring 2015, Spring 2016)

2011-2012 Teaching Assistant, Department of Energy and Mineral Engineering, Pennsylvania State University
EBF 304W *Global Management for the Earth, Energy, and Materials Industries*
EME 460 *Geo-resource Evaluation and Investment Analysis*

2011 Visiting Faculty, Department of Biology and Natural Resources, Principia College
BNR 381 *Advanced Natural Resources Seminar: Energy & the Environment* (Spring 2011)

2009 Instructor, Michigan Technological University, Future Fuels Teacher Institute

2007-2008 Teaching Assistant, Department of Social Sciences, Michigan Technological University
SS 2100 *Introduction to Cultural Anthropology*
SS 2801 *Science Technology and Society: Interactions and Interrelationships*

2007 Lab Instructor, Department of Physics, Principia College

2006-2007 Positron Beam Project Manager, Principia College Physics Department

2005-2007 Technician, Principia College Physics Department

OTHER EMPLOYMENT

2023-2024 Consultant *(5 CFR 304.102(b))*, Office of Policy, U.S. Department of Energy

2018-2022 Solar Farm Project Manager, Principia College

2012-2015 Research Assistant (Dr. Seth Blumsack), Pennsylvania State University

2009-2011 Wind Turbine Project Manager, Principia College

2009-2011 Head Rugby Coach, Athletic Department, Principia College

2008-2009 Research Assistant (Dr. Barry Solomon), Michigan Technological University

PROFESSIONAL AFFILIATIONS

American Association for the Advancement of Science

Sustainability Education Accreditation Commission (Peer Reviewer)

ACTIVITIES & OTHER WORK EXPERIENCE

2025- Journal Referee, Utilities Policy

2025- Member, Executive Committee, Sierra Club, Piasa Palisades Group

2024- Member, Climate Protection and Energy Efficiency Committee, Alton, IL

2018-2022 Member, Climate Protection and Energy Efficiency Committee, Alton, IL

2015-2022 Assistant Rugby Coach, Principia College
2015 10th Place USA Rugby Men's DII College 7s National Championship
2016 5th Place USA Rugby Men's DII College 7s National Championship
2017 Round of 32 USA Rugby Men's DII College 15s National Championship
2017 10th Place USA Rugby Men's DII College 7s National Championship
2018 5th Place USA Rugby Men's DII College 7s National Championship
2019 7th Place USA Rugby Men's DII College 7s National Championship
2021 Round of 16 NCR Rugby Men's DII College 15s National Championship
2022 5th Place DII 7s Collegiate Ruby Championship

2014-2020 Journal Referee, Power & Energy Society (*IEEE Transactions on Smart Grid*) and International Association for Energy Economics (*The Energy Journal*)

2014-2016 Member, Advisory Board, Institute for Energy, St. Francis University

2012-2014 Head Rugby Coach, Happy Valley Barbarians, State College, Pennsylvania
2014 Round of 32 USA Rugby Men's DIII Club 15s National Championship

2009-2011 Volunteer Firefighter, Quarry-Elsah-Mississippi Townships Fire Department, Illinois

2006 Participant, M.I.T. Vehicle Design Summit, Dean of Undergraduate Education, Office of Experiential Learning

2005-2007 Head Rugby Coach, Principia College

2004-2007 Volunteer Firefighter, Quarry-Elsah-Mississippi Townships Fire Department, Illinois

2004 NASA Summer Institute Program, Atmospheric Sciences Division, Goddard Space Flight Center, Maryland
Independent Project: "Correlation between groundwater fluctuations in the Mississippi River Basin and fluctuations in the Earth's gravitational field"

2000-2005 Member of Principia Solar Car Team

SKILLS AND CERTIFICATIONS

Computer Applications: Modeling software and programming: NVivo, SPSS, GAMS, PowerWorld, Mathematica, AutoCAD, Matlab
Sustainability: Home Energy Audit certification
Professional Skills: Metalworking machinist
Coaching: USA Rugby Level 200 certification
Driving: Valid Illinois Driver's License; Illinois Class-B License