

Public Version

Exhibit No.:
Issue: Fuel Runs, Fuel Inventories, Fuel Prices, FAC
Witness: Jessica L. Tucker
Type of Exhibit: Direct Testimony
Sponsoring Party: Evergy Missouri West
Case No.: ER-2022-0130
Date Testimony Prepared: January 7, 2022

MISSOURI PUBLIC SERVICE COMMISSION

CASE NO.: ER-2022-0130

DIRECT TESTIMONY

OF

JESSICA L. TUCKER

ON BEHALF OF

EVERGY MISSOURI WEST

**Kansas City, Missouri
January 2022**

TABLE OF CONTENTS

I.	FUEL IN COST OF SERVICE	3
A.	Fuel Price Forecast	3
B.	Fuel Additives and Fuel Adders	5
C.	Emission Allowance Cost	9
D.	Fuel Inventory	9
II.	FUEL ADJUSTMENT CLAUSE	20
A.	Factors Considered	20
1.	Fuel Market Volatility and How Market Volatility Impacts Fuel Costs	21
2.	Market Impact on Fuel Costs is Substantial	28
3.	Fuel Costs Are Beyond the Control of Management	29
B.	20 CSR 4240-20.090(2)(A) Requirements	30
1.	Requirement 12: Mitigating Fuel Market Risk (Price Volatility)	31
2.	Requirement 17: Emissions Management Policy, Emissions Allowances Purchases, and Emissions Allowances Sales	33

DIRECT TESTIMONY

OF

JESSICA L. TUCKER

Case No. ER-2022-0130

1 **Q: Please state your name and business address.**

2 A: My name is Jessica L. Tucker. My business address is 1200 Main Street, Kansas City,
3 Missouri 64105.

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

5 A: I am employed by Evergy Metro, Inc. I serve as Senior Manager, Fuels & Emissions for
6 Evergy Metro, Inc. d/b/a as Evergy Missouri Metro (“Evergy Missouri Metro” or
7 “Company”), Evergy Missouri West, Inc. d/b/a Evergy Missouri West (“Evergy Missouri
8 West”), Evergy Metro, Inc. d/b/a Evergy Kansas Metro (“Evergy Kansas Metro”), and
9 Evergy Kansas Central, Inc. and Evergy South, Inc., collectively d/b/a as Evergy Kansas
10 Central (“Evergy Kansas Central”) the operating utilities of Evergy, Inc.

11 **Q: On whose behalf are you testifying?**

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

13 **Q: What are your primary responsibilities?**

14 A: My primary responsibilities include management and oversight of fuel procurement and
15 logistics (apart from natural gas) as well as coal combustion residual product
16 management and marketing for Company operated generating stations.

17 **Q: Please describe your education, experience and employment history?**

18 A: I graduated Summa Cum Laude from Kansas State University in December 1999 with a
19 Bachelor’s of Science degree in Agriculture. I began my career in the energy industry in

1 January 2001 with Aquila as an Associate Hourly Trader. In this role, my efforts were
2 focused on executing short term physical power transactions in the real-time market
3 across various North American Electric Reliability Corporation (“NERC”) regions. My
4 employment with KCP&L began in August of 2002 as an Hourly Trader on the real-time
5 desk. From August 2002 to May 2006, my role focused on buying and selling power in
6 the real-time market. In June 2006, I was promoted to Interchange Marketer, which
7 focused my trading activity on day ahead and monthly power transactions. I was also a
8 part of KCP&L’s Regional Transmission Organization (“RTO”) integration team that
9 prepared the generation dispatching and trading area for participation in the Southwest
10 Power Pool (“SPP”) Energy Imbalance Service (“EIS”) market, which launched on
11 February 1, 2007. In November 2010, I was promoted to Manager, System Operations
12 (Power). My primary responsibility was to oversee 24x7 Power Control Center
13 functions, which consisted of real time and day ahead power trading, power scheduling,
14 and generation dispatching operations. This not only included overseeing our
15 participation in the SPP market, but compliance with applicable NERC Reliability
16 Standards. I was also responsible for preparing the dispatching and trading group for
17 participation in the SPP Integrated Marketplace (“IM”), which launched on March 1,
18 2014. In April 2015, I was promoted to Senior Manager, Power System Operations. In
19 July 2017, I transitioned to the position of Senior Manager, Fuels & Emissions within the
20 Fuels group.

1 **Q: Have you previously testified in a proceeding at the Missouri Public Service**
2 **Commission (“MPSC” or “Commission”) or before any other utility regulatory**
3 **agency?**

4 A: Yes. Beginning in early 2017, I have testified before the MPSC and/or the Kansas
5 Corporation Commission regarding certain topics associated with the SPP Integrated
6 Marketplace or fuel-related subject matter.

7 **Q: On what subjects will you be testifying?**

8 A: I will be testifying on fuel-related issues. My testimony serves two purposes. First I am
9 supporting the fuel prices, emission prices, and certain fuel and emission related costs,
10 including fuel inventory, additives, and adders, used to develop the Company’s Cost of
11 Service (“COS”) calculations. Second, I will address certain fuel and emission allowance
12 related issues as required when a company seeks to continue a fuel adjustment clause
13 (“FAC”).

14 **I. FUEL IN COST OF SERVICE**

15 **Q: What is the purpose of this portion of your testimony?**

16 A: The purpose of this part of my testimony is to explain how prices for fuel and fuel-related
17 commodities were forecast to project fuel expense for the COS included in the
18 Company’s Direct filing and how we plan to true-up those costs later in this proceeding.

19 **A. Fuel Price Forecast**

20 **Q: What fuel prices did Evergy Missouri West use to develop its COS?**

21 A: Evergy Missouri West used coal and oil prices as projected for May 2022. With respect
22 to natural gas, we used a 3-year average as discussed below. Please refer to the Direct

1 Testimony of Company witness Ronald A. Klote regarding the test year and expected
2 true-up period.

3 **Q: Will these projected prices be replaced with actual prices in the May 2022 true-up?**

4 A: Yes. We expect to replace the projected prices for coal, oil, and natural gas with actual
5 prices in the May 2022 true-up.

6 **Q: How did you forecast the coal prices?**

7 A: The May 2022 delivered prices of Powder River Basin (“PRB”) coal were forecast as the
8 sum of the mine price and the transportation rate, inclusive of diesel fuel surcharge. A
9 portion of the coal contracts under which Evergy Missouri West expects to purchase PRB
10 coal in 2022 specify a fixed mine price that is only subject to adjustment for quality or
11 government imposition such as changes in laws, regulations, or taxes. Those contracts
12 that are not fixed are tied to a market index.

13 **Q: How did you forecast the freight rates for moving PRB coal?**

14 A: The freight rates for Jeffrey Energy Center and Lake Road Generating Station were
15 forecasted based upon their respective rail contracts and the contractually defined
16 escalation mechanisms. Where those contracts called for an index, we constructed the
17 forecasted index from data forecasted by energy industry consultant, JD Energy. The
18 freight rate projection for 2022 rail service to Iatan Station was based upon a maximum
19 rate study conducted by L.E. Peabody and Associates.

20 **Q: How did you forecast the natural gas prices used to develop the Company’s COS?**

21 A: Monthly natural gas prices were derived from the September 27, 2021 NYMEX Henry
22 Hub Natural Gas futures and Intercontinental Exchange (ICE) PEPL NG Basis futures
23 contract settlement prices from the period of January 2022 through December 2024.

1 Monthly PEPL outright prices were calculated by adding the monthly PEPL NG Basis
2 prices to the applicable Henry Hub futures contracts. Then, an average price for each
3 calendar month was calculated from the 2022-2024 period to develop the cost of natural
4 gas in the COS. Again, we expect to true-up to Evergy Missouri West's actual natural gas
5 prices during the course of this proceeding.

6 **Q: How did you forecast the oil prices?**

7 A: Oil is used primarily for flame stability and start-up at the Iatan and Jeffrey coal units.
8 Greenwood and most of Lake Road use oil as a backup to natural gas and as such, are
9 assumed to be dispatched on natural gas in the model. Nevada, Lake Road 6, and Lake
10 Road 7 are the only units that use oil as the primary fuel. The price of oil for each station
11 was based on the May 2022 heating oil futures contract. The fuel price forecast for oil at
12 these stations was based on NYMEX daily settlement price as of September 27, 2021.
13 Although there is considerable storage capability and working inventory onsite, Evergy
14 Missouri West's oil-fired Nevada, Lake Road 6, and Lake Road 7 units were assumed to
15 be dispatched using May 2022 projected oil pricing, because as oil is utilized, it must be
16 replaced at market pricing. We expect to true-up oil prices during the course of this
17 proceeding.

18 **B. Fuel Additives and Fuel Adders**

19 **Q: Are there costs related to fuel that are not included in the price of fuel?**

20 A: Yes. Generally, those costs fall into two categories: "fuel additives" and "fuel adders."
21 Common Evergy Missouri West fuel additives include ammonia, lime, limestone, powder
22 activated carbon ("PAC"), urea, and anti-slagging chemicals which are used to control
23 emissions or improve boiler performance. Less common fuel additives used include

1 hydrated lime, Redox, and M-Prove. The fuel adders include unit train lease expense,
2 unit train maintenance, unit train property tax, unit train depreciation, coal dust
3 mitigation, freeze protection, and costs associated with transporting natural gas. We
4 expect to true-up these forecasted costs to actual costs during the course of this
5 proceeding.

6 **Q: Why does Evergy Missouri West need fuel additives?**

7 A: Fuel additives, which include pollution control reagents, are commodities that are
8 consumed in addition to the fuel either through combustion or chemical reaction. For
9 example, ammonia/urea is added to a stream of flue gas where it reacts with nitrogen
10 oxide (“NO_x”) as the gases pass through a catalyst chamber. Lime (or limestone) is
11 added to the flue gas stream in a flue gas desulfurization module to “scrub” sulfur dioxide
12 (“SO₂”). Some units also use PAC as a sorbent for controlling mercury emissions. Anti-
13 slagging additive is used to improve the slag characteristics when coal is burned.

14 **Q: How did you determine the cost of the fuel additives?**

15 A: With the exception of Jeffrey Energy Center dust control, the cost of fuel additives was
16 determined as the quantity times the price, where the price was the value projected for the
17 May 2022 true-up and the quantity was based on historical usage rates applied to volumes
18 developed by Company witness Eric Peterson. For Jeffrey Energy Center dust control,
19 we used the test year value to determine projected expense. We expect to true-up these
20 costs and usage rates during the course of this proceeding.

21 **Q: How did you determine the cost of the fuel adders?**

22 A: I will address each of the fuel adders in turn, but generally the costs of the various fuel
23 adders were based on a projection of their annual expense.

1 **Q: Please describe the unit train-related expenses.**

2 A: Unit train related expenses included:

3 • Unit train lease expense (which is separated into two components):

4 ○ Long-term unit train lease expense;

5 ○ Short-term unit train lease expense;

6 • Ad valorem private car line taxes;

7 • Railcar depreciation;

8 • Unit train maintenance expense consisting of:

9 ○ Foreign car repair which is the cost of repairing railcars that are running in
10 service for Evergy Missouri West but are not owned by or under lease to
11 Evergy Missouri West;

12 ○ Shared expenses which are costs for items like Association of American
13 Railroads publications, Railinc applications and services fees, and railcar
14 management software fees that cannot be assigned to an individual car but are
15 “shared” or distributed across the fleet;

16 ○ Maintenance and repair of Evergy Missouri West’s owned and leased railcar
17 fleet.

18 ○ Ancillary charges including detention, switching, storage, and out of route
19 costs.

20 **Q: Are there other coal transportation related adders?**

21 A: Yes. Topper agents are applied to the surface of loaded railcars to mitigate the loss of
22 coal dust while in transit. Side-release agents may be applied to railcars or freeze
23 conditioning agents may be applied to coal to minimize the amount of carry-back coal

1 during cold weather. These agents are applied by the coal companies during the loading
2 process at the mines. They are to improve the safety of railroad operations. In addition,
3 body spray is added to Lake Road trains at the mines in order to reduce coal dust during
4 the unloading process.

5 **Q: What are the costs associated with transporting natural gas?**

6 A: The costs for transporting natural gas fall into two categories. The first category is those
7 costs which are relatively fixed. That includes reservation or demand charges, meter
8 charges, and access charges. The second category of transportation costs is those costs
9 which are volumetric. They include: commodity costs, commodity balancing fees,
10 transportation charges, mileage charges, fuel and loss reimbursement, Federal Energy
11 Regulatory Commission (“FERC”) annual charge adjustment, storage fees, and parking
12 fees.

13 **Q: How did you determine the costs associated with transporting natural gas?**

14 A: The cost of transporting natural gas was separated into its various components. For the
15 reservation or demand charges, the pipeline’s current rates were used to calculate the
16 demand or reservation charges we expect to pay for the 12 months of June 2021 through
17 May 2022. For the variable costs, the pipeline’s and local distribution company’s current
18 rates were applied to the volumes developed by Company witness Eric Peterson. Those
19 various components were then aggregated into either commodity-based charges or
20 reservation charges. We plan to update these costs at true-up.

1 **C. Emission Allowance Cost**

2 **Q: How did you forecast emission allowance prices?**

3 A: Emission allowance prices used for dispatch and market prices in our models were priced
4 as the average of the latest available forecasted 2022 price from JD Energy, S&P Global
5 Platts, IHS Markit and Energy Ventures. For expense, we used forecasted pricing for
6 2022. We expect to true-up emission allowance costs.

7 **Q: Do you expect to replace all of these fuel, fuel-related, and emission allowance price
8 or cost estimates with actual prices or costs that are known at true-up?**

9 A: Yes.

10 **D. Fuel Inventory**

11 **Q: What is the purpose of this portion of your testimony?**

12 A: The purpose of this portion of my testimony is to explain the process by which Evergy
13 Missouri West determines the amount of fuel inventory to keep on hand and how the
14 level of fuel inventory impacts the Company's COS. It should be noted that for Iatan
15 Station and Jeffrey Energy Center, which are jointly owned, both the determination of
16 fuel inventory levels and fuel procurement are handled by the station owner-operators,
17 Evergy Metro and Evergy Kansas Central respectively, on behalf of Evergy Missouri
18 West as described below.

19 **Q: Why does Evergy Missouri West hold fuel inventory?**

20 A: Evergy Missouri West holds fuel inventory because of the uncertainty inherent in both
21 fuel requirements and fuel deliveries. Both fuel requirements and deliveries can be
22 impacted by weather. Fuel requirements can also be impacted by unit availability—both
23 the availability of the unit holding the inventory and the availability of other units in the

1 Evergy Missouri West or Southwest Power Pool (“SPP”) system. Fuel deliveries can
2 also be impacted by breakdowns at a mine or in the transportation system. Events like
3 the 1993, 2011, and 2019 Missouri River floods, the 2005 joint line derailments in the
4 Southern Powder River Basin (“SPRB”), and the railroad service issue that significantly
5 reduced the delivery of coal to Evergy Missouri West’s plants from March 2013 through
6 September 2014. Fuel inventories are insurance against events that interrupt the delivery
7 of fuel or unexpectedly increase the demand for fuel. All of these factors vary randomly.
8 Fuel inventories act like a “shock absorber” when fuel deliveries do not exactly match
9 fuel requirements and enable Evergy Missouri West to continue generating electricity
10 reliably between fuel shipments.

11 **Q: How does Evergy Missouri West manage its fuel inventory?**

12 A: Managing fuel inventory involves ordering fuel, receiving fuel into inventory, and
13 burning fuel out of inventory. Evergy Missouri West controls inventory levels primarily
14 through its fuel ordering policy. That is, Evergy Missouri West sets fuel inventory
15 targets and then orders fuel to achieve those targets. We define inventory targets as the
16 inventory level that we aim to maintain on average during “normal” times.

17 In addition to fuel ordering policy, plant dispatch policy can be used to control inventory,
18 however Evergy Missouri West does not solely control the dispatch of its units. Effective
19 March 1, 2014, NERC certified SPP as the Balancing Authority (“BA”) for the SPP
20 region. As the BA and RTO operating an integrated marketplace for electric power, SPP
21 optimizes the generation resources for its members. To do that, it uses a regional security
22 constrained, offer-based economic algorithm to dispatch the members’ units. If a plant is
23 low on fuel, SPP might reduce the operation of that plant to conserve inventory. This

1 could require other plants under SPP's dispatch to operate more and to use more fuel than
2 they normally would. One can view this as a transfer of fuel "by wire" to the plant with
3 low inventory. To determine the best inventory level, Evergy Missouri West balances the
4 cost of holding fuel against the expected cost of running out of fuel.

5 **Q: What are the costs associated with holding fuel inventory?**

6 A: Holding costs reflect cost of capital and operating costs. Holding inventories require an
7 investment in working capital, which require providing investors and lenders those
8 returns that meet their expectations. It also includes the income taxes associated with
9 providing the cost of capital. The operating costs of holding inventory include costs
10 other than the cost of the capital tied up in the inventories. For example, we treat
11 property tax as an operating cost.

12 **Q: Please explain what you mean by the expected cost of running out of fuel.**

13 A: In this context, expected cost means the probability of running out of fuel times the cost
14 of running out of fuel. The cost of running out of fuel at a power plant is the additional
15 cost incurred when a more expensive resource must be dispatched to serve the load that
16 would have otherwise been served by the plant if it had the fuel to do so. If there are not
17 enough resources available to serve load, there could be a failure to meet customer
18 demand for electricity.

19 **Q: How does Evergy Missouri West determine the best inventory level, i.e., the level
20 that balances the cost of holding fuel against the expected cost of running out?**

21 A: Except for Lake Road Station coal, Electric Power Research Institute's Utility Fuel
22 Inventory Model ("UFIM") is used to identify those inventory levels with the lowest
23 expected total cost. That is, we minimize the sum of inventory holding costs and the

1 expected cost of running out of fuel. With respect to Lake Road coal, the inventory target
2 is determined in collaboration with Station management based upon the unique use of
3 coal (i.e., steam vs. electric) at that location.

4 **Q: How does UFIM work?**

5 A: UFIM uses a Markov decision model to iterate through various order policies to
6 determine the optimal order policy. It identifies an inventory target as a concise way to
7 express the following fuel ordering policy:

$$\begin{aligned} 8 \quad \text{Current Month Order} &= (\text{Inventory Target} - \text{Current Inventory}) \\ 9 \quad &+ \text{Expected Burn this Month} \\ 10 \quad &+ \text{Expected Supply Shortfall} \end{aligned}$$

11 That is, UFIM's target assumes all fuel on hand is available to meet expected burn.
12 "Basemat" is added to the available target developed with UFIM to determine Evergy
13 Missouri West's inventory target. Generally, and in the rest of my testimony, references
14 to inventory targets mean the sum of fuel readily available to meet burn plus basemat.

15 **Q: What is basemat?**

16 A: Basemat is the quantity of coal occupying the bottom 18 inches of our coal stockpile
17 footprint. It may or may not be useable due to contamination from water, soil, clay, or
18 fill material on which the coal is placed. Because of this uncertainty about the quality of
19 the coal, basemat is not considered readily available. However, because it is dynamic
20 and it can be burned (although with difficulty), it is not written off or considered sunk.
21 To determine basemat under our compacted stockpiles, we only consider the area of a
22 pile that is thicker than 9 inches. The basemat values presented here for all inventory
23 locations are premised on work performed by MIKON Corporation, a consulting

1 engineering firm that specializes in coal stockpile inventories and related services for
2 utilities nationwide.

3 **Q: How does the UFIM model work?**

4 A: The fundamental purpose of UFIM is to develop least-cost ordering policies, *i.e.*, targets,
5 for fuel inventory. UFIM does this by dividing time into “normal” periods and
6 “disruption” periods where a disruption is an event of limited duration with an uncertain
7 occurrence. It develops inventory targets for normal times and disruption management
8 policies. The inventory target that UFIM develops is that level of inventory that balances
9 the cost of holding inventory with the cost of running out of fuel.

10 **Q: What are the primary inputs to UFIM?**

11 A: The key inputs are: holding costs, fuel supply cost curves, costs of running out of fuel,
12 fuel requirement distributions, “normal” supply uncertainty distributions, and disruption
13 characteristics.

14 **Q: What are the holding costs you used to develop coal inventory levels for this case?**

15 A: The holding costs used to develop coal inventory levels for this case were based on the
16 cost of capital as of June 30, 2021.

17 **Q: What do you mean by “fuel supply cost curves”?**

18 A: A fuel supply cost curve recognizes that the delivered cost of fuel may vary depending on
19 the quantity of fuel purchased in a given month. For example, our fuel supply cost curves
20 for PRB coal recognize that when monthly purchases exceed normal levels, we may need
21 to lease additional train sets. Those lease costs cause the marginal cost of fuel above
22 normal levels to be slightly higher than the normal cost of fuel.

1 **Q: What did you use for the normal cost of coal?**

2 A: The normal fuel prices underlying all of the fuel supply cost curves were the average
3 quarterly projected price forecasts for 2022.

4 **Q: What did you use for the costs of running out of coal?**

5 A: There are several components to the cost of running out of coal. The first cost is the
6 opportunity cost of forgone non-firm off-system power sales. We developed that cost by
7 constructing a price duration curve derived from the nodal Locational Marginal Prices for
8 each station. We supplemented those projections by adding as the last points on the price
9 duration curves an estimate of the cost for using oil-fired generation followed by the
10 assumed socio-economic cost of failing to meet load for which we used Evergy Missouri
11 West's assumed cost for unserved load. These price duration curves are referred to in
12 UFIM as burn reduction cost curves. Burn reduction cost curves can vary by inventory,
13 location, and disruption.

14 **Q: What fuel requirement distributions did you use?**

15 A: Except for Lake Road, distributions were based on projected fuel requirements.

16 **Q: What do you mean by "normal" supply uncertainty?**

17 A: We normally experience random variations between fuel burned and fuel received in any
18 given month. These supply shortfalls or overages are assumed to be independent from
19 period to period and are not expected to significantly affect inventory policy. To
20 determine these normal variations, we developed probability distributions of receipt
21 uncertainty based on the difference between historical burn and receipts.

1 **Q: What are disruptions?**

2 A: A disruption is any change in circumstances that persists for a finite duration and
3 significantly affects inventory policy. A supply disruption might entail a complete cut-
4 off of fuel deliveries, a reduction in deliveries, or an increase in the variability of receipts.
5 A demand disruption might consist of an increase in expected burn or an increase in the
6 variability of burn. Other disruptions might involve temporary increases in the cost of
7 fuel or the cost of replacement power. Different disruptions have different probabilities
8 of occurring and different expected durations.

9 **Q: What disruptions were used in developing Evergy Missouri West's coal inventory**
10 **targets?**

11 A: Several types of disruptions were recognized in development of its inventory targets:

- 12 • Railroad or mine capacity constraints;
- 13 • Fuel yard failures; and
- 14 • Major floods / Extreme weather.

15 **Q: Please explain what you mean by disruptions related to railroad or mine capacity**
16 **constraints.**

17 A: Supply capacity is the ultimate quantity of coal that can be produced, loaded, and shipped
18 out of the PRB in a given time period. Constraints to supply capacity can come from
19 either the railroads or the mines, but regardless of which of these is the constraint source,
20 the quantity of coal that can be delivered is restricted. A constrained supply caused by
21 railroad capacity constraints can come from an inability of the railroad to ship a greater
22 volume of coal from the PRB. A scenario such as this can arise from not having enough
23 slack capacity to place more trains in-service. It can also come from an infrastructure

1 failure such as the May 2005 derailments on the joint line in the SPRB. Beginning in the
2 winter of 2013-2014, there was a serious decline in rail service across the U.S. rail
3 network particularly in the upper Midwest region. That degradation in service which
4 persisted into fall 2014 is another example of the disruptions that we refer to as a railroad
5 or mine capacity constraint.

6 A variety of mine issues can constrain supply, such as there not being enough available
7 load-outs, not enough space to stage empty trains, reaching the productive limits of
8 equipment such as shovels, draglines, conveyors, and trucks, or the mine reaching the
9 production limits specified in its environmental quality permits. We lump the mine and
10 railroad capacity constraints together because they can occur simultaneously, and one
11 may mask the other.

12 **Q: Please explain what you mean by disruptions related to fuel yard failures.**

13 A: Every Missouri West and other utilities have experienced major failures in the
14 equipment used to receive fuel. As used here, “disruption” is designed to cover the
15 variety of circumstances that could result in a significant constraint on a plant’s ability to
16 receive fuel. For example, in 1986 KCP&L’s Hawthorn station lost an unloading
17 conveyor in a fire caused by coal dust combustion. That outage materially limited fuel
18 deliveries for 4 months.

19 **Q: Please explain what you mean by “major flood” and “extreme weather” disruptions.**

20 A: Since 1993, the Missouri River has had three major floods. This disruption was modeled
21 after those floods. Floods can lengthen railroad cycle times as the railroads reroute trains
22 and curtail the deliveries of coal to generating stations. The extreme weather disruption
23 was modeled after the February 2021 winter weather event. Extreme weather can cause

1 reduced fuel deliveries, unexpected increase in fuel burn, and increases in the cost of fuel
2 and/or replacement power. For example, extreme winter weather can interfere with the
3 railroad's ability to deliver trains, the availability of oil delivery trucks, and increase fuel
4 burn due to higher electric demand.

5 **Q: What are the coal inventory targets used in this case?**

6 A: The coal inventory targets resulting from application of UFIM and their associated value
7 for incorporation into rate base are shown in the attached Schedule JLT-1 (**Confidential**)
8 and are the values used to determine adjustment RB-74, "Adjust Fossil Fuel Inventories
9 to required levels" included in Schedule RAK-2 of the Direct Testimony of Evergy
10 Missouri West witness Ronald A. Klote. Since these coal inventory targets are a function
11 of fuel prices, cost of capital and other factors that may be adjusted in the course of this
12 proceeding, we would expect to adjust the coal inventory targets as necessary.

13 **Q: Was the UFIM model used for any other inventory targets aside from coal?**

14 A: Yes. As discussed below, the UFIM model was utilized to establish oil inventory targets
15 for Evergy Missouri West's Greenwood, Nevada, and Lake Road Stations.

16 **Q: Was the UFIM model run utilized for the coal targets different than the model run
17 utilized for oil targets?**

18 A: Yes. Nevada and Lake Road Units 6 & 7 are oil-fired peaking type units that are, in
19 general, not expected to run consistently outside of very high demand times or when
20 other units are unavailable. For Lake Road units 1-5 and Greenwood units 1-4, oil is the
21 back-up fuel to natural gas and therefore, these units do not often run on oil in normal
22 operating conditions. As such, there are not as many inputs into the UFIM model for oil
23 targets as there are for coal targets. The model run used to determine the oil inventory

1 targets for Greenwood, Nevada, and Lake Road was done prior to the model run for coal
2 and utilized the cost of capital as of May 31, 2021. The normal cost of oil underlying the
3 oil supply cost curves was assumed to be current market pricing at that time. An extreme
4 weather disruption is included in the model as explained above. The price duration
5 curves used to develop the cost of running out of oil was developed using February 2021
6 power prices. Much like with the coal inventory targets, UFIM produces the
7 recommended targets for available oil such that dead storage gallons are added to the
8 available target volumes to get to the total recommended oil inventory targets.

9 **Q: What are dead storage gallons?**

10 A: Dead storage gallons are that quantity of oil in the storage tank that are unusable for any
11 reason. For example, oil at the bottom of a tank can be unreachable or the quality of oil
12 may have degraded or contain contaminants such as water and as such, it isn't considered
13 as usable.

14 **Q: What are the oil inventory targets for Greenwood, Nevada, and Lake Road Stations**
15 **used in this case?**

16 A: The oil inventory targets resulting from the application of UFIM and the associated value
17 for incorporation into rate base are shown in the attached Schedule JLT-1 (**Confidential**)
18 and are the values used to determine adjustment RB-74, "Adjust Fossil Fuel Inventories
19 to required levels" included in Schedule RAK-2 of the Direct Testimony of Evergy
20 Missouri West witness Ronald A. Klote. Since these oil inventory targets are a function
21 of fuel prices, cost of capital and other factors that may be adjusted in the course of this
22 proceeding, we would expect to adjust the oil inventory targets as necessary.

1 **Q: How are the oil inventory volumes established?**

2 A: Oil inventory volumes for those units that utilize oil for start-up are based upon 12-month
3 average daily inventory volumes. As discussed above, Greenwood, Nevada, and Lake
4 Road, which either use oil as the sole fuel source or as a back-up fuel source to natural
5 gas and have significant storage capability onsite, utilize UFIM-based inventory targets.

6 **Q: How were the inventory values for coal determined?**

7 A: Inventory values for Iatan and Jeffrey Energy Center PRB coal were calculated as the
8 UFIM-based inventory target values as discussed above, multiplied by projected May
9 2022 pricing.

10 **Q: How were the inventory values for oil determined?**

11 A: Inventory values for Iatan and Jeffrey Energy Center oil were calculated as the average
12 daily quantity on hand for the 12-month period from October 2020 through September
13 2021 multiplied by the May 2022 per unit value. Inventory values for Greenwood,
14 Nevada, and Lake Road were calculated based upon the August 2021 month end
15 inventory price per unit multiplied by the UFIM-based oil inventory targets. The
16 inventory values for oil are shown in Schedule JLT-1 (**Confidential**).

17 **Q: How were the inventory values for fuel additives determined?**

18 A: Inventory values for ammonia, anti-slagging chemical, hydrated lime, limestone, powder
19 activated carbon, Redox, M-Prove and urea were calculated as the average daily quantity
20 on hand for the 12-month period from October 2020 through September 2021 multiplied
21 by the projected May 2022 per unit value. It should be noted that due to difficulty with
22 measuring precise usage, static inventories are utilized for some additives at some

1 locations. The inventory values for these additives are shown in Schedule JLT-1
2 **(Confidential).**

3 **Q: Will you true-up the coal inventory values?**

4 A: Yes. We expect to true-up the PRB coal inventory values by applying May 2022 pricing
5 to the UFIM-based inventory targets.

6 **Q: Will you true-up the oil inventory volumes and values?**

7 A: Yes. We expect to calculate new 12-month average daily quantities on hand for Iatan and
8 Jeffrey Energy Center representing June 2021 through May 2022 and will use May 2022
9 prices to calculate these inventory values at true-up. For Greenwood, Lake Road, and
10 Nevada, the UFIM-based oil inventory target volumes will be multiplied by the May
11 2022 month-end inventory prices per unit to determine inventory values at true-up.

12 **Q: Will you true-up the fuel additive volumes and values?**

13 A: Yes. We expect to calculate new 12-month average daily quantities on hand representing
14 June 2021 through May 2022 and use May 2022 pricing to calculate inventory values at
15 true-up.

16 **II. FUEL ADJUSTMENT CLAUSE**

17 **A. Factors Considered**

18 **Q: Commission Rule 20 CSR 4240-20.090(2)(D) identifies factors the Commission will**
19 **consider in determining which cost components to include in a rate adjustment**
20 **mechanism. Which of those factors will you address?**

21 A: I will address those factors related to the market impact on fuel costs. Specifically, I will
22 discuss:

23 1. fuel market volatility and how market volatility impacts fuel costs;

- 1 2. the substantial market impact on fuel costs; and
- 2 3. the market impact on fuel costs is beyond the control of management.

3 **1. Fuel Market Volatility and How Market Volatility Impacts Fuel Costs**

4 **Q: How do changes in fuel markets affect Evergy Missouri West's COS?**

5 A: Changes in fuel markets affect Evergy Missouri West's COS in multiple ways. The first
6 and most obvious impact is the effect of changes in fuel prices and their direct effect on
7 fuel expense. Second, is the effect of changing fuel prices on the cost of electricity
8 production, thus impacting the cost of electricity bought and sold in the SPP market.

9 **Q: How have fuel prices changed over the past few years?**

10 A: Schedule JLT-2 and Schedule JLT-3 show how fuel prices have changed dramatically
11 over the last 7+ years. Schedule JLT-2 shows how from January 2018 through October
12 2021 the price for Henry Hub Natural Gas futures has ranged from \$1.48/million British
13 thermal units ("MMBtu") to \$6.31/MMBtu. Spot physical natural gas prices, which are
14 more reflective of the Company's true cost of gas, have demonstrated an even greater
15 range in recent years, with PEPL next day gas prices ranging from \$0.72/MMBtu to
16 \$225.44/MMBtu. PRB coal had previously not exhibited near as much pricing volatility
17 as natural gas in recent years, but that is no longer the case with prices rallying from
18 \$0.68/MMBtu to \$2.10/MMBtu in the second half of 2021, as shown in Schedule JLT-3.

19 **Q: How do recent prices and volatility compare historically?**

20 A: In the last 18 months, the Henry Hub Natural Gas futures markets have seen the lowest
21 traded price in the past 25 years as well as the highest traded price since 2008. November
22 2021 PRB coal prices have reached an all-time high by a sizeable margin, trading at a
23 63% premium to the previous high mark set in 2005. In terms of pricing volatility,

1 defined as the annualized standard deviation of the percent change in prices, we see that
2 volatility in the Henry Hub Natural Gas futures market has largely stayed within a range
3 of 40-50% for the past 10 years. However, this is somewhat deceiving, as a market with a
4 higher notional price will naturally exhibit greater price fluctuations than a market with a
5 lower notional price, assuming similar volatility levels. This is to say that while measured
6 Henry Hub volatility has not deviated greatly, a higher pricing environment will see
7 greater intra-day and inter-day price swings, making modeling and planning generally
8 more challenging.

9 **Q: What is driving this volatility?**

10 A: The global pandemic has placed strain on all global markets and caused major supply
11 chain disruptions and unexpected severe changes in demand. While the domestic energy
12 markets are no exception to this, there are other fundamental factors playing a larger role
13 in US energy market pricing volatility. These factors are discussed below.

- 14 • First, a lack of investment in natural gas supply and infrastructure over the past
15 few years has led to demand growth outpacing supply growth.
- 16 • Second, the fact that much of that demand growth has come in the form of natural
17 gas export capacity has meant that the US market is much more exposed to
18 international markets, which have demonstrated even greater volatility in recent
19 years tied to geopolitics, supply/demand logistics, extreme weather events, and
20 the pandemic.
- 21 • Third, the build out of renewable generation capacity and the subsequent
22 retirement of coal generation capacity has put a greater reliance on natural gas to
23 meet the demands of the electric grid. Effectively, this transition has largely

1 removed the electricity market's ability to utilize commodity prices to mitigate
2 demand for one commodity (natural gas in this case) and incentivize demand for
3 another (coal). The result is that natural gas demand for electricity generation in
4 the US has become price inelastic, which is a new phenomenon within the market.

5 Combined, these factors have contributed to higher energy prices and greater volatility.

6 **Q: Have PRB coal prices, like natural gas, demonstrated significant volatility?**

7 A: Renewable generation growth and inexpensive natural gas have largely eaten away at US
8 coal demand over the past decade, resulting in relatively dormant PRB coal prices as
9 producers throttled production volumes to align with falling demand and utility
10 inventories that were typically sufficient to absorb any short-term supply or demand
11 fluctuations. However, prompt month prices for PRB coal have recently demonstrated
12 volatility equal to that of natural gas, rallying from \$0.68/MMBtu to \$2.10/MMBtu in the
13 second half of 2021, and pulled prices for 2022 and 2023 along with them, although not
14 to the same extent. This price move is primarily a function of higher natural gas prices
15 and low utility coal inventory volumes on a national basis. While the high gas prices
16 might persist, higher coal prices are less sustainable as PRB coal has very little exposure
17 to international markets and the domestic demand outlook is still limited and declining.
18 Once utilities replenish their inventories, prices should return to more normal levels of
19 \$0.65/MMBtu - \$0.85/MMBtu. That being said, due to the nature of coal supply
20 contracts, many utilities' supply portfolios could reflect the current high pricing
21 environment for the next 2-3 years.

1 Q: **Why are these historical fluctuations in market prices for fuel the expressions of**
2 **volatility the Commission needs to consider when determining which cost**
3 **components to include in a rate adjustment mechanism?**

4 A: Historical fluctuations should be considered because they are the prices the Company
5 faces when it looks to buy fuel. Only after the Company makes a purchase commitment
6 or, if it were to place a hedge, is that volatility mitigated. Moreover, that mitigated price
7 may be quite different than the fuel price embedded in the cost of service calculations
8 upon which the Company's rates are built.

9 Q: **What do you mean by saying the Company faces fluctuations in market prices when**
10 **it looks to buy fuel?**

11 A: Let's start with natural gas. Every Missouri West makes purchases on the day it needs
12 the gas, or very close to it. After the Company receives a dispatch instruction for one of
13 its natural gas units, we solicit offers for natural gas to support that run. These types of
14 gas purchases are subject to intra-day volatility, in addition to the daily volatility shown
15 by the daily settlement prices in Schedule JLT-2.

16 We buy oil much like a consumer buys gas for a car. That is, when the tank is low, we
17 refill it. Like with a car, there are times when you have some flexibility about when to
18 refill your tank and there are times when you do not have such freedom. In either case,
19 you do not know whether the price will go up or down after you make your purchase.
20 Even if you did, you may not have the flexibility to wait for the price to go down. Both
21 price and timing are a function of the movement in market prices.

22 Coal is somewhat like my oil example above. As a coal buyer, we face the volatility
23 shown in Schedule JLT-3. After we sign a contract that fixes the price, we mitigate that

1 volatility for our customers. We face that market volatility for all of our fuel
2 requirements that are not already locked in to fixed price contracts.

3 **Q: What are the main volumes that are exposed to market volatility?**

4 A: Regarding coal, as of November 30, 2021, ** [REDACTED] ** of Evergy Missouri West's
5 expected coal burn from 2022 through 2025 was under contract. In other words, Evergy
6 Missouri West is exposed to volatile market prices for ** [REDACTED] ** of its expected
7 coal requirements for the period rates from this proceeding may be effective.

8 As subsequently discussed, Evergy Missouri West has not utilized natural gas hedging in
9 recent years, thus all of the Company's expected natural gas usage has been exposed to
10 market volatility. Likewise, Evergy Missouri West does not hedge oil, thus all of the
11 Company's expected oil usage is also exposed to market volatility.

12 **Q: Why has Evergy Missouri West not hedged natural gas?**

13 A: Per the agreement between the Company, MPSC Commission Staff, Missouri
14 Department of Economic Development – Division of Energy, Midwest Energy
15 Consumers Group, and Missouri Industrial Energy Consumers in MPSC Docket ER-
16 2016-0156, Evergy Missouri West unwound all natural gas hedges and suspended all
17 hedging activities associated with natural gas, in particular cross-hedging related to
18 purchased power, and natural gas fuel hedging.

19 **Q: As it relates to fuel and purchased power hedging, are there any changes that the
20 Company would like to make going forward?**

21 A: Yes. As part of the above referenced agreement in MPSC Docket ER-2016-0156, the
22 signatories agreed that the Company may resume its natural gas fuel hedging activities,
23 but not the use of natural gas derivatives to cross-hedge purchased power, should the

1 marketplace and/or other factors change such that resumption of natural gas hedging
2 activities would be warranted. Further, the Company also agreed to notify the
3 Commission Staff and OPC if the Company decides to resume natural gas fuel hedging
4 activities, which such notification was issued on December 17th, 2021 as it pertains to the
5 January – April 2022 timeframe. As stated in the December 17th notification, the
6 Company expects to work with parties to establish a long-term hedging and cross-
7 hedging policy and it is to that end that our request is being included in this case. As
8 discussed below, the Company is requesting to resume hedging activities, inclusive of
9 cross-hedging, on a go forward basis based upon increased volatility observed in the fuel
10 and purchased power markets.

11 **Q: Please explain why the Company is looking to resume its hedging activities,**
12 **including cross-hedging.**

13 A: As Schedule JLT-2 demonstrates, pricing volatility has been observed in the natural gas
14 market over the last 7+ years. However, the level of volatility in the market between
15 2016 and 2019 was considerably more muted than what we have observed over the past
16 1-2 years, most notably over the course of 2021. The significant volatility observed in
17 both the international and domestic natural gas markets is being driven by multiple
18 factors including the global pandemic, lack of investment in natural gas supply and
19 infrastructure, geopolitical issues, government policy, extreme weather events and build-
20 out of renewable generation along with retirement of coal generators. Evergy Missouri
21 West believes it is prudent to have the ability to hedge, or offset the risk of, volatile
22 natural gas pricing and its resulting impact on power prices. It is Evergy Missouri West's
23 recommendation that physical gas, financial gas, physical power, financial power, and

1 option products (including cross-hedging) are approved as tools (on both the purchase
2 and sale side) for fuel, purchased power, and off system sales hedging and that they be
3 approved for inclusion in the fuel adjustment clause. With these tools, Evergy Missouri
4 West will be able to better protect to an expected price of fuel and/or remove a portion of
5 the negative impact on the price of purchased power from significant increases in the cost
6 of fuel. The intent of hedging is not that the product always generates a profit. In most
7 situations, the greatest benefit to a portfolio is if a hedge, when viewed in isolation, loses
8 money. It would stand to reason that the rest of the portfolio benefits from the directional
9 move in fuel, purchased power, and/or off system sale pricing. Much like homeowner's
10 insurance, the product is not designed to financially benefit from, but rather to protect the
11 owner from negative, unexpected financial impacts.

12 **Q: Specifically, why does Evergy Missouri West feel that the capability to cross-hedge**
13 **is critical to their ability to protect customers from significant increases in the cost**
14 **of fuel and its potential impact on the cost of purchased power?**

15 A: There are several factors that drive the need to be able to cross-hedge, which is a strategy
16 used to manage risk in one market or product with a position in a different, yet correlated
17 market or product (e.g. hedging the cost of power with a natural gas position). Market
18 liquidity is an extremely important factor. Liquidity can impact both the volume and
19 pricing on a product. It may be difficult to find a robust enough market to transact at the
20 volumes needed. Lack of liquidity also causes larger gaps between the bid/ask spread
21 and certain products are difficult to find in the market. By having the option to cross-
22 hedge, the Company would have more tools available in which to help protect power
23 prices, and therefore the costs to customers. Ultimately, the purpose of the hedging

1 activity is to mitigate, to the extent possible, negative impacts on the cost of power during
2 fuel price excursions. Another factor to consider is relative value of one product versus
3 another. Natural gas markets and power markets do not move in lock step with each
4 other. The implied heat rate of market prices is always moving and there can be greater
5 value in one product versus the other at any given time, whether needing to buy or sell
6 based on the position. It is also important to consider the correlation to the products
7 available in the market relative to the generator and load node locations that impact fuel
8 and purchase power. For example, the Company may find that transacting at a financial
9 natural gas index price is more correlated to the Evergy Missouri West load node than
10 transacting at the most liquid power hub in SPP, SPP South Hub. The impacts of
11 congestion and basis, to name a few, may make cross-hedging a more effective tool to
12 protect customers.

13 2. Market Impact on Fuel Costs is Substantial

14 **Q: How might that market price volatility affect Evergy Missouri West?**

15 A: As noted above, because ** [REDACTED] ** of Evergy Missouri West's expected coal
16 burn is not under contract over the four-year period of 2022 through 2025, Evergy
17 Missouri West is exposed to coal price risk. Additionally, as previously noted, the
18 Company is exposed to adverse natural gas and oil commodity price risk for 2022
19 through 2025. Furthermore, in addition to the risk around the cost of fuel itself, there is
20 associated risk to purchased power costs, particularly in the absence of hedging.

21 **Q: Why did you look at the four-year period of 2022 through 2025?**

22 A: Section 386.266.5(3) RSMo. requires a utility with a FAC to file a general rate case with
23 the effective date of new rates to be no later than four years after the effective date of the

1 Commission order implementing the FAC. Given that we expect the effective date of the
2 Commission order for this case to be early December 2022, the four-year horizon would
3 run from December 2022 into 2025. Fuel requirements for calendar years 2022 through
4 2025 are reasonably representative of that period.

5 **3. Fuel Costs Are Beyond the Control of Management**

6 **Q: Can Evergy Missouri West control the fundamentals that drive the fuel markets?**

7 A: No, Evergy Missouri West cannot control the market fundamentals for fuel. Perhaps an
8 easy and somewhat objective way to answer that question is to look at what portion of the
9 market Evergy Missouri West represents. The Company's projected coal burn for 2022
10 represents roughly 0.5% of the projected PRB production or about 0.2% of total U.S. coal
11 production. The Company's natural gas usage is significantly less than 0.01% of U.S.
12 natural gas production. Both of these markets are driven by factors other than Evergy
13 Missouri West's market share.

14 **Q: What are the fundamental drivers for the fuel markets?**

15 A: The fundamental drivers for the short-term market are different than the key drivers for
16 the long-term market. Short-term markets reflect the convergence of changes in demand
17 expectations and the fundamentals of readily available or stored energy. Some of the
18 short-term fundamental drivers would include events such as storms that might disrupt
19 immediate delivery of the energy. Temperature spikes or drops can also cause short-term
20 imbalances between the demand and the immediately available supply. These weather
21 induced imbalances can cause significant price spikes especially for natural gas and
22 electricity due to their limited storage.

1 Long-term markets reflect the convergence of expectations of future potential supply,
2 including the cost to produce that supply, and future potential demand. For example,
3 throughout much of the prior decade, the development of shale based natural gas
4 resources greatly increased the expected supply of natural gas. That in turn depressed the
5 long-term outlook for natural gas prices. Recently, that narrative has shifted to one of
6 demand growth exceeding supply growth and fuel prices are higher as a result. Because
7 most natural gas consumers have inelastic demands but do not have storage, the short-
8 term fundamentals will still drive significant market uncertainty, just at a higher base
9 level than expected than during the era of shale gas development.

10 **B. 20 CSR 4240-20.090(2)(A) Requirements**

11 **Q: When an electric utility files a general rate proceeding following the general rate**
12 **proceeding that established its rate adjustment mechanism (“RAM”) and requests**
13 **that its RAM be continued or modified, Commission rule 20 CSR 4240-20.090(2)(A)**
14 **requires the electric utility file certain supporting information as part of, or in**
15 **addition to, its direct testimony. Which of those requirements will you address?**

16 **A:** I will address requirement 12 and explain the rate volatility mitigation features in Evergy
17 Missouri West’s FAC. I will also address the parts of requirement 17 focused on
18 emissions management policy, emissions allowances purchases, and emissions
19 allowances sales. The Direct Testimony of Company witness Eric Peterson will address
20 the other part of requirement 17 regarding forecasted environmental investments.

1 **1. Requirement 12: Mitigating Fuel Market Risk (Price Volatility)**

2 **Q: Does a strategy exist for managing the price risk of Evergy Missouri West coal?**

3 **A: Yes Q: Which stations does Evergy Missouri West’s coal price risk management**
4 **strategy apply to?**

5 A: Coal for the Evergy Missouri West portion of Iatan Station and Jeffrey Energy Center is
6 procured by the owner-operators, Evergy Metro and Evergy Kansas Central, as described
7 below. Coal for Lake Road is generally purchased a few trains at a time on more of a
8 short-term (prompt or intra-year) basis given the very small volumes of coal that are
9 burned at the station.

10 **Q: Please describe how price risk is mitigated for Evergy Missouri West coal.**

11 A: In the PRB coal market, the primary means of managing price risk is through a portfolio
12 of forward contracts. Generally, a strategy of laddering into a portfolio of forward
13 contracts for PRB coal is followed. Laddering is an investment technique of purchasing
14 multiple products with different maturity dates. Evergy Missouri West’s “laddered”
15 portfolio for Iatan Station and Jeffrey Energy Center consists of forward contracts with
16 staggered terms so that a portion of the portfolio will roll over each year. That strategy
17 may be modified when there are anticipated market price increases and the choice may be
18 made to either commit for more coal before the increase, or delay committing until after
19 the increase has waned.

20 **Q: What does that laddered portfolio look like?**

21 A: By the end of November 2021, Evergy Missouri West had contractual commitments for
22 the ** [REDACTED] ** of its expected coal requirements for 2022 and ** [REDACTED]
23 [REDACTED] ** of its expected coal requirements for 2023. It also had commitments for a

1 ** [REDACTED] ** of its expected coal requirements for 2024, however ** [REDACTED]
2 [REDACTED] ** for 2025.

3 **Q: Does Evergy Missouri West update its fuel procurement and planning process to**
4 **adjust for changes in the marketplace?**

5 A: Yes. Evergy Missouri West routinely reviews fuel market conditions and market drivers.
6 We monitor market data, industry publications and consultant reports in an effort to avoid
7 high prices and to take advantage of lower prices.

8 **Q: How has this strategy performed for Evergy Missouri West?**

9 A: Over the last five years (2017-2021), this strategy has helped Evergy Missouri West to
10 mitigate any potential coal market volatility while securing reliable supply at the same
11 time. If we calculate volatility as the annualized standard deviation of percent change in
12 price, the volatility of the annual average prices Evergy Missouri West paid was 7.5%.
13 That is less than the 12% average annualized daily volatility of observed prompt quarter
14 strip prices for the same timeframe.

15 **Q: Please describe how Evergy Missouri West will mitigate price risk for natural gas**
16 **and purchased power.**

17 A: As discussed above, Evergy Missouri West has proposed to resume natural gas and
18 power hedging activities on a go-forward basis. Additionally, Evergy Missouri West is
19 seeking permission to utilize cross-hedging on a go-forward basis as a mechanism to
20 mitigate the price risk for purchased power for the reasons discussed on pages 25 – 28
21 above.

1 **2. Requirement 17: Emissions Management Policy, Emissions Allowances Purchases, and**
2 **Emissions Allowances Sales**

3 **Q: What is the purpose of this portion of your testimony?**

4 A: I will discuss the legal requirements for emission allowances and explain Evergy
5 Missouri West’s current emissions management policy and strategy for meeting those
6 requirements.

7 **Q: For which pollutants is Evergy Missouri West required to hold sufficient emission**
8 **allowances?**

9 A: Evergy Missouri West is required, for each affected facility, to hold sufficient SO₂ and
10 NO_x allowances. These allowances are issued by the Environmental Protection Agency
11 (“EPA”).

12 **Q: Describe Evergy Missouri West’s emissions management policy.**

13 A: Evergy Missouri West maintains dedicated internal resources to oversee and maintain the
14 various allowance accounts under each regulatory program. Annually, Evergy Missouri
15 West ensures enough allowances are in each facility account to cover the emissions from
16 each affected unit for the applicable calendar year. All allowance transactions are
17 approved by the management team overseeing the process, which includes both the Acid
18 Rain Program (ARP) and the Cross-State Air Pollution Rule (CSAPR) Designated
19 Representative and Alternate Designated Representative.

20 **Q: What rules or regulations established the need for emission allowances?**

21 A: Title IV of the 1990 Clean Air Act Amendments established the allowance market
22 system known today as the Acid Rain Program (“ARP”). Title IV set a nationwide cap

1 on total SO₂ emissions and aimed to reduce overall emissions by approximately 50% of
2 1980 levels.

3 In 2011, the EPA finalized the Cross-State Air Pollution Rule (“CSAPR”). The CSAPR
4 limits the interstate transport of SO₂ and NO_x emissions from affected states that EPA
5 has determined interfere with the ability of other states to attain particulate matter
6 (PM_{2.5}) and ozone National Ambient Air Quality Standards (NAAQS).

7 The ARP and the CSAPR are allowance trading programs and any facility specific
8 shortages can be addressed by trading allowances within or outside Evergy Missouri
9 West’s system. We anticipate the ARP annual SO₂ allowances and the CSAPR annual
10 NO_x and SO₂ allowances will be readily available because of the significant reduction in
11 coal generation since the original rules were issued driven by the impact of renewable
12 generation development, the natural gas market, and unit retirements. However, due to
13 the continued ratcheting down of the CSAPR ozone season NO_x program, ozone season
14 NO_x allowances may not be as readily available in the future. Currently, Evergy
15 Missouri West has a sufficient supply of banked ozone season NO_x allowances for future
16 utilization.

17 It is important to note, the ARP allowances cannot be used to comply with the CSAPR
18 and the CSAPR allowances cannot be used to comply with the ARP.

19 **Q: Will emissions allowance costs or sales margins be included in the FAC?**

20 A: Yes.

21 **Q: What are Evergy Missouri West’s forecasted allowance purchases and sales?**

22 A: Under current regulations, Evergy Missouri West is not expecting to purchase or sell
23 notable volumes of emission allowances, if any at all.

1 Q: Does that conclude your testimony?

2 A: Yes, it does.

**BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI**

In the Matter of Evergy Missouri West, Inc. d/b/a)
Evergy Missouri West's Request for Authority to) Case No. ER-2022-0130
Implement A General Rate Increase for Electric)
Service)

AFFIDAVIT OF JESSICA L. TUCKER

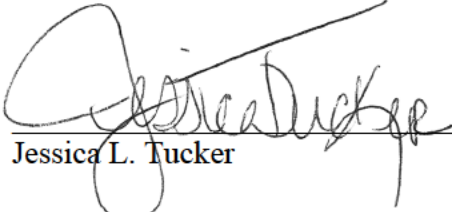
STATE OF MISSOURI)
) **ss**
COUNTY OF JACKSON)

Jessica L. Tucker, being first duly sworn on his oath, states:

1. My name is Jessica L. Tucker. I work in Kansas City, Missouri, and I am employed by Evergy Metro, Inc. as Senior Manager, Fuels & Emissions.

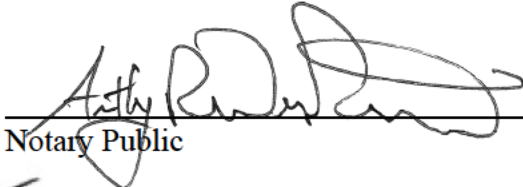
2. Attached hereto and made a part hereof for all purposes is my Direct Testimony on behalf of Evergy Missouri West consisting of thirty-five (35) pages, having been prepared in written form for introduction into evidence in the above-captioned docket.

3. I have knowledge of the matters set forth therein. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded, including any attachments thereto, are true and accurate to the best of my knowledge, information and belief.



 Jessica L. Tucker

Subscribed and sworn before me this 7th day of January 2022.



 Notary Public

My commission expires: 4/26/2025

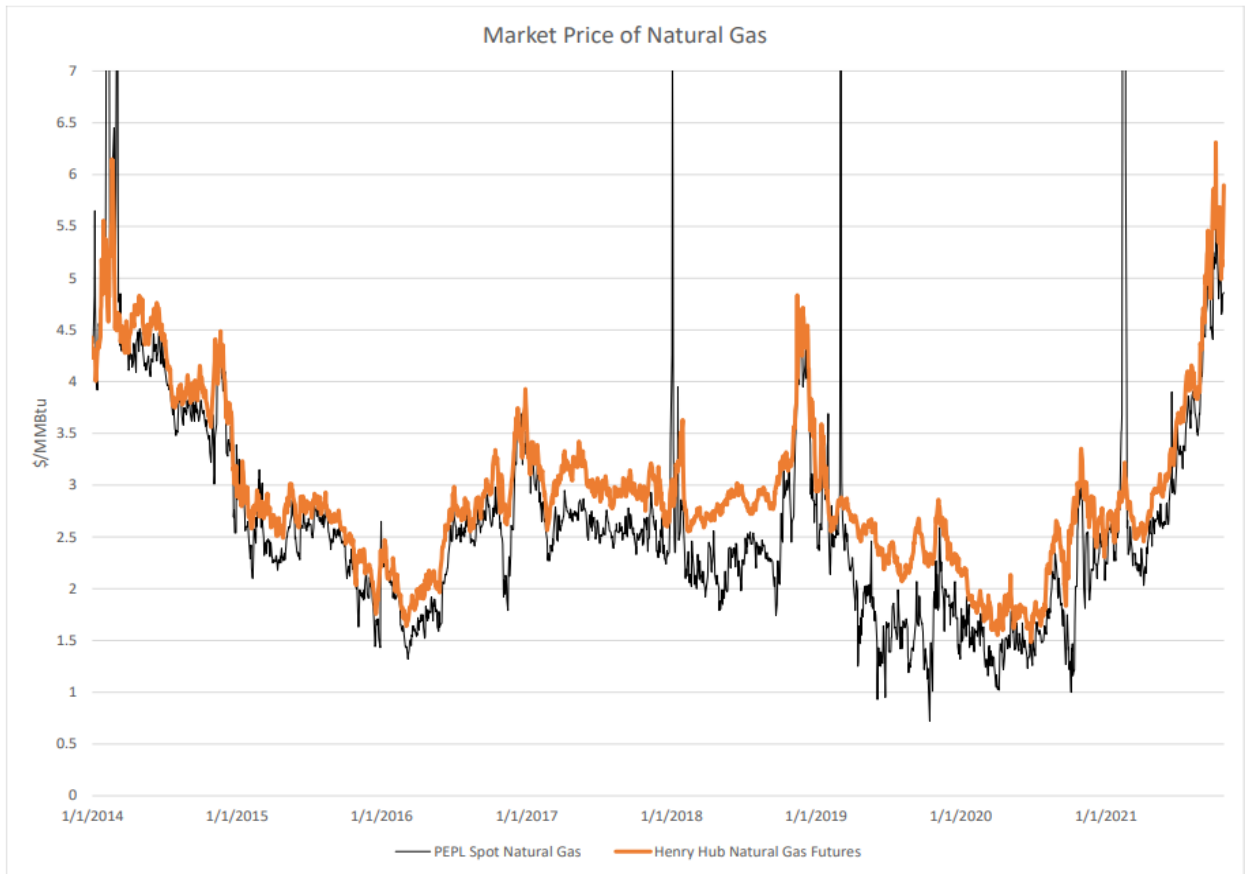
ANTHONY R. WESTENKIRCHNER
NOTARY PUBLIC - NOTARY SEAL
STATE OF MISSOURI
MY COMMISSION EXPIRES APRIL 26, 2025
PLATTE COUNTY
COMMISSION #17279952

SCHEDULE JLT-1

**CONTAINS CONFIDENTIAL
INFORMATION
NOT AVAILABLE TO THE PUBLIC.**

ORIGINALS FILED UNDER SEAL.

Schedule JLT-2



Schedule JLT-3

