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MISSOURI PUBLIC SERVICE COMMISSION

CASE NO. EA-2026-0343

DIRECT TESTIMONY

OF

J KYLE OLSON

ON BEHALF OF

EVERGY MISSOURI METRO and EVERGY MISSOURI WEST

**Kansas City, Missouri
August 2026**

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OF

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CASE NO. EA-2026-0343

I. INTRODUCTION

Q: Please state your name and business address.

A: J Kyle Olson. My business address is 1200 Main, Kansas City, Missouri 64105.

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

A: I am employed by Evergy Metro, Inc. as Senior Director of Conventional Generation Projects for Evergy Metro, Inc. d/b/a Evergy Kansas Metro (“Evergy Kansas Metro”), Evergy Kansas Central, Inc. and Evergy South, Inc., collectively d/b/a as Evergy Kansas Central (“Evergy Kansas Central”), Evergy Metro, Inc. (“Evergy Metro”) d/b/a as Evergy Missouri Metro (“Evergy Missouri Metro”, “EMM”), and Evergy Missouri West, Inc. d/b/a Evergy Missouri West (“Evergy Missouri West”) collectively (“Applicants”, or the “Companies”. These are the operating utilities of Evergy, Inc. (“Evergy”).

Q: On whose behalf are you testifying?

A: I am testifying on behalf of Evergy Missouri Metro and Evergy Missouri West.

Q: What are your responsibilities as Senior Director of Conventional Generation Projects for the Evergy utilities?

A: From a high level, my responsibilities include end-to-end development, contracting, construction, and start-up of new conventional generation assets for Evergy.

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

2 A: I graduated from Georgia Tech with a Bachelor of Science degree in Electrical Engineering
3 in 2012. Upon graduation, I was employed by El Paso Electric (“EPE”) as a Power Plant
4 Engineer at the Newman Power Station. In May 2014 I was laterally moved to EPE’s
5 Generation Projects Team to help oversee the design, construction, and commissioning of
6 the Montana Power Station. During that time, I completed my Master of Business
7 Administration degree at the University of Texas at El Paso. In late June 2016, I was
8 promoted to Assistant Manager at EPE’s Newman Power Station. I became a licensed
9 Professional Engineer in New Mexico in March 2017 and in Texas in May 2017. In April
10 2019 I was promoted to Manager of Power Generation Engineering at EPE. In that position
11 I managed the team responsible for all capital and large maintenance engineering projects
12 to support all EPE’s local generation. In December 2021 I was promoted to Director of
13 Power Generation and Asset Management where my duties expanded to oversee the capital
14 additions placed in service at Palo Verde Nuclear Generating Station along with Palo
15 Verde’s operations and maintenance expenses. Additionally, I reviewed and approved
16 nuclear fuel contracts and nuclear fuel expenses. In February 2024 I was hired by Evergy
17 Metro as Director of Conventional Generation Projects. I became a licensed Professional
18 Engineer in Kansas in September 2024. In August 2026, I was promoted to Senior Director
19 of Conventional Generation Projects.

1 **Q: What specific education, training, or industry experience do you have relevant to cost**
2 **analysis related to power plant construction, particularly in connection with natural**
3 **gas power plant builds?**

4 A: I have been directly involved with or have provided oversight to eight different natural gas
5 unit construction projects or “builds.” Additionally, I sit on the Generation Council of the
6 Electric Power Research Institute (“EPRI”). The EPRI Generation Council leads and
7 drives sector research and development and advises sector management and staff on the
8 strategic direction, technical content, and results of the research portfolio. Recently, the
9 Generation Council has spent considerable time focusing on new plant construction.

10 **Q: Have you previously testified in proceedings before the Missouri Public Service**
11 **Commission (“Commission” or “MoPSC”) or before other utility regulatory**
12 **agencies?**

13 A: Yes, I have previously testified in Case No. EA-2025-0075 where the Commission granted
14 Energys Missouri West in July 2025 certificates of convenience and necessity (“CCN”) for
15 three new natural gas generating units: the Mullin Creek #1 single-cycle unit, and the
16 Chisholm Trail (formerly known as “Viola”) and McNew combined-cycle units. I have also
17 testified in the ongoing Case No. EA-2026-0154 where Energys Metro Inc. has requested a
18 CCN for a natural gas generating unit, Mullin Creek #2, a simple-cycle gas generating unit.
19 I have also given testimony in proceedings before the Public Utility Commission of Texas,
20 the New Mexico Public Regulation Commission, and the Kansas Corporation Commission
21 (“KCC”).

1 **Q. What is the purpose of your testimony in this docket?**

2 A. The purpose of my testimony is to support the utilities' request for a Certificate of
3 Convenience and Necessity (CCN) for a project known as the Buchanan Bluffs Energy
4 Center Unit 2 facility ("Buchanan Bluffs Energy Center Unit 2", "Buchanan Bluffs Unit
5 2" or "Project"). Specifically, my testimony will:

- 6 ▪ Describe the Buchanan Bluffs Unit 2 facility and explain its configuration and the
7 basis for the technology selected;
- 8 ▪ Explain the Owner's Engineer ("OE") selection process and the OE's project
9 oversight responsibilities;
- 10 ▪ Summarize the siting study performed, the evaluation criteria applied, and the basis
11 for selecting the Buchanan Bluffs Energy Center Unit 2 site, including Evergy's
12 engagement with the local community and nearby landowners;
- 13 ▪ Describe the procurement process for the Power Island Equipment ("PIE");
- 14 ▪ Describe the engineering, procurement, and construction ("EPC") procurement
15 process;
- 16 ▪ Present the project cost estimates and discuss relevant industry cost trends;
- 17 ▪ Identify material project risks and the mitigation measures implemented to manage
18 those risks;
- 19 ▪ Provide an overview of fuel gas supply planning, including the long-term natural
20 gas procurement and transportation strategy;
- 21 ▪ Describe the Southwest Power Pool ("SPP") transmission interconnection
22 requirements and related coordination activities; and

- 1 ▪ Discuss Buchanan Bluffs Energy Center Unit 2's targeted in-service date and the
2 process for construction status reporting.

3 **Q. Please describe the resource addition under review in this CCN docket.**

4 A. The resource addition under review in this docket is the Buchanan Bluffs Energy Center
5 Unit 2, an advanced-class, nominal 710 MW combined-cycle gas turbine facility to be
6 located in Buchanan County, Missouri, and owned 50% by EMM and 50% by EMW.
7 Consistent with Evergy's "design once, build many" development philosophy, this unit
8 will be functionally identical to the Chisholm Trail ("Viola") and McNew CCGTs which
9 the Commission granted CCN's in Docket No. EA-2025-0075.

10 **Q. Please identify the Schedules you are sponsoring through your direct testimony.**

11 A. I am sponsoring the following Schedules to my direct testimony:

- 12 • Schedule JKO-1 Site Map
13 • Schedule JKO-2 General Site Layout
14 • Confidential Schedule JKO-3 Siting Study
15 • Confidential Schedule JKO-4 Kiewit Estimate for Buchanan Bluffs Energy Center Unit 1
16 and 2
17 • Confidential Schedule JKO-5 Buchanan Bluffs Energy Center Unit 2 Budget
18 • Confidential Schedule JKO-6 Reservation Agreement for Buchanan Bluffs Energy
19 Center Unit 2
20 • Confidential Schedule JKO-7 LNTP to Kiewit for Buchanan Bluffs Energy Center Unit 2

21 Each Schedule was prepared by me, or under my direction and supervision, or is
22 of a type reasonably relied upon by professionals in my field. Each Schedule is true and
23 accurate to the best of my knowledge and belief.

II. BUCHANAN BLUFFS ENERGY CENTER UNIT 2 PROJECT OVERVIEW

Q. Please describe the Buchanan Bluffs Energy Center Unit 2.

A. As previously stated, the Project is an advanced-class, nominal 710 MW combined-cycle gas turbine facility to be owned 50% by EMM and 50% by EMW and located in Buchanan County, Missouri, with commercial operation targeted for 2032. The CCGT is configured as a 1x1 single-shaft unit consisting of an advanced J-class gas turbine, an electrical generator, a heat recovery steam generator (“HRSG”), and a steam turbine, with exhaust cooled by an air-cooled condenser. The facility will be co-located with, and developed jointly alongside, an essentially identical CCGT (the Buchanan Bluffs Energy Center Unit 1) to be owned by Evergy’s Kansas affiliate, Evergy Kansas Central, consistent with Evergy’s “design once, build many” development philosophy. The advanced-class technology provides favorable heat rates, a low capital cost per kilowatt, and a wide operating range. Additionally, the unit is equipped with modern emissions controls, positioning it to meet current and anticipated environmental requirements. Consistent with Evergy’s “design once, build many” development philosophy, the Buchanan Bluffs Energy Center Unit 1 and Buchanan Bluffs Energy Center Unit 2 will be functionally identical to the Chisholm Trail (“Viola”) and McNew CCGTs which the Commission granted a CCN in Docket No. EA-2025-0075.

Q. Where will the Buchanan Bluffs Energy Center Unit 2 facility be built?

A. The facility will be built on an approximately 170-acre site in Buchanan County, Missouri, near Frazier, MO. A map of the site is attached in Schedule JKO-1. A general layout of the project is attached in Schedule JKO-2. The site was selected in part for its proximity to high-voltage transmission and to natural gas supply, which I discuss in the site-selection

1 and fuel-supply sections of my testimony. Additionally, although an existing 69 kV
2 transmission line and pipeline right-of-way are located on portions of the site, the
3 Buchanan Bluffs Unit 2 construction footprint and associated project improvements do not
4 cross any utility facilities, railroad tracks, or known underground facilities.

5 **Q. What is the expected commercial operation date for the Buchanan Bluffs Energy**
6 **Center Unit 2 facility?**

7 A. The Buchanan Bluffs Energy Center Unit 2 is targeted to achieve commercial operation
8 before summer 2032.

9 **Q. What is a 1x1 single-shaft design, and why was that design selected?**

10 A. In a 1x1 single-shaft configuration, both prime movers (the gas turbine and the steam
11 turbine) are arranged on a single shaft line driving one common generator. Apart from
12 using a single generator, the balance-of-plant systems in a single-shaft configuration are
13 harmonized, resulting in fewer individual components. Using one large generator instead
14 of two or more smaller units can increase generator efficiency and reduce maintenance
15 expense. A single-shaft configuration also typically requires less land than an equivalent
16 multi-shaft plant and offers redundancy, reliability, and quicker-start benefits.

17 **Q. Describe Evergy's approach to developing the Buchanan Bluffs Energy Center Unit**
18 **2 project.**

19 A. Evergy is developing the Project consistent with the approach and with the same partners
20 as was recently approved in the Evergy Missouri West and Evergy Missouri Metro natural
21 gas CCN filing, in Docket EA-2025-0075. As such, Evergy has procured an Owner's
22 Engineer ("OE"), Power Island Equipment ("PIE"), and an Engineer, Procure and
23 Construct ("EPC") Contractor. Evergy's approach also reflects a "design once, build

1 many” philosophy. By carrying forward design strategies, procurement processes, and
2 project-management practices already developed for Chisholm Trail (“Viola”) and
3 McNew, the Company can promote schedule discipline, cost efficiency, risk reduction and
4 more predictable execution for the Buchanan Bluffs Energy Center Unit 2.

5 **Q. Why did Evergy apply the “design once, build many” approach rather than rebidding**
6 **the project?**

7 A. Rather than re-bidding the project, Evergy carried forward the contractors, turbine
8 technology, and contract terms that were already competitively secured through the RFP
9 process for the prior Chisholm Trail and McNew CCGTs in Docket No. EA-2025-0075.
10 Kiewit continues as EPC contractor, Burns & McDonnell as Owner’s Engineer, Mitsubishi
11 Power Americas as the power-island equipment supplier, and Siemens as the supplier of
12 the GSU transformer and 345 kV breakers. The “design once, build many” approach
13 allows Evergy to build on an established technical, commercial, and project-management
14 foundation instead of developing new designs and execution plans from scratch.

15 **Q. What are the principal advantages of proceeding in this manner rather than**
16 **rebidding?**

17 A. The biggest advantage is keeping the favorable contract terms we were able to lock in
18 earlier – terms that would be much harder to secure today with high demand for EPC
19 contractors, tight labor, and greater contractor leverage. Such terms include liquidated
20 damages, strong warranty and quality-assurance obligations, clear change-management
21 processes, inspection and defect-correction rights, cost limits, milestone-based payments,
22 and financial-assurance provisions. The approach also lowers risk, improves cost and
23 schedule certainty, and creates economies of scale by buying jointly with the nearly

1 identical, co-located Buchanan Bluffs Energy Center Unit 1. Using Mitsubishi equipment
2 also gives Evergy the opportunity to coordinate service agreements, spare parts, and
3 maintenance across similar units, and reserving that equipment now holds Evergy's spot in
4 the long-lead production queue while approvals are pending.

5 **Q. Why is Evergy's development approach prudent in this circumstance?**

6 A. Taken together, the reduced risk of cost overruns and delays, the preservation of favorable
7 contract terms, and the standardization and efficiencies support the prudence of proceeding
8 without rebidding. This approach delivers the lowest reasonable cost to customers with
9 reasonable level of risk mitigation.

10 **Q. Describe in general terms the benefits of using an Owner's Engineer ("OE")**
11 **contractor.**

12 A. An OE contractor provides augmented technical and managerial support to the owner,
13 including assistance with engineering, procurement, and construction oversight. The OE
14 also serves as the owner's representative in connection with the EPC contractor's
15 procurement activities. Using an OE with direct EPC experience gives Evergy informed,
16 independent oversight of the EPC contractor, reducing the likelihood of schedule, cost, and
17 performance issues.

18 **Q. What equipment is included in the Power Island Equipment ("PIE")?**

19 A. The PIE comprises the major generating equipment, including the advanced J-class gas
20 turbine, the electrical generator, the HRSG, and the steam turbine. Evergy's approach is to
21 procure all this equipment from a single manufacturer, which minimizes risk because the
22 PIE vendor warrants equipment delivery schedule and performance (both output and heat
23 rate), as well as ammonia consumption, noise, and other items. The Company is procuring

1 the PIE equipment from Mitsubishi Power Americas (MPWA), which is also the supplier
2 for Chisholm Trail (“Viola”) and McNew. This approach allows for efficiencies in
3 procurement, engineering, and construction.

4 **Q. What other owner-furnished equipment is Evergy procuring?**

5 A. In addition to the PIE, Evergy is procuring the Generator Step-Up (“GSU”) transformer
6 and the 345 kV breakers required for the interconnection. Because these items have
7 extremely long lead times, Evergy is procuring them ahead of the balance of the project in
8 order to reduce project risk. Evergy is procuring this equipment from Siemens, which is
9 already the supplier for Chisholm Trail (“Viola”) and McNew. This approach allows for
10 further efficiencies in procurement, engineering, construction, and commissioning.

11 **Q. Describe in general terms the Engineer, Procure, and Construct (“EPC”) contractor**
12 **approach.**

13 A. Under an EPC delivery model, the EPC contractor is responsible for designing and
14 constructing a complete power plant that meets the commercial and technical specifications
15 established during the request-for-proposal process. The EPC contractor manages and
16 integrates all engineering, procurement, and construction activities and is accountable for
17 delivering the project on schedule.

18 **Q. Why is the EPC contractor approach being utilized for the Buchanan Bluffs Energy**
19 **Center Unit 2 project?**

20 A. Under the EPC approach, a single contractor is accountable for engineering, procurement,
21 and construction, which simplifies coordination and improves accountability relative to
22 multi-contract approaches. Also, EPC contracting is often more efficient because the
23 contractor can overlap design, procurement, and construction and optimize sequencing to

1 avoid delays. The model provides a turnkey structure with a single primary counterparty,
2 clearer cost visibility, and contractual schedule and performance guarantees. Combined
3 with Evergy's use of an OE with direct EPC experience to provide independent oversight,
4 this approach further reduces the likelihood of schedule, cost, and performance issues.

5 **Q: Are there benefits to using the same OE and EPC contractors and common**
6 **technology as Chisholm Trail ("Viola") and McNew?**

7 A: Yes. The Buchanan Bluffs Energy Center Unit 2 utilizes the same OE and EPC contractor
8 structure, common generation technology, and the same original equipment manufacturer
9 as Chisholm Trail ("Viola") and McNew. This continuity materially reduces development
10 and execution risk by relying on proven contractors, technology, and contractual
11 arrangements that have already been evaluated and approved by the Commission.

12 Using a repeatable project design enables economies of scale and supports more
13 reliable and cost-effective project delivery for customers. Efficiencies and cost savings are
14 achieved through standardized engineering, incorporation of lessons learned, procurement
15 leverage, and coordinated long-term service planning, spare parts management, and
16 maintenance across substantially similar units.

17 In addition, this continuity improves cost predictability and schedule certainty by
18 allowing Evergy and its contractors to build upon an established technical, commercial,
19 and project management framework rather than developing new designs and execution
20 plans. These factors collectively reduce the risk of cost overruns and delays, resulting in
21 tangible benefits for customers and supporting the prudence of the proposed Project.

1 **Q. Are there benefits to using the same OE and EPC contractors, and common**
2 **generation technology, across the Buchanan Bluffs Energy Center Unit 2 and**
3 **Buchanan Bluffs Energy Center Unit 1 projects?**

4 A. Yes. These co-located units do not simply share an OE and an EPC contractor; they also
5 use common generation technology and the same original equipment manufacturers.
6 Developing the Buchanan Bluffs Energy Center Unit 1 together with the Buchanan Bluffs
7 Energy Center Unit 2 – effectively as a single, coordinated project – captures meaningful
8 economies of scale that flow through to customers. Those efficiencies come from
9 standardized, repeatable designs; streamlined deliverable review; incorporation of lessons-
10 learned from one unit into the other; common work crews and construction methods;
11 longer-term service arrangements supporting consistent program management, parts
12 strategy, and maintenance planning; and enhanced procurement leverage through larger,
13 coordinated equipment and materials purchases.

14 **Q. When will SPP interconnection requests be submitted for the CCGT projects?**

15 A. SPP interconnection requests will be submitted into the SPP 2028 CPP ICS cluster before
16 the end of year, ahead of the application window closing.

17 **Q. What is the status of project development at this time?**

18 A. The Project is currently in the procurement and preliminary engineering phase:

- 19 ▪ Evergy has executed a reservation agreement with Mitsubishi Power Americas
20 (“MPWA”) for a 501 J-Series Air Cooled (“JAC”) PIE for the Buchanan Bluffs
21 Energy Center Unit 2.
- 22 ▪ Evergy has secured an option to purchase the site.

- Evergy is preparing an air permit application and expects to receive the permit by the end of 2027 or early 2028.
- Evergy has issued a Limited Notice to Proceed to Kiewit Power Constructors (Kiewit), for engineering and long lead procurement activities and expects to issue a full notice to proceed (“FNTP”) to the PIE vendor and the EPC contractor in spring 2027, following a successful outcome in this case. The critical path is currently based on the timing of issuing FNTP to the PIE vendor and EPC contractor, expected in spring 2027.

Q. Provide a high-level project schedule for the Buchanan Bluffs Energy Center Unit 2 project.

A. A high-level project schedule is set out in the table below.

Buchanan Bluffs Energy Center Unit 2	Expected Completion
Site Control Complete	2026
SPP Large Generator Interconnection Application	2026
Environmental and Land Permitting Complete	2027
Design Spec & Engineering, Procurement, and Construction ("EPC") Award	Mid 2027
State Utility Regulatory Approvals	Spring 2027
Detailed Design and Engineering	Q4 2026
Construction Begins	2027
Major Equipment Delivery	2030
Construction Complete	2031
Testing and Commissioning Complete	2032
Commercial Operation	Summer 2032

Q. Does the Buchanan Bluffs Energy Center Unit 2 Project cross any utility facilities, railroad tracks, or underground facilities?

A. No. The Buchanan Bluffs Energy Center Unit 2 Project does not cross any utility facilities, railroad tracks, or known underground facilities.

1 **Q. What is the estimated construction schedule for the Buchanan Bluffs Energy Center**
2 **Unit 2 Project?**

3 A. The current project schedule contemplates beginning construction of the Buchanan Bluffs
4 Energy Center Unit 2 Project in 2027. This schedule is intended to support the
5 development, permitting, engineering, procurement, and construction activities necessary
6 to achieve the Project's targeted in-service date consistent with Evergy's resource planning
7 needs and the timing reflected in the Company's Integrated Resource Plan.

8 **Q. Please describe any common plant that will be included in the Buchanan Bluffs**
9 **Energy Center Unit 2 project.**

10 A. The Buchanan Bluffs Energy Center Unit 2 will be co-located with and developed jointly
11 alongside the essentially identical Buchanan Bluffs Energy Center Unit 1, which will be
12 owned by Evergy Kansas Central. Consistent with Evergy's "design once, build many"
13 development philosophy, the two facilities will share certain common plant and site
14 infrastructure.

15 The shared facilities are expected to include the switchyard and transmission
16 interconnection facilities, the natural gas lateral and metering station, water supply and
17 water treatment infrastructure, access roads, the control and administration building,
18 stormwater management infrastructure, security infrastructure, and construction laydown
19 and support areas.

20 Sharing these facilities avoids unnecessary duplication of infrastructure, creates
21 economies of scale, reduces overall capital costs, and promotes more efficient construction
22 and operation of the two co-located facilities. The costs associated with common plant
23 facilities will be allocated between the Buchanan Bluffs Energy Center Unit 1 and

1 Buchanan Bluffs Energy Center Unit 2 consistent with the ownership and use of the shared
2 assets.

3 **III. OWNER'S ENGINEER**

4 **Q. What company was selected as the Owner's Engineer ("OE") contractor for the**
5 **project?**

6 A. To maximize efficiencies through a repeated design approach, Burns & McDonnell
7 ("BMcD") was selected as the OE contractor. BMcD is also serving as the OE for Evergy's
8 development of the McNew and Chisholm Trail ("Viola") CCGTs at issue in Docket No.
9 EA-2025-0075 and will serve as the OE for the co-located Buchanan Bluffs Energy Center
10 Unit 1 being developed by Evergy Kansas Central.

11 **Q. Will Evergy use the same OE contractor for both the Buchanan Bluffs Energy Center**
12 **Unit 2 and Buchanan Bluffs Energy Center Unit 1?**

13 A. Yes. BMcD will serve as the OE for both the Buchanan Bluffs Energy Center Unit 1 and
14 the co-located Buchanan Bluffs Energy Center Unit 2. Using a common OE across the two
15 co-located units, as well as across Evergy's other advanced-class CCGT developments,
16 promotes execution efficiency, consistency, and economies of scale, consistent with
17 Evergy's "design once, build many" development philosophy.

18 **Q. Describe BMcD's ongoing role after EPC commissioning.**

19 A. BMcD will continue providing OE support throughout the project, including technical
20 oversight of the EPC contractor; participation in engineering design and submittal reviews;
21 responding to further requests for information and change orders; and coordinating with
22 Evergy on schedule and project controls. BMcD will monitor project progress against the
23 approved contractual baseline through variance tracking on both an activity and resource

1 basis, and will provide EPC field support, including monitoring the EPC contractor's
2 adherence to schedule, budget, and material management, and coordinating and monitoring
3 punch-list development and execution. BMcD also will provide warranty support for the
4 EPC and major-equipment suppliers, including identifying warranty issues and assisting
5 with coordinating claims.

6 **IV. SITE SELECTION**

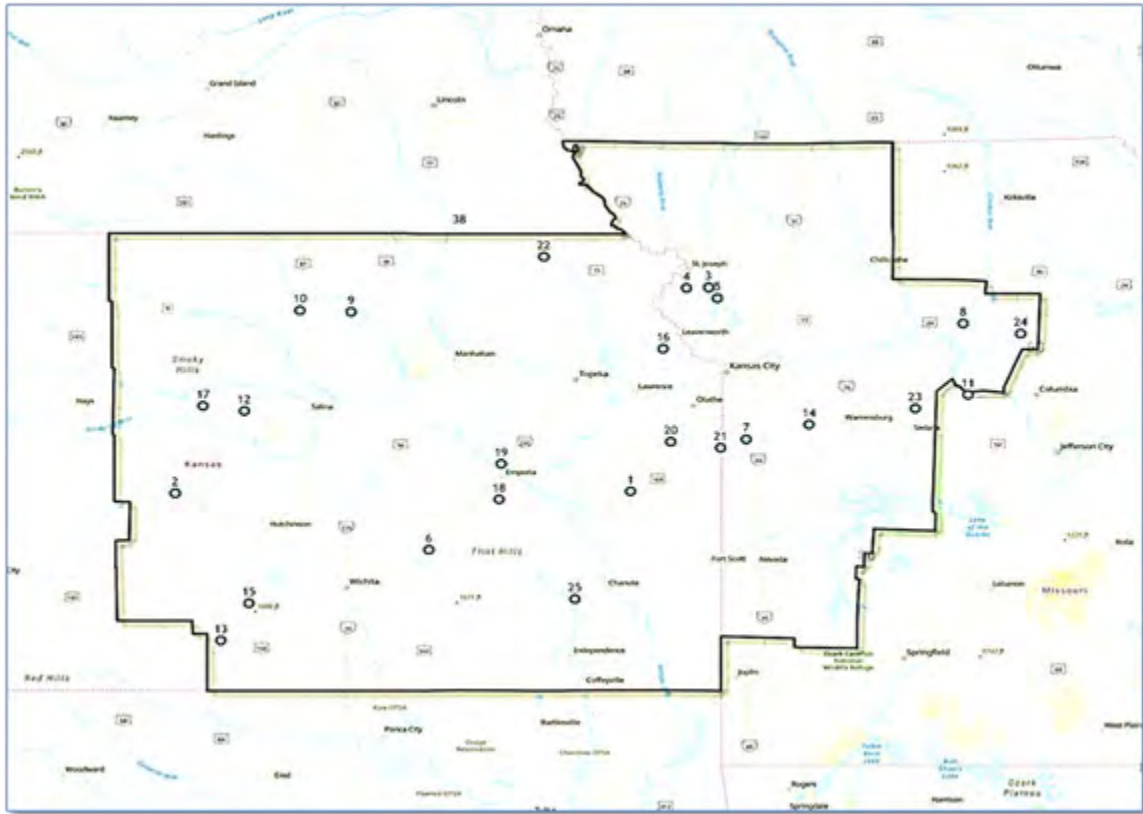
7 **Q. Was the Buchanan Bluffs site initially planned to accommodate more than one**
8 **generating unit?**

9 A. Yes. When Evergy acquired site control over the Buchanan Bluffs property for the
10 Buchanan Bluffs Energy Center Unit 2, it intentionally selected a parcel with sufficient
11 developable acreage, water access, natural gas lateral capacity, and electric interconnection
12 headroom to support the future addition of a second combined-cycle unit. Planning the
13 site for more than one unit allows the fixed costs of site development and shared facilities
14 to be spread across two projects, lowering the per-unit cost ultimately borne by customers.

15 **Q. Please describe the process Evergy used to select the Buchanan Bluffs Energy Center**
16 **Unit 1 and Buchanan Bluffs Energy Center Unit 2 site.**

17 A. Evergy hired 1898 & Co. to evaluate and rank potential sites for multiple additional ~710
18 MW CCGT units after Evergy's integrated resource planning identified a need for new
19 gas-fired generation to support load growth and meet increased SPP planning reserve
20 margin requirements. 1898 & Co. began by developing a scoring matrix with inputs to
21 reflect project priorities and identified "opportunity zones" within about three miles of
22 adequate transmission and gas infrastructure. From those opportunity zones, 1898 & Co.

then screened parcels for minimum siting requirements, identifying 25 candidate sites for comparative scoring.



1-Anderson (KS); 2-Barton (KS); 3-Buchanan (MO); 4-Buchanan Alternate (MO); 5-Buchanan-Sparta (MO); 6-Butler (KS); 7-Cass (Peculiar MO); 8-Chariton (MO); 9-Clay (KS); 10-Cloud (KS); 11-Cooper (MO); 12- Ellsworth (KS); 13-Harper (KS); 14-Johnson (MO); 15-Kingman (KS); 16-Leavenworth (KS); 17-Lincoln (KS); 18-Lyon (KS); 19-Lyon 2 (KS); 20-Miami (KS); 21-Miami 2 (KS); 22-Namaha (KS); 23-Pettis (MO); 24-Randolph (MO); 25-Wilson–Crooked Creek (KS)

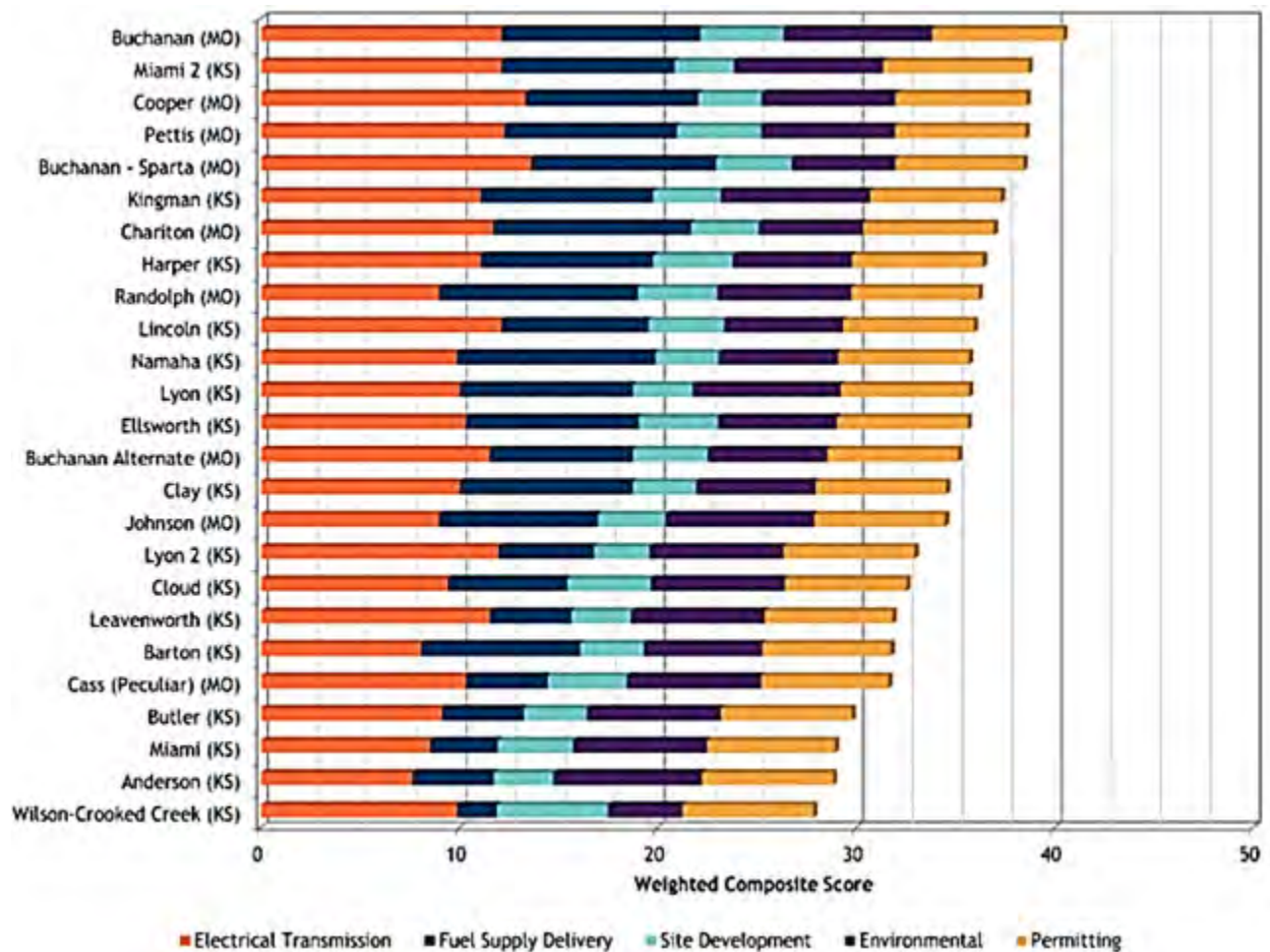
Q. What scoring criteria were used in the siting study?

A. A decision matrix was used to score each candidate site across twenty-six criteria. The criteria were grouped into five major categories with category weights, and the criteria within each category were assigned sub-weights. The five major categories (with corresponding category weights) were as follows:

1. Electric Transmission (30%): interconnection proximity; transmission system upgrade cost; average LMP (2029, 2039); interconnect substation.

2. Fuel Supply Delivery (20%): gas lateral proximity; gas availability.
3. Site Development (20%): community conflict; accessibility; constructability; land acquisition/control; usable area; number of parcels; nearest receptor; expandability; for-sale land; water availability.
4. Environmental (15%): wetlands; floodplains; archeological/cultural resource risk; sensitive species risk.
5. Permitting (15%): land use/zoning; air permitting; Class I areas; FAA notice criteria; nearest runway (satellite imagery).

The chart below shows the study's composite site scoring results.



1 **Q. What sites were shortlisted for the two CCGT projects?**

2 A. The sites shortlisted for the CCGT projects were the Buchanan (MO) and the Buchanan-
3 Sparta (MO) site.

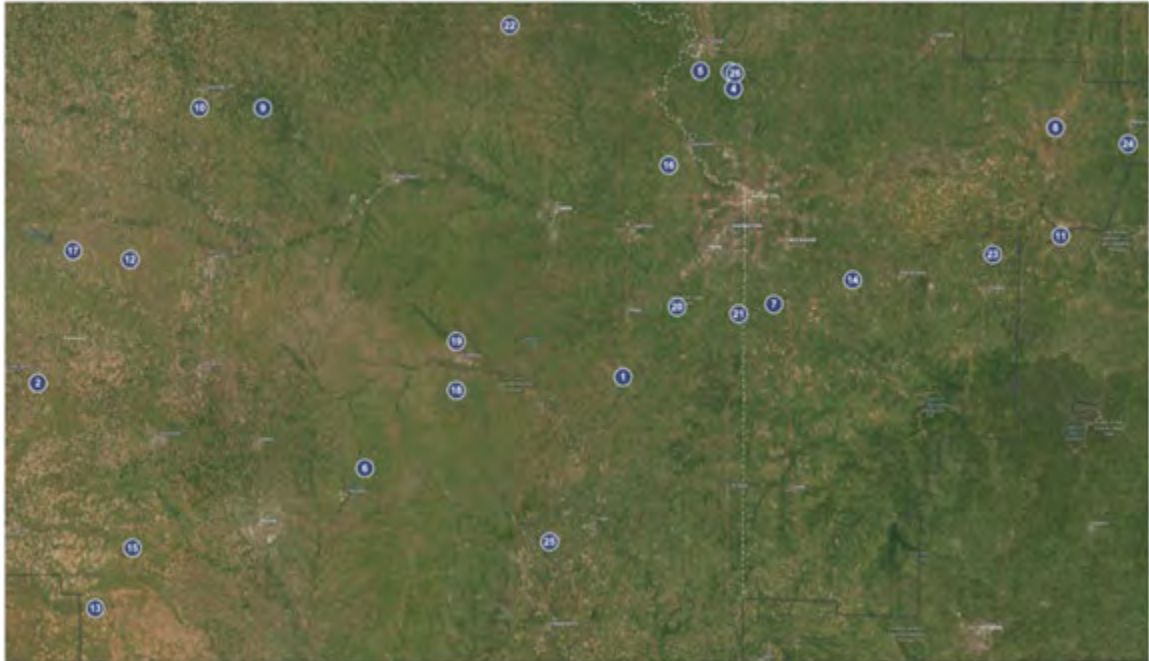
4 **Q. Was a revised siting study conducted in connection with the Buchanan Bluffs CCGT**
5 **projects?**

6 A. Yes. Evergy commissioned a revised siting study from 1898 & Co., marked Site Selection
7 Study - Revision 2 (August 27, 2026). This siting study is attached in Confidential
8 Schedule JKO-3,

9 **Q. Why was the revised study conducted?**

10 A. The revised study was conducted principally to add a newly identified candidate
11 site to the evaluation. The new site was identified after permitting concerns emerged at the
12 Buchanan (MO) and Buchanan-Sparta (MO) sites.

13 The original 2025 study evaluated 25 representative sites. In 2026, an
14 additional site – “Johnson 1,” in Buchanan County, Missouri – was identified and added
15 by addendum, bringing the total to 26 sites for comparative scoring. Below is a revised
16 map of the study area with the Johnson 1 site included.



1-Anderson (KS); 2-Barton (KS); 3-Buchanan (MO); 4-Buchanan Alternate (MO); 5-Buchanan-Sparta (MO); 6-Butler (KS); 7-Cass (Peculiar MO); 8-Chariton (MO); 9-Clay (KS); 10-Cloud (KS); 11-Cooper (MO); 12- Ellsworth (KS); 13-Harper (KS); 14-Johnson (MO); 15-Kingman (KS); 16-Leavenworth (KS); 17-Lincoln (KS); 18-Lyon (KS); 19-Lyon 2 (KS); 20-Miami (KS); 21-Miami 2 (KS); 22-Namaha (KS); 23-Pettis (MO); 24-Randolph (MO); 25-Wilson–Crooked Creek (KS); Johnson 1 (MO)

Q. Was the addition of Johnson 1 material to the study's conclusions?

A. Yes. As shown in the site scoring charts below, the Johnson 1 site scored as the highest-ranked site in both the one-unit and two-unit configuration categories, narrowly edging out the previously selected Buchanan site.

Figure 30 - Site Scoring Chart (One Unit)

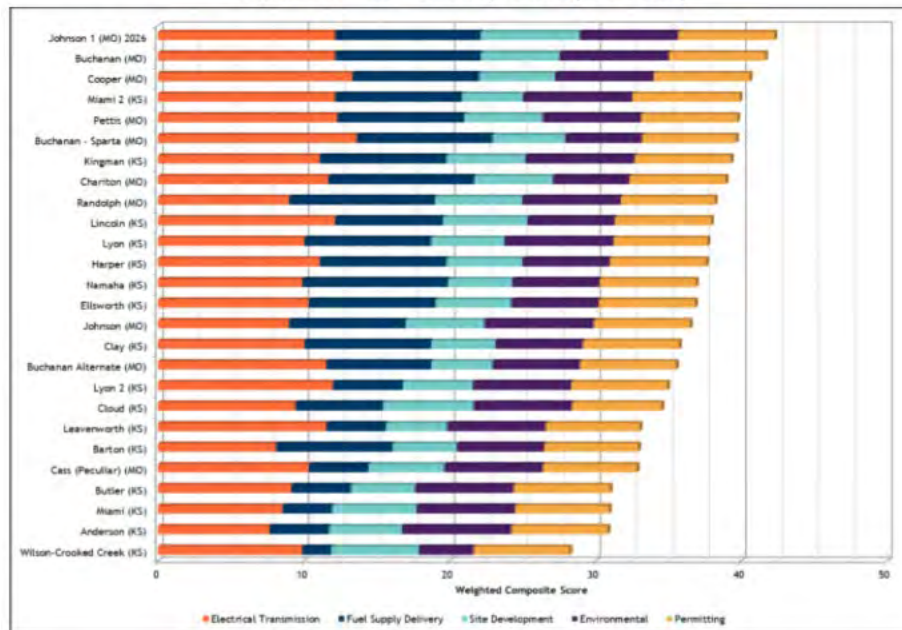
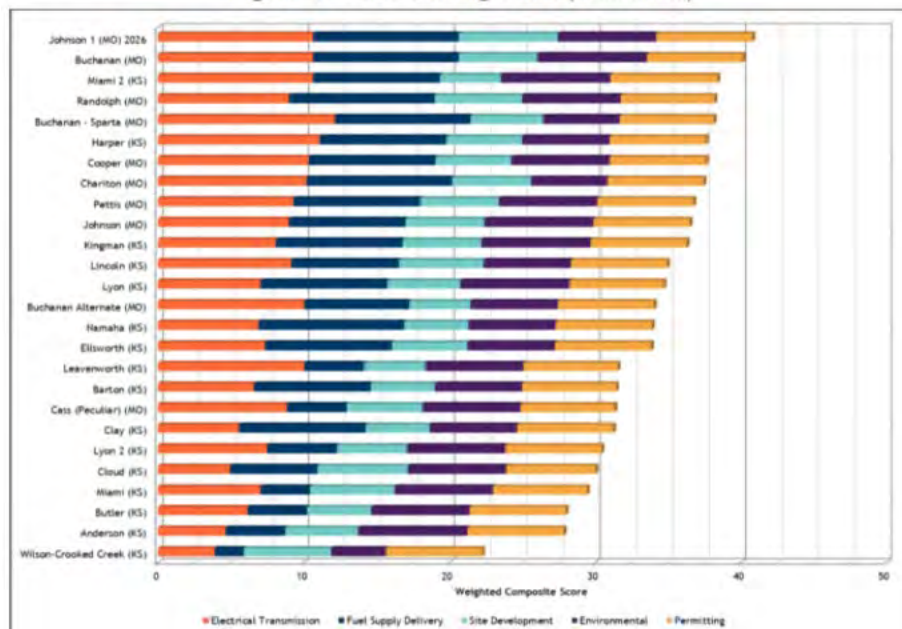


Figure 31 - Site Scoring Chart (Two Units)



1

2 **Q. Please describe the Johnson 1 site and summarize its ranking within the study.**

3 A. Johnson 1 is an approximately 169-acre single parcel under one owner. It is located along
 4 State Route E SE near Frazier in Buchanan County, Missouri. As previously stated,
 5 Johnson 1 was not part of the original 2025 study; 1898 & Co. added it in a 2026 addendum,

1 applying the same 26-criteria, five-category weighted scoring matrix used for the other 25
2 candidate sites. The Johnson 1 site eventually became the “Buchanan Bluffs Energy
3 Center” site.

4 **Q. What are the site’s electric transmission characteristics, and are the transmission**
5 **data independently derived for this site?**

6 A. The site is located approximately 0.3 miles from the Hawthorne (MO) to Saint Joseph 345
7 kV line, with an assumed line-tap interconnection on the Nashua-St. Joe segment.
8 Estimated transmission system upgrade costs are approximately ** [REDACTED] ** for a
9 1,500 MW injection – both low relative to the other candidate sites.

10 **Q. How strong is the site’s fuel supply position?**

11 A. Fuel supply is the site’s clearest strength. A 42-inch natural gas lateral owned by Tallgrass
12 Energy Partners LP and operated through Rockies Express Pipeline LLC (REX) is located
13 onsite. Under the study’s criteria, onsite lateral access and a REX connection each draw
14 the top score in their respective fuel-supply criteria (Natural Gas Lateral Proximity and
15 Natural Gas Availability). This fuel position is a significant part of why Johnson 1 is at the
16 top of the ranking.

17 **Q. What are the principal site development strengths and weaknesses?**

18 A. The strengths include a single parcel under a single owner (the simplest possible acquisition
19 posture), minimal slope change exceeding 15 percent, no existing structures, and good
20 access, approximately 0.29 miles from SE State Route E via a two-lane paved road.

21 The principal weakness is contiguous usable area. Of the approximately 169 total
22 acres, about 130 acres are usable, but only approximately 41 acres are contiguous.
23 Additional site constraints include a 69 kV transmission line crossing the northwest portion

1 of the parcel, a pipeline right-of-way through the central portion, two tree lines extending
2 into the property on the south and east borders, and approximately 18 acres of scattered
3 water and wetland setbacks.

4 **Q: Will Evergy take steps to address any possible concerns of nearby landowners**
5 **associated with the siting of the Buchanan Bluffs Energy Center Unit 2?**

6 A: Yes. Evergy will attempt to proactively meet with and engage openly and transparently
7 with nearby landowners and residents. If applicable, Evergy will enter into a Good
8 Neighbor Agreement with an adjacent property owner prior to construction of the Project.
9 The purpose of these Agreements is to address and resolve potential concerns related to the
10 siting, construction, and operation of the facility and to help ensure compatibility with
11 surrounding properties and land uses.

12 By attempting to work directly with nearby landowners and resolving concerns in
13 advance of construction, Evergy reduces the risk of future disputes, enhances community
14 acceptance, and improves overall project certainty. This approach supports efficient project
15 development while demonstrating Evergy's commitment to being a responsible neighbor
16 and minimizing potential impacts to the local community.

17 **V. POWER ISLAND EQUIPMENT**

18 **Q. How did Evergy select the Power Island Equipment ("PIE") for the Buchanan Bluffs**
19 **Energy Center Unit 2 project?**

20 A. During the execution of the Chisholm Trail ("Viola") and McNew projects, Evergy
21 conducted a competitive solicitation for the Power Island Equipment, which comprises the
22 major generating plant components, including the combustion turbine, generator,
23 emissions control equipment, and related auxiliary systems. The selected technology

1 demonstrated strong performance across key evaluation criteria, including fast-start
2 capability, deep turndown, and low-emissions operation, consistent with Evergy's system
3 reliability and environmental objectives.

4 Based on the results of Chisholm Trail ("Viola") and McNew request for proposals
5 and to maintain commonality in PIE across units, Evergy reserved the same PIE
6 configuration for the Buchanan Bluffs Energy Center Unit 2 with Mitsubishi Power
7 Americas ("MPWA"). This approach supports standardization, reduces execution risk, and
8 enhances cost and schedule predictability for customers.

9 **Q: Is Evergy using the same Power Island Equipment contract terms for the Buchanan**
10 **Bluffs Energy Center Unit 2 as were used for Chisholm Trail ("Viola") and McNew,**
11 **and are there benefits to doing so?**

12 A. Yes. Evergy is utilizing the same Power Island Equipment contract framework and
13 materially the same commercial terms for the Buchanan Bluffs Energy Center Unit 2 as
14 were negotiated and executed for Chisholm Trail ("Viola") and McNew. Using the same
15 contract terms allows Evergy to preserve provisions that were competitively secured prior
16 to further market escalation and that are favorable relative to current market conditions for
17 large gas fired generation equipment.

18 The existing contract terms provide Evergy with significant protections and
19 benefits, including fixed pricing provisions for equipment, detailed delivery and milestone
20 commitments, performance guarantees supported by liquidated damages, robust warranty
21 protections, and clear allocation of risk between Evergy and the supplier. These terms
22 reduce cost uncertainty, limit exposure to further escalation, and improve schedule
23 certainty compared to what is typically being offered in the current market.

1 In addition, the contract includes strong owner-favorable provisions related to
2 payment structure, change management, inspection rights, defect correction, and
3 termination for convenience, which provide Evergy with flexibility and leverage
4 throughout execution. The agreement also incorporates comprehensive performance
5 guarantees, extended warranty periods, and clearly defined remedies, which enhance
6 operational reliability and protect customers over the life of the facility.

7 Given current market conditions—where original equipment manufacturers face
8 significant demand, constrained production capacity, and increased bargaining power—
9 Evergy believes it would be unlikely to obtain terms of similar strength, pricing certainty,
10 and risk allocation if the equipment were re-bid today. By maintaining the same contract
11 terms for the Buchanan Bluffs Energy Center Unit 2, Evergy is able to lock in these
12 favorable provisions, mitigate execution risk, and deliver tangible benefits to customers.

13 **Q. Is the Mitsubishi J-Series Air-Cooled (“JAC”) combustion turbine both proven and**
14 **advanced?**

15 A. Yes. The JAC is an advanced-class, air-cooled machine derived from Mitsubishi’s steam-
16 cooled J-Series, using a high turbine-inlet temperature to deliver world-leading combined-
17 cycle efficiency around 64%, among the highest available for any power plant. At the same
18 time, it is commercially proven rather than developmental. The J/JAC fleet has more than
19 3.3 million hours of cumulative commercial operation, and the platform has an established
20 North American operating record, including the first M501JAC units in North America,
21 which have served the greater Chicago area and powered more than 1.2 million homes.
22 The air-cooled design also improves operability by detaching the gas turbine from the

1 bottoming cycle, enabling reduced start-up time while maintaining the performance of the
2 steam-cooled J-Series.

3 **Q. Has a Reservation Agreement been executed?**

4 A. Yes. A Reservation Agreement was executed on July 21st, 2025. This agreement is
5 attached as Confidential Schedule JKO-6.

6 **Q. What purpose do Reservation Agreements serve?**

7 A. Reservation Agreements secure MPWA manufacturing and delivery slots for the
8 combustion turbines ahead of the definitive supply agreement, protecting Evergy's
9 construction schedule and in-service date in a market where advanced-class turbine slots
10 are constrained and lead times are long. These agreements allow Evergy to hold its place
11 in the production queue while required regulatory approvals are completed.

12 **Q. What obligations do the Reservation Agreements impose on Mitsubishi?**

13 A. Mitsubishi must provide assurances that necessary manufacturing slot space has been
14 irrevocably reserved and that the equipment can be delivered on or before the scheduled
15 dates for the projects.

16 **Q. What is the expected MW output of the CCGT with the Mitsubishi PIE?**

17 A. Each CCGT is designed with a nominal output of 710 MW. The actual maximum output
18 of the units will depend on the following variable factors and conditions: ambient
19 temperature, relative humidity, fuel Btu content of fuel delivered at the unit, and number
20 of operating hours since the last maintenance interval. By way of illustration, in a new and
21 clean condition, both projects would be expected to generate approximately 710 MW each,
22 based on ISO ambient conditions of 58.3 degrees Fahrenheit and 63.4% relative humidity.

1 Under summer conditions of 81.2 degrees Fahrenheit and 58.7% relative humidity, both
2 projects would be expected to generate approximately 705 MW each.

3 **Q. Is the Mitsubishi JAC gas turbine hydrogen capable?**

4 A. Yes. By design, the gas turbine is capable of approximately 30% hydrogen firing, with the
5 capability of supporting 100% hydrogen firing in the future with upgrades.

6 **Q. How will Evergy manage long-term maintenance associated with the new CCGT?**

7 A. Because self-performing major long-term maintenance is not a practical or effective near-
8 term option, given the complexity of advanced-class gas turbines and the limited
9 availability of alternate parts suppliers, Evergy is negotiating and expects to enter into a
10 long-term service agreement (“LTSA”) with MPWA for turbine maintenance. The LTSA
11 is expected to define the scope of major maintenance activities and provide a variable-fee
12 structure tied to accumulated operating hours. Outside the LTSA, Evergy will manage
13 major maintenance for the HRSG and other balance-of-plant equipment through its
14 ongoing O&M program, consistent with the approach used at other Evergy plants. Because
15 the Buchanan Bluffs Energy Center Unit 2 uses the same original equipment manufacturer
16 and substantially similar turbine technology as Chisholm Trail (“Viola”) and McNew,
17 Evergy can coordinate LTSA planning, spare-parts strategy, and maintenance practices
18 across substantially similar units, which improves cost predictability and reduces execution
19 risk because of parts commonality.

20 **VI. ENGINEER, PROCURE, AND CONSTRUCT CONTRACTOR**

21 **Q. How was the EPC contractor selected?**

22 A. Evergy selected Kiewit as the EPC contractor for the Buchanan Bluffs Energy Center Unit
23 2 project. Consistent with Evergy’s “design once, build many” approach, Evergy carried

1 forward the same EPC contractor, OE, and PIE supplier that was used for the Chisholm
2 Trail (“Viola”) and McNew CCGTs in Docket No. EA-25-0075, rather than conducting a
3 new competitive solicitation for this unit. Kiewit was originally selected through the
4 competitive RFP process undertaken for those prior projects. Maintaining the same
5 contractor across multiple projects units promotes execution efficiency, reduces
6 development and execution risk, and supports greater cost and schedule predictability for
7 customers by relying on proven contractors, technology, and contractual arrangements that
8 have already been evaluated and approved by the Commission. Kiewit’s indicative
9 estimate is attached as Confidential Schedule JKO-4

10 **Q: Is Evergy using the same EPC contract terms for the Buchanan Bluffs Energy Center**
11 **Unit 2 as were used for Chisholm Trail (“Viola”) and McNew, and are there benefits**
12 **to doing so?**

13 A: Yes. Evergy is using the same EPC contract framework and materially the same
14 commercial and risk allocation terms for the Buchanan Bluffs Energy Center Unit 2 as
15 were negotiated and executed for Chisholm Trail (“Viola”) and McNew projects.
16 Maintaining these contract terms allows Evergy to preserve a set of provisions that were
17 competitively secured under earlier market conditions and that compare favorably to those
18 typically available in the current EPC marketplace.

19 The EPC contract establishes a single point of responsibility for engineering,
20 procurement, and construction, includes a defined scope of work, and provides robust
21 project controls, including detailed scheduling requirements, earned-value management,
22 and comprehensive cost and progress reporting. These provisions enhance transparency,
23 improve schedule certainty, and support disciplined project execution.

1 The contract also contains strong owner-favorable protections that are increasingly
2 difficult to obtain in today's market, including meaningful liquidated damages for schedule
3 and performance outcomes, comprehensive quality assurance and warranty obligations,
4 clearly defined change-management processes, and well-established rights for Evergy to
5 inspect work, require correction of defects, and enforce performance standards. In addition,
6 the contract includes defined limits on reimbursable costs, detailed milestone-based
7 payment structures, and financial assurance provisions that reduce credit and execution
8 risk.

9 Given current industry conditions—characterized by high demand for experienced
10 EPC contractors, constrained labor availability, and increased contractor leverage—Evergy
11 believes it would be challenging to newly negotiate EPC terms that provide a comparable
12 level of cost predictability, risk allocation, and owner protections. By using the same EPC
13 contract terms for the Buchanan Bluffs Energy Center Unit 2, Evergy is able to leverage a
14 proven and Commission reviewed contractual framework, reduce execution risk, and
15 deliver tangible benefits to customers through greater cost and schedule certainty.

16 **Q. Why use an EPC contractor in the first place?**

17 A. A project of this size is a substantial undertaking, and Evergy does not have the in-house
18 capability necessary to self-execute the engineering, procurement, and construction of a
19 facility of this type. Engaging an EPC contractor that can perform these functions under a
20 single contract consolidates responsibility with a single, specialized contractor, is cost-
21 effective, and is common within the power-generation industry for projects of this kind. It
22 also allows Evergy to obtain firm price, schedule, and performance commitments backed
23 by the contractor's guarantees, liquidated damages, and warranties.

1 **Q. Is there just one form of EPC contracting?**

2 A. No. There are several EPC contracting approaches, and the suitability of each depends
3 largely on the nature of the project. From an owner’s perspective, fixed-price contracts are
4 generally preferred because of the cost certainty they provide. Where a project’s scope of
5 work is uncertain and likely to change, however, EPC contractors will either decline to
6 contract on a fixed-price basis or will do so only in exchange for a significant risk premium
7 added to the price. By contrast, where a project has a well-defined scope and presents an
8 acceptable risk of scope changes, EPC contractors are more willing to contract on a fixed-
9 price basis without charging a significant premium.

10 **Q. What EPC contracting strategy is being utilized for the projects in this case?**

11 A. Eversource is using a fixed-price (with certain exceptions), fixed-schedule form of EPC
12 contract that reflects a detailed, well-defined scope of work. The contract establishes a
13 single point of responsibility for engineering, procurement, and construction of the Project
14 and requires the contractor to complete construction by the contracted completion date or
15 pay liquidated damages as defined in the commercial specifications. Consistent with the
16 owner’s-engineer, power-island-equipment, and EPC structure, certain major equipment is
17 procured by Eversource outside the EPC scope, and the EPC contract reflects those defined
18 exceptions. The contract also includes robust project controls—such as detailed scheduling
19 requirements, earned-value management, and comprehensive cost and progress
20 reporting—together with quality-assurance and warranty obligations, defined change-
21 management processes, milestone-based payment structures, and financial-assurance
22 provisions.

1 **Q. Why did Evergy elect to use this form of EPC contract?**

2 A. The EPC strategy Evergy has adopted is expected to yield the lowest reasonable cost with
3 an adequate level of risk mitigation. A fixed-price, fixed-schedule structure places the risk
4 of construction cost overruns and schedule delay primarily on the contractor rather than on
5 customers, and it provides firm commitments backed by liquidated damages, warranties,
6 and performance guarantees. In addition, by carrying forward the contract framework and
7 terms secured for Chisholm Trail (“Viola”) and McNew, Evergy preserves owner-
8 favorable protections that were competitively secured under earlier market conditions and
9 that would be difficult to replicate in the current EPC marketplace — characterized by high
10 demand for experienced contractors, constrained labor availability, and increased
11 contractor leverage — thereby delivering greater cost and schedule certainty to customers.

12 **VII. COST ESTIMATES**

13 **Q. How did Evergy develop cost estimates for the projects?**

14 A. The Company developed the overall cost estimate for the Buchanan Bluffs Energy Center
15 Unit 2 using a combination of executed agreements, actual contractor pricing, and
16 internally developed estimates for the Project’s major cost components.

17 The two primary cost components were developed based on:

- 18 ▪ An indicative EPC pricing estimate provided by Kiewit for engineering, procurement,
19 and construction services; and
- 20 ▪ Pricing set forth in the Power Island Equipment reservation agreement with Mitsubishi
21 Power Americas (“MPWA”), which reflects the costs for the major generating
22 equipment, including the combustion turbine, generator, emissions control equipment,
23 and related auxiliary systems.

1 In addition, the total Project cost includes estimates for other necessary project
2 elements, including owner-furnished equipment, balance-of-plant costs not included in the
3 EPC scope, permitting and regulatory compliance, construction management, startup and
4 commissioning support, and contingency. These costs were developed using Evergy's
5 internal cost-estimating practices, prior project experience, and vendor-provided
6 information. Collectively, these inputs result in a comprehensive and reasonable estimate
7 of the cost to construct and place the Buchanan Bluffs Energy Center Unit 2 into service.

8 **Q. What is the current estimate of total capital costs to complete the Buchanan Bluffs**
9 **Energy Center Unit 2 project, and what costs are included in that total?**

10 A. The current capital cost estimate for Buchanan Bluffs Energy Center Unit 2 is
11 approximately **[REDACTED]** which reflects the exclusion of any allowance for
12 funds used during construction ("AFUDC") and the effect of any construction work in
13 progress ("CWIP") allowed in rate base. This amount includes **[REDACTED]**
14 associated with the generation portion of the project, or roughly **[REDACTED]** per kW. It
15 also includes **[REDACTED]** in estimated interconnection facilities costs and the cost of
16 required transmission network upgrades, which is currently estimated at **[REDACTED]**.
17 The itemized capital cost estimate for the Buchanan Bluffs Energy Center Unit 2 project is
18 attached as Confidential Schedule JKO-5. The total estimate of capital costs for the
19 Buchanan Bluffs Energy Center Unit 2 project includes the EPC estimate and the
20 identification of expected costs for all items outside of the EPC contract.

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1 **Q: Why have costs escalated for the Buchanan Bluffs Energy Center Unit 2, compared**
2 **to the cost estimates provided for Chisholm Trail (“Viola”) and McNew in Docket No.**
3 **EA-2025-0075?**

4 A: As discussed in detail in the direct testimony of Company witness Jason Humphrey in this
5 proceeding, the increase in estimated costs for the Buchanan Bluffs Energy Center Unit 2
6 reflects changes in supply and demand market conditions since the estimates for Chisholm
7 Trail (“Viola”) and McNew were developed, including inflationary pressures, equipment
8 and construction cost escalation, and broader supply chain and capacity constraints
9 affecting the power generation industry. Mr. Humphrey addresses these drivers and their
10 consideration in Evergy’s planning and cost evaluation.

11 **Q. Based on your extensive professional experience in the power plant construction**
12 **industry, what have you observed in the marketplace in recent years regarding**
13 **natural gas-fired electric plant construction cost trends?**

14 A. I have observed a significant upward trend in construction costs for natural gas-fired
15 electric generating facilities in recent years. Prior to the two projects addressed in Docket
16 No. EA-2025-0075, the most recent project for which I provided oversight achieved
17 commercial operation in 2023, and that project experienced substantial cost increases as it
18 neared completion.

19 These cost pressures began during the COVID-19 pandemic and were further
20 exacerbated by Russia’s invasion of Ukraine, which disrupted global supply chains and
21 contributed to material and labor inflation. Since that time, costs have continued to increase
22 as electric utilities across the country have announced plans to construct new natural
23 gas-fired generating units.

1 This elevated level of industry-wide demand has further driven cost escalation, as
2 both Power Island Equipment suppliers and EPC contractors face capacity constraints and
3 are operating at or near full utilization to meet current demand.

4 **Q. What information will Evergy review to assess the reasonableness of the cost estimate**
5 **as the projects advance toward execution?**

6 A. We will continue to monitor comparable public utility commission filings, including
7 certificate of convenience and necessity (“CCN”) requests, predetermination filings, and
8 published Integrated Resource Plans (“IRPs”), for projects with similar configurations and
9 equipment, and will use those data points to benchmark the reasonableness of the EPC cost
10 estimates and the overall project cost trajectory as the projects advance toward execution.

11 **VIII. RISK MITIGATION**

12 **Q. What is risk mitigation, generally?**

13 A. Risk mitigation is the systematic process of identifying the risks that could adversely affect
14 a project, assessing the likelihood and potential impact of each, and then implementing
15 measures to eliminate, reduce, transfer, or otherwise manage those risks. For a major
16 generation project, risk mitigation focuses principally on the risks that could increase
17 capital cost, delay the in-service date, or impair the facility’s performance once operating.
18 It is not a single action but a continuous discipline applied from project development
19 through procurement, construction, and commissioning. The objective is not to eliminate
20 all risk — which is neither possible nor cost-effective — but to allocate each risk to the
21 party best able to manage it and to reduce the Company’s and customers’ exposure to cost
22 and schedule outcomes that are within Evergy’s ability to control.

1 **Q. How has Evergy mitigated the risks that could affect project schedules and costs in**
2 **connection with the Buchanan Bluffs Energy Center Unit 2 project?**

3 A. Evergy has employed a layered strategy in which each element addresses a distinct
4 category of risk. First, Evergy engaged an experienced Owner's Engineer, Burns &
5 McDonnell, to provide technical and project-management oversight, independent cost and
6 schedule review, and support throughout procurement and construction. Second, Evergy
7 procured the Power Island Equipment through a competitive process from an established
8 original equipment manufacturer, Mitsubishi Power Americas, and has secured a
9 production reservation to protect the manufacturing slot against the current backlog for
10 advanced-class gas turbines. Third, Evergy is contracting for the balance of the facility
11 through a fixed-price, fixed-schedule EPC contract that shifts defined cost and schedule
12 risk to the contractor and includes liquidated damages and performance guarantees. Fourth,
13 Evergy conducted a rigorous siting study to select a site that reduces infrastructure,
14 interconnection, and permitting risk. Finally, the project cost estimates include
15 contingencies scaled to the maturity of the current estimate, and Evergy is negotiating a
16 Long-Term Service Agreement with the turbine original equipment manufacturer to
17 manage long-term maintenance cost and availability risk.

18 **Q. What schedule-related risks does the Company view as most consequential, and how**
19 **are those risks addressed?**

20 A. The most consequential schedule risks relate to long-lead equipment, transmission
21 interconnection, and construction labor. The single greatest driver is the availability of the
22 advanced J-Class gas turbine and other long-lead items such as the heat recovery steam
23 generator, the generator step-up transformer, and other large transformers, all of which face

1 extended manufacturing lead times and constrained global supply. Evergy addresses this
2 risk by securing an early production slot with Mitsubishi through the Power Island
3 Equipment procurement rather than waiting for a completed EPC award. The second risk
4 is the timing of SPP-assigned Network Upgrades and Interconnection Facilities; Evergy
5 mitigates this by selecting a site with favorable proximity to existing transmission. The
6 third is the availability of skilled construction labor in the relevant market, which Evergy
7 addresses through the EPC contractor's mobilization planning and through the fixed-
8 schedule contract structure with liquidated damages that incentivizes on-time completion.

9 **Q. How has Evergy's siting strategy for the Buchanan Bluffs Energy Center Unit 2**
10 **mitigated cost and schedule risk?**

11 A. The siting strategy for the Buchanan Bluffs Energy Center Unit 2 directly reduced both
12 cost and schedule risk. Evergy, with support from 1898 & Co., evaluated 25 candidate sites
13 against 26 weighted criteria across five categories, which produced a site in Buchanan
14 County, Missouri, that offers proximity to natural gas supply, water, and existing
15 transmission infrastructure, and that is co-located with the companion Buchanan Bluffs
16 Energy Center Unit 1 unit being developed by Evergy Kansas Central. Co-location allows
17 shared development, infrastructure, and interconnection efficiencies that would not be
18 available at a greenfield site, reducing both the cost and the schedule associated with site
19 development. Additionally, Evergy has executed a Limited Notice to Proceed ("LNTP")
20 for long lead time equipment and engineering with Kiewit, see Confidential Schedule JKO-
21 7.

1 **Q. Are the contingencies reflected in the project cost estimates designed to cover all risks**
2 **that could increase cost?**

3 A. No. That is not the purpose of contingency funds in project management. Contingency
4 funding is used to reasonably mitigate unplanned increases in project cost, whether caused
5 by known risks or unforeseen risks. It recognizes that large construction projects spanning
6 several years can be adversely affected by events beyond Evergy's control. The Company
7 has proposed a contingency fund that would provide a reasonable level of mitigation of
8 known and unknown risks for the Project, but it is possible some of these risks, if realized,
9 could cause cost increases beyond the contingencies included in the cost estimates. Evergy
10 will not seek recovery of any unused project contingency.

11 **Q. Does the design of Buchanan Bluffs Energy Center Unit 2 reflect storm resilience and**
12 **hardening considerations?**

13 A. Yes. The Buchanan Bluffs Energy Center Unit 2 is being designed to applicable codes and
14 standards for structural, wind, and flood loading, and the site development incorporates
15 grading and drainage to manage stormwater and flood risk. Critical equipment and
16 structures are designed with resilience considerations appropriate to the site's
17 environmental and meteorological conditions, including severe-weather exposure
18 characteristic of the region. The Buchanan Bluffs Energy Center Unit 2's current design
19 allows the facility to continue conducting normal operations in temperatures as low as
20 approximately -20 degrees Fahrenheit.

1 **IX. NATURAL GAS FUEL SUPPLY**

2 **Q. Please provide an overview of the Company's plan to supply natural gas fuel to the**
3 **Buchanan Bluffs Energy Center Unit 2.**

4 A. The Buchanan Bluffs Energy Center Unit 2 will be fueled by pipeline-delivered natural
5 gas. The Company's fuel supply plan for the unit is built on the same framework Evergy
6 is implementing for its other new natural gas generation. That plan is described in detail in
7 the direct testimony of Company witness J.P. Meitner. My testimony addresses the plan
8 from a project-development perspective, principally the pipeline infrastructure required to
9 connect the facility and the procurement of transportation and fuel-supply arrangements.
10 Developing this plan consistently with the co-located Buchanan Bluffs Energy Center Unit
11 1 and with Evergy's other natural gas generation, including Chisholm Trail (Viola) and
12 McNew, helps ensure reliable capacity and energy for the Buchanan Bluffs Energy Center
13 Unit 2 while lowering fuel-price volatility for customers.

14 **Q. How much natural gas will the Buchanan Bluffs Energy Center Unit 2 require?**

15 A. Consistent with the virtually identical co-located Buchanan Bluffs Energy Center Unit 1
16 and with Evergy's other announced CCGTs, the Buchanan Bluffs Energy Center Unit 2
17 will require natural gas at a maximum daily quantity of approximately 116,000 dekatherms,
18 delivered at a pressure of approximately 850 psig. Mr. Meitner's testimony addresses the
19 facility's fuel requirements and corresponding transportation and delivery arrangements in
20 greater detail.

1 **Q. How will Evergy secure natural gas transportation for the Buchanan Bluffs Energy**
2 **Center Unit 2, and why is firm transportation important?**

3 A. Evergy will select the transportation arrangement for the Buchanan Bluffs Energy Center
4 Unit 2 through a competitive request for proposal (“RFP”) process, as described in Mr.
5 Meitner’s testimony. Our objective is to secure firm natural gas transportation service,
6 which affords the shipper the highest priority on the pipeline and preserves access to
7 contracted capacity even during peak demand periods. That is critical to ensuring the facility
8 can generate when it is needed most. Fuel firming also supports the unit’s accredited
9 capacity under SPP’s resource adequacy rules, which place significant weight on resources
10 that minimize outages caused by fuel unavailability, considerations that are most
11 consequential during winter peak conditions.

12 **Q. What pipeline diversity considerations apply given the Buchanan Bluffs Energy**
13 **Center Unit 2’s co-location with the Buchanan Bluffs Energy Center Unit 1?**

14 A. As previously stated, the Buchanan Bluffs Energy Center Unit 2 will be co-located with
15 the virtually identical Buchanan Bluffs Energy Center Unit 1, which is the subject of a
16 companion Predetermination proceeding before the KCC which will be filed
17 simultaneously with this docket. As described in Mr. Meitner’s testimony, the specific
18 pipeline arrangements for the Buchanan Bluffs Energy Center Unit 2 will be determined
19 through the competitive RFP process, and Evergy will give particular value to
20 interconnection opportunities with pipelines to which it does not have direct exposure
21 today, thereby enhancing the diversity of supply for Evergy’s natural gas generation fleet.

1 **Q. Will Evergy use natural gas storage and forward molecule procurement to serve the**
2 **Buchanan Bluffs Energy Center Unit 2?**

3 A. Yes. As described in Mr. Meitner’s testimony, the fuel supply plan for the new combined-
4 cycle generation contemplates evaluating existing and future storage projects available on
5 the selected transportation system. This evaluation requires first determining the
6 transportation provider so that the same service can be used to move any storage gas to the
7 facility, together with a disciplined molecule procurement strategy. That strategy layers
8 term commitments over time, procuring a portion of forecasted requirements on a mid-
9 term basis, utilizing probabilistic modeling to diversify pricing points and reduce customer
10 exposure to short-term market volatility relative to purchasing all volumes in the SPP day-
11 ahead and real-time markets. Evergy will continue to develop this plan through ongoing
12 discussions with Commission Staff and the Office of the Public Counsel (“OPC”).

13 **X. SOUTHWEST POWER POOL (“SPP”) GENERATOR INTERCONNECTION**
14 **COSTS**

15 **Q. What is the Southwest Power Pool and what does it control and mandate as it relates**
16 **to the new CCGT projects?**

17 A. The Southwest Power Pool (“SPP”) is the regional transmission organization (“RTO”)
18 that operates and plans the bulk electric grid across much of the central part of the United
19 States. SPP is responsible for maintaining reliability, administering regional transmission
20 planning processes, and coordinating wholesale power markets across its footprint. SPP
21 also administers the generation interconnection process and determines the transmission
22 facilities and upgrades necessary to reliably integrate new generating resources into the
23 regional transmission system. Under SPP's Open Access Transmission Tariff ("OATT"),
24 the interconnection of new generating resources is now coordinated through the

1 Consolidated Planning Process ("CPP"), which integrates regional transmission planning
2 and generation interconnection into a unified framework for identifying transmission
3 needs and facilitating the connection of new generation resources.

4 **Q. Explain the difference between Interconnection Facilities and Network Upgrades?**

5 A. Interconnection Facilities are the equipment needed to physically and electrically connect
6 a generating facility to the transmission system.

7 Network Upgrades are transmission system improvements required to maintain reliability
8 and system performance following the addition of a new generating resource.

9 Historically, these upgrades were identified through project-specific generator
10 interconnection studies. Under the CPP framework, many transmission upgrades may be
11 identified proactively through regional transmission planning assessments and developed
12 in advance of individual interconnection requests, thereby reducing the need for project-
13 specific network upgrades and ideally improving cost certainty for generation developers.

14 **Q. What process does SPP use to identify required network upgrades?**

15 A. Under the CPP, SPP evaluates transmission needs through coordinated long-term and
16 near-term planning assessments that consider projected load growth, generation
17 expansion, reliability requirements, and anticipated interconnection needs. These
18 assessments include both the annual CPP-10 planning horizon and the longer-term CPP-
19 20 planning horizon.

20 A generation developer seeking to interconnect a new facility must submit a
21 Generator Interconnection Request ("GIR"), and SPP will evaluate the request under its
22 Generator Connection Process. However, the interconnection evaluation is performed
23 within the broader CPP framework, which is intended to reduce study uncertainty,

1 minimize restudies, and provide greater transparency regarding transmission upgrade
2 requirements and associated costs. As part of the Generator Connection Process, the
3 Interconnection Cluster Study (“ICS”) is a single-phase process that evaluates steady-
4 state reliability, stability, and short-circuit impacts and identifies required Interconnection
5 Facilities, Network Upgrades, and other Directly Assigned Upgrade Cost facilities
6 needed to connect at each specific point of interconnection.

7 **Q. How are network upgrades on non-SPP systems identified and costed?**

8 A. The interconnection of a new generating facility may affect neighboring transmission
9 systems outside of SPP's footprint. As a result, SPP coordinates with affected
10 transmission providers and neighboring regional transmission organizations when
11 necessary to evaluate reliability impacts beyond the SPP system. These "affected-system"
12 reviews identify any transmission modifications that may be required on neighboring
13 systems to accommodate the proposed interconnection while maintaining reliability. Any
14 such requirements are coordinated between SPP and the affected transmission owners
15 and are incorporated into the interconnection process as applicable.

16 **Q. What is the JTIQ Study portfolio?**

17 A. The Joint Targeted Interconnection Queue (“JTIQ”) portfolio is a coordinated set of
18 transmission upgrades developed jointly by SPP and the Midcontinent Independent
19 System Operator (“MISO”) to address significant transmission constraints along the SPP-
20 MISO seam. These upgrades are designed to facilitate the interconnection of new
21 generating resources and improve transfer capability between the two regional systems.
22 A generator requesting interconnection may be assigned a charge associated with the cost
23 of the JTIQ portfolio.

1 **Q. When are network upgrades expected to be required for the new CCGT projects,**
2 **and when will Evergy know the assigned upgrades and costs?**

3 A. Evergy will be submitting a GIR for inclusion in the SPP 2028 CPP ICS cluster. SPP's
4 schedule anticipates that generator interconnection agreements for the 2028 CPP ICS
5 requests will be completed by August 4, 2028.

6 **Q. How did Evergy develop an estimate for SPP system Network Upgrade costs for this**
7 **filing?**

8 A. Evergy engaged 1898 & Co. evaluate the system impacts and identify potential network
9 upgrades that could be partially or fully assigned to the CCGT projects.

10 **Q. What are 1898 & Co.'s estimated interconnection costs for the Buchanan Bluffs**
11 **Energy Center Unit 2 project?**

12 A. The 1898 & Co. transmission injection study indicates that system upgrades would be
13 required to accommodate the new generation, with estimated upgrade costs of
14 approximately ** [REDACTED] ** for 1,500 MW of capacity or ** [REDACTED] ** per
15 unit.

16 **Q. How does Evergy plan to manage and mitigate interconnection-related risks during**
17 **construction?**

18 A. A range of tools will be utilized to ensure compliance with SPP reliability requirements
19 while keeping costs reasonable and prudent. Risk reduction was addressed early in the
20 development process through siting decisions that favor locations with fewer costly
21 expected network upgrades.

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1 **Q. How does 1898 & Co.’s analysis help manage risk and uncertainty in this area?**

2 A. The analysis helps Evergy estimate the potential magnitude of system network upgrade
3 costs and supports project optimization and prudent decision making, even though the
4 nature and cost of final upgrades remain uncertain.

5 **XI. IN-SERVICE DATES AND STATUS REPORTS**

6 **Q. When is Buchanan Bluffs Energy Center Unit 2 expected in service, and what in-**
7 **service criteria does the Company propose?**

8 A. The Buchanan Bluffs Energy Center Unit 2 has a targeted commercial operation date
9 before summer 2032. In general terms, the Buchanan Bluffs Energy Center Unit 2 will be
10 considered in service when it has completed and passed its performance testing and Evergy
11 accepts plant turnover from the EPC contractor. Consistent with the criteria Evergy has
12 proposed for comparable generating units, the Company proposes that the Buchanan Bluffs
13 Energy Center Unit 2 be considered in service when:

- 14 (1) all major construction work is complete;
- 15 (2) all pre-operational tests have been successfully completed;
- 16 (3) the unit is in compliance with air permit requirements for operation;
- 17 (4) the unit successfully demonstrates its ability to initiate the proper start sequence,
18 resulting in the unit operating from zero (0) rpm (or turning gear) to full load when
19 prompted at a location (or locations) from which it is normally operated;
- 20 (5) the unit successfully demonstrates its ability to initiate the proper shutdown
21 sequence from full load, resulting in zero (0) rpm (or turning gear) when prompted at a
22 location (or locations) from which it is normally operated;

1 (6) the unit successfully demonstrates its ability to operate at minimum load for one
2 (1) hour;

3 (7) the unit successfully demonstrates its ability to operate at or above 95% of nominal
4 capacity for four (4) continuous hours;

5 (8) the unit successfully demonstrates its ability to produce an amount of energy
6 (MWh) within a 72-hour period that results in a capacity factor of at least 30% during the
7 period, calculated as capacity factor = (MWh generated in 72 hours) ÷ (nominal capacity
8 × 72 hours); and

9 (9) sufficient transmission interconnection facilities exist for the total plant design net
10 electrical capacity in accordance with the SPP Interconnection Agreement

11 **Q. Will Evergy provide periodic reports over the course of construction in order to keep**
12 **the Commission, Commission Staff, OPC, and other stakeholders apprised of the**
13 **Project's status?**

14 A. Yes. Evergy proposes to provide periodic written status reports to the Commission, Staff,
15 OPC, and other stakeholders over the course of construction on a quarterly basis which will
16 address project schedule, cost, and significant developments or risk items. These reports
17 will keep the Commission and stakeholders apprised of the progress of Buchanan Bluffs
18 Energy Center Unit 2 and of any material changes, and will support ongoing oversight of
19 the project's cost and schedule as it advances toward commercial operation.

20 XII. CONCLUSION

21 **Q. Please summarize your testimony.**

22 A. My testimony supports the Applicants' request for a certificate of convenience and
23 necessity of the Buchanan Bluffs Energy Center Unit 2 under Section 393.170.1. I describe

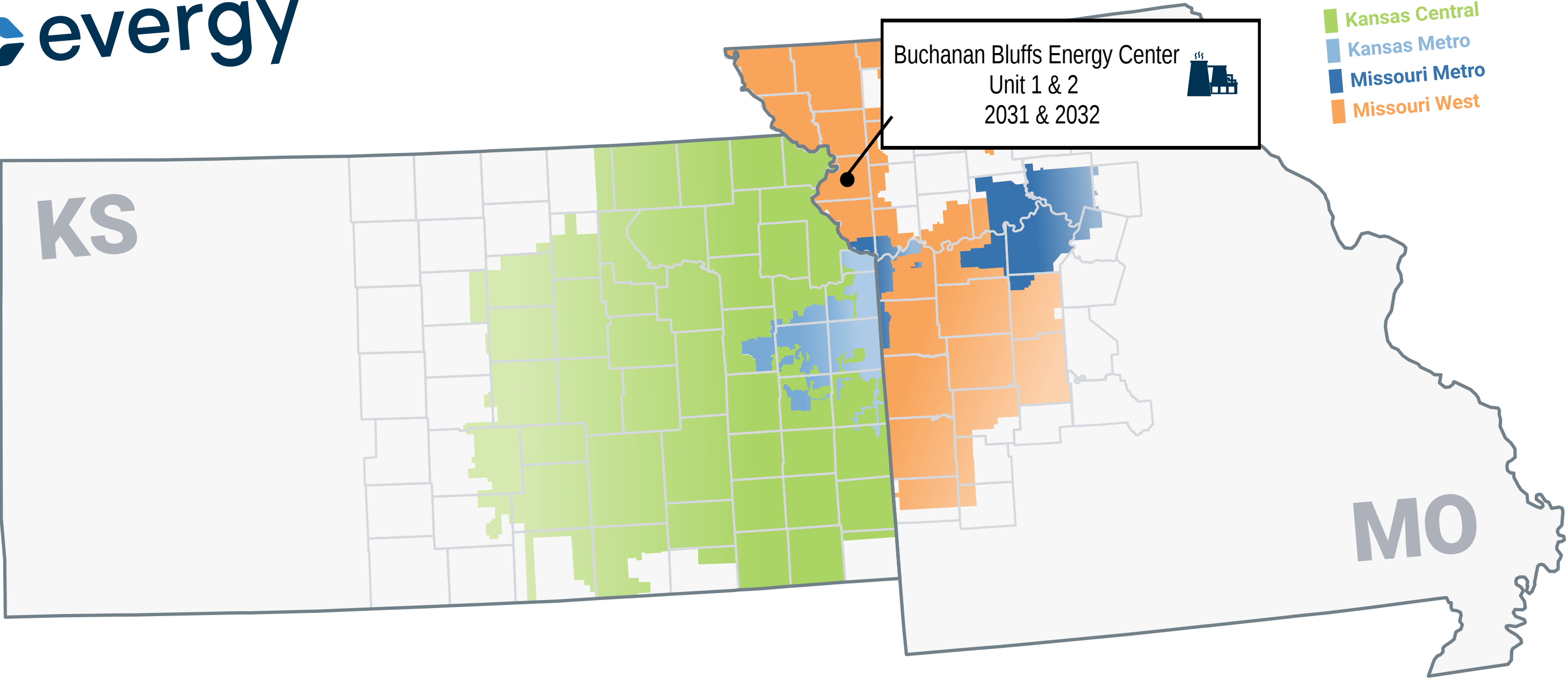
1 the Buchanan Bluffs Energy Center Unit 2, an advanced-class, nominal 710 MW
2 combined-cycle natural gas facility, and explain the basis for the technology and
3 configuration selected. I describe the roles of the OE, Burns & McDonnell, and the EPC
4 contractor, and explain why using the existing EPC and PIE contractual agreements
5 reduces project risk. I summarize the siting study performed by 1898 & Co. and the basis
6 for the selected site. I present the project cost estimates, discuss the industry cost trends
7 that inform them, and explain the basis for the current cost estimates. I also describe the
8 measures Evergy has taken to mitigate cost and schedule risk, including the fixed-price
9 EPC structure and early procurement of long-lead equipment. I discuss the plan to supply
10 natural gas fuel to the facility and the transmission interconnection requirements addressed
11 through the SPP process. Finally, I describe the proposed in-service criteria and the
12 Applicants' commitment to provide periodic construction status reports. Based on the
13 foregoing, I believe that the Buchanan Bluffs Energy Center Unit 2 is being developed and
14 procured in a reasonable and prudent manner, and that the associated cost estimates and
15 project approach support the Commission granting a CCN for the Project.

16 **Q. Does this conclude your testimony?**

17 **A.** Yes, it does.

In the Matter of the Application of Evergy Metro,)
 Inc., d/b/a/ Evergy Missouri Metro and Evergy)
 Missouri West, Inc. d/b/a Evergy Missouri West)
 For Permission and Approval of Certificates of)
 Convenience and Necessity Authorizing them to)
 Construct, Install, Own, Operate, Manage,)
 Maintain, and Control Natural Gas and Solar)
 Electrical Production Facilities and a Battery)
 Energy Storage System)

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





TIE-IN LOCATIONS	
TP-01A	FUEL GAS
TP-01B	FUEL GAS
TP-02	POTABLE WATER SUPPLY
TP-03	WASTEWATER

- PRELIMINARY -
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A	PRELIMINARY		
	A. CAMPBELL	C. BIVENS	OPEN
REV	DESIGN BY	CHECKED BY	DATE

EVERGY
SPARTA



SITE PLAN

ENGINEER/DESIGN ORIGINATOR	A. CAMPBELL	DRAWING NUMBER	P0061103-SP-001
LEAD ENG	C. BIVENS		
ENG MGR	J. BOCKELMAN		
PROJ MGR	G. DINKEL		

**SCHEDULES JKO-3 thru JKO-7
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Evergy Metro West, Inc. d/b/a Evergy Missouri West

Docket No.: EA-2026-0343

Date: August 31, 2026

CONFIDENTIAL INFORMATION

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Document/Page	Reason for Confidentiality from List Below
Olson Direct, p. 22, ln. 8	3, 4, and 6
Olson Direct, p. 32, lns. 11 and 13-16	3, 4, and 6
Olson Direct, p. 43, ln. 14	3, 4, and 6
Confidential Schedules JKO-3 thru JKO-7	3, 4, and 6

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