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BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

FILE NO. EO-2020-0262
FILE NO. EO-2020-0263

DIRECT TESTIMONY
OF
TYLER COMINGS

ON BEHALF OF SIERRA CLUB

July 30, 2020

Public Version

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Ninth Prudence Review of Costs Subject to the Commission-Approved Fuel Adjustment Clause of Evergy Missouri West, Inc. d/b/a Evergy Missouri West	)	**Case No. EO-2020-0262**
In the Matter of the Third Prudence Review of Costs Subject to the Commission-Approved Fuel Adjustment Clause of Evergy Metro, Inc. d/b/a Evergy Missouri Metro	)	**Case No. EO-2020-0263**

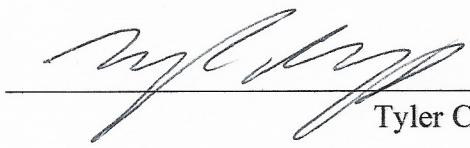
AFFIDAVIT

Pursuant to Missouri Public Service Commission Guidance released on March 24, 2020,

I, Tyler Comings, hereby state:

1. My name is Tyler Comings, and I am a Senior Researcher at Applied Economics Clinic. My business address is 1012 Massachusetts Avenue, Arlington, Massachusetts.
2. Attached hereto and made part hereof for all purposes is my Direct Testimony on behalf of Sierra Club, including exhibits, all of which have been prepared in written form for introduction into evidence in the above-referenced docket.
3. I hereby swear and affirm that based upon my personal knowledge, the facts stated in the direct testimony are true. In addition, my judgment is based upon my professional experience, and the opinions and conclusions stated in the testimony are true, valid, and accurate.

Under penalty of perjury, I declare that the foregoing is true and correct to the best of my knowledge and belief.



Tyler Comings

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I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name, business address, and position.

A. My name is Tyler Comings. I am a Senior Researcher at Applied Economics Clinic, located at 1012 Massachusetts Avenue, Arlington, Massachusetts.

Q. Please describe Applied Economics Clinic.

A. The Applied Economics Clinic is a 501(c)(3) non-profit consulting group housed at Tufts University's Global Development and Environment Institute. Founded in February 2017, the Clinic provides expert testimony, analysis, modeling, policy briefs, and reports for public interest groups on the topics of energy, environment, consumer protection, and equity, while providing on-the-job training to a new generation of technical experts.

Q. Please summarize your work experience and educational background.

A. I have 14 years of experience in economic research and consulting. At Applied Economics Clinic, I focus on energy system planning, costs of regulatory compliance, wholesale electricity markets, utility finance, and economic impact analyses. I am also a Certified Rate of Return Analyst (CRRA) and member of the Society of Utility and Regulatory Financial Analysts (SURFA).

I have provided expertise for many public-interest clients including: American Association of Retired Persons (AARP), Appalachian Regional Commission, Citizens Action Coalition of Indiana, City of Atlanta, Consumers Union, District of Columbia Office of the People's Counsel, District of Columbia Government, Earthjustice, Energy Future Coalition, Hawaii Division of Consumer Advocacy,

Illinois Attorney General, Maryland Office of the People's Counsel, Massachusetts Energy Efficiency Advisory Council, Massachusetts Division of Insurance, Michigan Agency for Energy, Montana Consumer Counsel, Mountain Association for Community Economic Development, Nevada State Office of Energy, New Jersey Division of Rate Counsel, New York State Energy Research and Development, Nova Scotia Utility and Review Board Counsel, Rhode Island Office of Energy Resources, Sierra Club, Southern Environmental Law Center, U.S. Department of Justice, Vermont Department of Public Service, West Virginia Consumer Advocate Division, and Wisconsin Department of Administration.

I was previously employed at Synapse Energy Economics, where I provided expert testimony and reports on power plant economics and utility system planning. Prior to that, I performed research on consumer finance and behavioral economics at Ideas42 and conducted economic impact and benefit-cost analysis of energy and transportation investments at EDR Group.

I hold a B.A. in Mathematics and Economics from Boston University and an M.A. in Economics from Tufts University.

My full resume is attached as Exhibit TC-1.

Q. On whose behalf are you testifying in this case?

A. I am testifying on behalf of Sierra Club.

Q. Have you testified before the Missouri Public Service Commission previously?

A. No.

Q. Have you co-authored comments on Integrated Resource Plans (IRPs) in Missouri?

A. Yes. I recently assisted the Sierra Club with comments on the 2020 Evergy Metro and Evergy West IRP Updates (Case Nos. EO-2020-0280 and EO-2020-0281, filed on May 18, 2020) and a stakeholder comment letter on Ameren's 2020 IRP process (sent on April 6, 2020).

Q. Have you testified before other public utility commissions in other jurisdictions?

A. Yes. I have testified before commissions in Colorado, the District of Columbia, Hawaii, Indiana, Kentucky, Maryland, Michigan, New Jersey, New Mexico, Ohio, Oklahoma, West Virginia, and Nova Scotia (Canada).

Q. What is the purpose of your testimony?

A. The focus of my testimony is to evaluate the variable costs, market revenues, and energy market commitment practices and decisions for the coal units of Evergy Metro and Evergy Missouri West (together "Evergy") including: Hawthorn Unit 5, Iatan Units 1 and 2, Jeffrey Units 1, 2, and 3, and LaCygne Units 1 and 2.

Q. Please summarize your findings and recommendations.

A. Based on my review of the data provided by Evergy in this case, I conclude that:

1. **Evergy should commit its units on a "market" basis.** Evergy has recently moved more towards "market" commitment of its coal units rather than "self" commitment. This means that the decision whether or not to operate a unit is more likely to be determined each day by the competition in the

energy market—Southwest Power Pool (SPP)—rather than pre-determined by Evergy. Market (or "economic") commitment should be encouraged as it is beneficial for the SPP marketplace and likely for Evergy's ratepayers.

2. **If Evergy is self-committing its units, it must provide clear justification for those decisions.** In discovery, Evergy was unable to provide documentation to support its past decisions to self-commit its coal units. Without such information, it is impossible to assess whether self-commitment was prudent or if the utility should have market-committed the units instead. Evergy should be required to document its self-commitment decisions; in the absence of such documentation, costs related to self-commitment should be disallowed in future cases.

3. **Evergy understates the units' variable costs, leading to long periods of losses.** Whether the units are committed on a "market" or "self" basis, the hourly bids provided to SPP should closely match what is reported by Evergy for fuel and variable operations and maintenance (O&M) costs for extended periods. However, I find that Evergy routinely underbids its coal units, leading them to operate more frequently than they should have—whether self-committed or not. If the units were bidding a reasonable variable cost, then the units would not be operated on a cost-basis. This leads to extended periods where the units are losing money because their variable costs exceed the money they collect. I estimate ** [redacted] ** in losses at the Jeffrey units due to Evergy understating variable costs—or ** [redacted] ** in losses due to fuel costs alone.

4. **Evergy should clearly delineate between variable and fixed O&M costs.** Part of evaluating the units' operations involves variable O&M, but it is unclear if Evergy's measure of these costs is accurate. Evergy uses a simplistic breakdown to determine variable and fixed O&M costs (20 percent and 80 percent). It should employ a more sophisticated tracking of variable and fixed O&M costs, especially for purposes of evaluating dispatch decisions.

Q. What are your recommendations?

A. Based on my findings above, I recommend the following:

1. Evergy should commit its units on a market-basis as often as possible.

2. If Evergy continues to self-commit its units, it must justify those actions with an economic analysis that shows it is cost-effective and not discard that analysis. Moving forward, the Commission should make clear to Evergy that it will disallow costs associated with unit self-commitment without documented economic analyses that supports the prudence of those decisions.

3. The Commission should disallow ** [redacted] ** or, at a minimum, ** [redacted] ** at the Jeffrey units due to Evergy understating the units' variable costs.

4. On average, Evergy's bids into the SPP market should be similar to its reported fuel and variable O&M costs.

5. Evergy should differentiate between variable and fixed O&M costs so it can report them more accurately going forward.

II. EVERGY SHOULD CONTINUE ITS SHIFT AWAY FROM SELF-COMMITMENT.

Q. Please summarize this section.

A. In this section, I discuss the commitment practices of Evergy Metro and Evergy Missouri West regarding their coal units. At the outset of the prudence review period, Evergy relied heavily on deciding when to operate its units ("self-commitment") instead of relying on the Southwest Power Pool (SPP) Integrated Marketplace (IM) to commit the units on a cost or market basis. However, in 2019, Evergy started to lean more towards market-commitment. I discuss the merits of this change in their commitment process. I also discuss the lack of underlying analysis of Evergy's past self-commitment decisions.

Q. Please describe the difference between "market" and "self" commitment.

A. Evergy Metro and Evergy Missouri West are members of the SPP IM, which coordinates the movement of electricity in a large, multi-state region on a least-cost basis. SPP optimizes the units that will be committed based on cost and operating constraints—this process is called "centralized unit commitment."[1] Participating generators can be committed each day on a market basis or "self-commit."[2] A

[1] Southwest Power Pool Market Monitoring Unit, *Self-committing in SPP markets: Overview, impacts, and recommendations*, at 4 (Dec. 2019), available at: https://spp.org/documents/61118/spp%20mmu%20self-commit%20whitepaper.pdf.

[2] Units can also be committed on a "reliability" basis, which the Market Monitor describes as "the resource is off-line and is only available for centralized unit commitment if there is an anticipated reliability issue." *Id*. at 5.

market-based commitment means that SPP determines if the unit should be operated that day based on SPP's own optimization of all the resources available to meet the next day's demand. A self-commitment means that the unit's owner has decided that the unit will operate that day at a bare minimum level ("economic minimum").[3] Because SPP does not control whether these self-committed units are turned on that day, it takes these minimum operating levels as-read. These self-committed units effectively bid zero into the market, therefore they are committed prior to any market-committed units with positive costs. Thus, the more units that are self-committed, the less likely that market-committed units are to be chosen to operate on a given day and the less efficient the SPP market becomes.[4]

Q. How are committed units dispatched by SPP?

A. Once units are committed, their megawatts of output are determined on a least-cost basis. In the day-ahead energy market, SPP projects hourly demand to occur the next day and dispatches available generators to operate in order to serve that demand. In the real-time market, generators are dispatched at five-minute intervals in order to serve fluctuations in load that were not anticipated in the day-ahead forecast.

Owners of generating units typically bid the variable cost of the unit, i.e., the cost it takes the unit to produce the next unit of energy, or variable costs. SPP optimizes

[3] 'Economic minimum' operating level is an output threshold often determined operationally, and below which a generating unit is either less stable or operates inefficiently.

[4] Southwest Power Pool Market Monitoring Unit, *Self-committing in SPP markets: Overview, impacts, and recommendations*, at 6-9 (Dec. 2019), available at: https://spp.org/documents/61118/spp%20mmu%20self-commit%20whitepaper.pdf.

the committed units' variable costs until demand is satisfied. The highest-cost unit that is dispatched (the "marginal unit") sets the energy price or locational marginal price (LMP), factoring in transmission limitations. The further a unit's variable costs are below that energy price and the more power it produces, the more profitable the unit will be over the time period it is operating. If the unit's variable costs are above that market price, SPP will not dispatch the unit—barring the unit's operating constraints.

Q. Once the units are committed, is the dispatch process different for self- and market-committed units?

A. Yes. While SPP optimizes the costs of all committed units in order to determine the level at which to operate them, it has more control over the level that market-based units will operate. SPP can dispatch self-committed units above their economic minimum level if it is cost-effective for the system. However, it must at least operate these units at their economic minimums when the unit owner dictates.[5]

Q. Did Evergy Metro and Evergy Missouri West recently shift away from self-commitment towards market commitment?

A. Yes, ** [redacted] **. I analyzed the hourly commitment status of each of Evergy's units and summarized them by month and year. For each of the Evergy Metro and Missouri West coal units, the figures below show the percentage of generation that was self-committed in 2018 and 2019 (when not on an

[5] Other units are "self-scheduled" by the owners because they are not dispatchable, e.g. wind farms. This testimony focuses on dispatchable coal units. *Id*. at 28. Evergy also stated that it self-schedules the units for "testing, environmental compliance needs or if there is a unit reliability concern." Evergy Response to Sierra Club Data Request 1.2(a).

outage).[6] The ** ** and ** ** units show the most ** ** in 2019. ** ** and ** ** show ** **, but this was ** **; the overall level of self-commitment was relatively ** **. When not on an outage, ** ** was ** ** market-committed starting July 2019 and ** ** was ** ** market-committed. For each unit, the percentage of hours that are self-committed, market-committed, or on an outage are provided by month in Exhibit TC-2.

Figure 1: Evergy Metro Units, % of Generation Self-Committed
CONFIDENTIAL[7]

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[6] All of the data on commitment in this section comes from Evergy Response to Sierra Club Data Request 1.2 CONFIDENTIAL, and it excludes outages. Corrected unit data was provided in QSierra Club-2.4_CONF_Iatan 1 MO West Dispatch and Settlements CORRECTED, QSierra Club-2.4A_CONF_Iatan 2 MO West Dispatch and Settlements CORRECTED V2, and QSierra Club-2.3_CONF_Jeffrey 3 MO West Dispatch and Settlements CORRECTED and Sierra Club 2.3c. ** **

[7] *Id.*

Figure 2: Evergy Missouri West Units, % of Generation Self-Committed
CONFIDENTIAL[8]

Q. Has Evergy stated that it has shifted away from self-commitment?

A. Yes. When asked about its self-commitment decision process, Evergy stated that:

> …unit commitment decisions are not made as they were in the past. The Company currently offers its coal-fired generation in Market commit status a majority of the time.[9]

This statement bears out in the data provided by Evergy.

Q. Has the SPP market monitor discouraged utilities from self-commitment?

A. Yes. The SPP market monitor has recently focused on self-commitment practices in the marketplace. In 2019, the market monitor released a whitepaper that included an in-depth analysis on the impacts of self-commitment in SPP.[10] The market monitor

[8] *Id.*
[9] Evergy Response to Sierra Club Data Request 1.4(c).
[10] Southwest Power Pool Market Monitoring Unit, *Self-committing in SPP markets:*

also discusses and tracks self-commitment data in its quarterly and annual State of the Market reports.

In the 2018 Annual State of the Market report, the market monitor described how self-committed resources distort the market, stating that:

> Self-commitment of generation continues to be a concern because it does not allow the market software to determine the most economic market solution.[11]

And:

> These resources are not appropriately evaluated in the current market structure and can be committed by market participants during uneconomic periods.[12]

In the 2019 Annual State of the Market report, after its 2019 analysis of self-commitment, the market monitor stated that:

> … it is imperative to minimize the need to self-commit resources to realize the full benefits of SPP's market. While there may not be a single reason causing market participants to self-commit resources, there can be ways that SPP and its stakeholders can work to minimize the incentives to self-commit.[13]

Overview, impacts, and recommendations, (Dec. 2019), available at: https://spp.org/documents/61118/spp%20mmu%20self-commit%20whitepaper.pdf.

[11] Southwest Power Pool Market Monitoring Unit, State of the Market Report 2018, at 5 (May 15, 2019), available at: https://www.spp.org/documents/59861/2018%20annual%20state%20of%20the%20market%20report.pdf.

[12] *Id*. at 243.

[13] Southwest Power Pool Market Monitoring Unit, State of the Market 2019, at 287 (May 11, 2020), available at: https://www.spp.org/documents/62150/2019%20annual%20state%20of%20the%20market%20report.pdf.

It appears that utilities started to address this concern. In the most recent quarterly State of the Market for Spring 2020, the SPP market monitor noted that self-commitment has been on a "downward trend with approximately 19 percent of commitments with this status in spring 2020, down from 25 percent in spring 2018 and 24 percent in spring 2019."[14] The market monitor stated that, although this was a "a positive trend, we continue to encourage market participants and the RTO to find ways to enhance market efficiencies and reduce self-commitment.[15]

Q. Are some units self-committed because they have long start up and shut down times?

A. Yes. The day-ahead market in SPP asks for hourly bids one day in advance and commits units each day. But coal and nuclear units have long start up and shut down times (also called ramping and de-ramping, respectively). Thus, they are not able to cycle on or off easily. This leads some operators, like Evergy, to conduct their own analysis of when to commit the units and then sometimes self-commit into the SPP market. But this is not efficient because many different owners are conducting their own analyses of when to operate their own units, using inconsistent information from one another, and without the knowledge of the costs of other units that they are competing against in the market. The more units move away from self-commitment towards market commitment, the more efficient that

[14] Southwest Power Pool Market Monitoring Unit, State of the Market Spring 2020, at 21 (July 20, 2020), available at: https://www.spp.org/documents/62618/spp_mmu_qsom_spring_2020.pdf.
[15] *Id.*

market will function.[16] In order to encourage this shift, the market monitor recommends that SPP change to a two-day ahead commitment process rather than one-day ahead.[17] This move would discourage owners from doing their own side calculation and instead subject their units to market competition.

Q. Did Evergy adequately justify its past self-commitment decisions?

No. While Evergy has apparently moved away from self-commitment, there is no data supporting its decisions to self-commit the units in this prudence review period. When asked for supporting documentation to justify self-commitment decisions during the prudence review window of these dockets, the Company was unable to provide any, stating that:

> Documentation as requested does not exist. Analyses performed to inform the determination of commitment status were temporary and ad-hoc in nature…[18]

And:

> Analyses of the market, whether to inform a unit commitment decision or other, happen frequently and are not tracked by the Company. Typically, when a generating unit had a commitment status of Self during the prudence review period the market was analyzed.[19]

[16] *See* Southwest Power Pool Market Monitoring Unit, State of the Market 2019, at 18 (May 11, 2020), available at: https://www.spp.org/documents/62150/2019%20annual%20state%20of%20the%20market%20report.pdf.
[17] *Id.*
[18] Evergy Response to Sierra Club Data Request 2.1(b).
[19] Evergy Response to Sierra Club Data Request 2.1(a).

As a general practice, if utilities are self-committing units, they must keep a record of the analyses underlying those decisions because the costs involved in these decisions can be significant. As it stands, in these two cases, Staff and the Commission cannot review the prudence of those self-commitment decisions.

Q. What are your conclusions regarding Evergy's commitment practices?

A. First, Evergy's shift towards market-commitment and away from self-commitment is a positive development. This shift, especially if continued, will lead to a more efficient wholesale market where ratepayers acquire their energy needs. Ratepayers should not pay the variable costs to run units when those units are not competitive in the marketplace. Second, Evergy should have justified its past self-commitment decisions and, if it continues to self-commit, it must adequately justify such decisions going forward. Future self-commitment decisions should be justified and documented or else deemed imprudent.

III. THE VARIABLE COSTS OF EVERGY'S COAL UNITS NEED CLARITY.

Q. Please summarize this section.

A. In this section, I discuss my analysis of the costs and revenues of Evergy's coal units. I find that the variable costs of Evergy's units that are used for SPP dispatch are understated relative to the reported costs of fuel and variable O&M. Also, Evergy's estimate of variable O&M is too simplistic and should be refined to arrive at a more accurate estimate.

Q. Should Evergy collect sufficient revenue to cover variable costs for its units?

A. Yes. Generating units require fixed costs to be available to operate (including fixed operations and maintenance or O&M, and capital costs) and variable costs (including fuel and variable O&M) for each megawatt hour of generation. If a unit is being perfectly dispatched on an economic basis, it operates only when its variable costs are at or below the energy revenue it will collect—i.e., it has positive net revenue. If the unit operates at a loss—i.e., negative net revenue—ratepayers would have been better off not paying for the variable costs to run those units because the market revenue was not sufficient to cover those costs. Because coal units take many hours to ramp and de-ramp, there can be consecutive hours where the unit is operating at a loss; but over a longer period, the unit should be making money or breaking even. Moreover, units that are market-committed by SPP also collect "make whole" payments to ensure that generators collect enough revenue to cover their variable costs for market-committed units.[20]

Q. If a unit makes money or breaks even, does that prove that the unit was operated prudently?

A. No. At a minimum, generators that are prudently-operated should break even or have positive net revenues over an extended period. But, for instance, given the information available at the time, the unit could have received even higher net revenues because either: 1) it was too costly during that period and its operations should have been decreased; or 2) it was more competitive during that period and

[20] *See* Southwest Power Pool, Make-Whole Payments (Apr. 12, 2012), available at: https://www.spp.org/documents/17009/mwp%20sug%20presentation_april2012%20(no%20notes).pdf.

its operations should have been increased. In either case above, even if the unit had positive net revenue, the unit was not operated prudently.

Q. Should the variable costs of the units be consistent with what is provided to the wholesale market?

A. Yes, over an extended period. While costs fluctuate for different operating levels, for instance due to the units' heat rate, the costs per MWh over a long period provided to the wholesale market should be consistent with actual costs incurred by the utility. If the utility is continually understating variable costs when submitting its bid into the wholesale market, the unit could be dispatched more often than it should. In this case, ratepayers would be overcharged if the unit's market revenue did not cover its variable costs or its "net revenue" was negative.

Q. Please explain how you analyzed the variable costs of Evergy's coal units.

A. I reviewed the hourly data provided by the Company in terms of commitment status, generation, SPP market revenue, and the bids submitted to SPP.[21] I also reviewed the actual fuel and variable O&M costs that Evergy reports on a monthly and quarterly basis, respectively.[22] In broad steps, my analysis of the data included the following:

1. I calculated the hourly bid costs of each unit using the same data that Evergy uses to construct its bids into SPP each hour.

[21] Evergy Response to Sierra Club 1.2 CONF attachments for each unit.
[22] Southwest Power Pool, Make-Whole Payments (Apr. 12, 2012), available at: https://www.spp.org/documents/17009/mwp%20sug%20presentation_april2012%20(no%20notes).pdf.

2. I generated the net revenues for each hour by calculating the difference in bid costs (multiplied by the MWhs generated) and the reported hourly revenue from SPP.

3. I calculated monthly variable costs using actual fuel and variable O&M spending.[23] To be conservative (i.e., in Evergy's favor), I took the lowest of two possible variable cost concepts: a) the six-month average of previous fuel and variable O&M costs, and b) the actual fuel and variable O&M costs incurred in the current month. In order to mirror the information that Evergy would have had at the time of its decisions, I use historical costs (as of the current month) but allow for the possibility of lower costs from the current month—assuming those costs could have been anticipated.

4. I calculated the net revenue using this variable cost for two concepts: a) net revenue for all hours of the month, and b) net revenue excluding outage hours in each month. For months that had negative net revenue, I filtered out those months where more than 30 percent of the hours had outages.

5. Finally, I took the smallest net revenue loss between the two concepts above. This was a conservative approach that favored Evergy by taking the most favorable outcome in each month.

Q. During which time periods did you evaluate the costs and revenues of the units?

A. After reviewing and analyzing hourly data on operations and bid information, as well as monthly fuel costs and quarterly variable costs, I estimated the net revenues of each unit on a monthly basis. The monthly timeframe closely matches the period of the Company's "31-day profit and loss projection" that Evergy performs on the units.[24]

Q. Did you find that the units had positive net revenues on a monthly basis, based on Evergy's bid cost information?

A. **[redacted]**[25]

Q. Did you find that the monthly and annual variable costs reported by Evergy were higher than what it used in its bid information?

A. Yes. On average, Evergy's reported costs of fuel and variable O&M (VOM) were higher than what it used to develop its bids into SPP. Tables 1 and 2, below, depict the comparison of annual costs for Evergy Metro and Evergy Missouri West.[26] As

[24] Evergy Response to Sierra Club 2.1(c).
[25] **[redacted]**
[26] Fuel costs are reported by month in response to Staff: Q0007_CONF_EO-2020_0262_MPSC_20200316_Fuel Stats [*each month*]. I used the **[redacted]** from these reports, not the **[redacted]** which is the higher of the two. Variable O&M is reported in QSierra Club-2.5_CONF_VOM 2015-2016-2017-2019 thru 12-31-19 and Q1.3_CONF_VOM 2015-2016-2017-2019 thru 09-30-19. All costs shown are weighted averages using the units' generation in that month. Individual unit data from Company response to SC 1.2 CONFIDENTIAL attachments. Bid cost calculated from **[redacted]** tabs for each unit. Fuel costs are the lowest of 1) the average of the previous six months, and 2) the current month. Variable

shown here, some of the variable costs are substantially higher than the weighted-average cost bid into SPP. For instance, the Jeffrey units' costs were approximately ** [redacted] ** that the units' bids.

Table 1: Evergy Metro Bid Costs vs. Variable Costs ($/MWh)
CONFIDENTIAL[27]

	Bid cost ($/MWh)	Fuel and VOM ($/MWh)	% increase
2018			
Hawthorn 5	** [redacted] **	** [redacted] **	** [redacted] **
Iatan 1	** [redacted] **	** [redacted] **	** [redacted] **
Iatan 2	** [redacted] **	** [redacted] **	** [redacted] **
LaCygne 1	** [redacted] **	** [redacted] **	** [redacted] **
LaCygne 2	** [redacted] **	** [redacted] **	** [redacted] **
2019			
Hawthorn 5	** [redacted] **	** [redacted] **	** [redacted] **
Iatan 1	** [redacted] **	** [redacted] **	** [redacted] **
Iatan 2	** [redacted] **	** [redacted] **	** [redacted] **
LaCygne 1	** [redacted] **	** [redacted] **	** [redacted] **
LaCygne 2	** [redacted] **	** [redacted] **	** [redacted] **

** **

O&M is the lowest of (a) the average of the previous two quarters and (b) the current quarterly average.
See note 27.

Table 2: Evergy Missouri West Bid Costs vs. Variable Costs ($/MWh)
CONFIDENTIAL[28]

	Bid cost ($/MWh)	Fuel and VOM ($/MWh)	% increase
2018			
Iatan 1	** [redacted] **	** [redacted] **	** [redacted] **
Iatan 2	** [redacted] **	** [redacted] **	** [redacted] **
Jeffrey 1	** [redacted] **	** [redacted] **	** [redacted] **
Jeffrey 2	** [redacted] **	** [redacted] **	** [redacted] **
Jeffrey 3	** [redacted] **	** [redacted] **	** [redacted] **
2019			
Iatan 1	** [redacted] **	** [redacted] **	** [redacted] **
Iatan 2	** [redacted] **	** [redacted] **	** [redacted] **
Jeffrey 1	** [redacted] **	** [redacted] **	** [redacted] **
Jeffrey 2	** [redacted] **	** [redacted] **	** [redacted] **
Jeffrey 3	** [redacted] **	** [redacted] **	** [redacted] **

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Q. When using actual variable costs, rather than bid costs, were there net revenue losses in some months?

A. Yes. As previously described, I took several steps to be conservative (i.e., in Evergy's favor) in my analysis—taking the more favorable result where possible. I calculated net revenues using the lowest of the previous six months' variable cost and that of the current month.[29] I then took the most favorable of two monthly net revenues, one using all hours of the month and another excluding outages. Finally, only months where the units were on an outage less than 30 percent of the time were included.

[28] *See* note 27. The analysis incorporates ** [redacted] ** made by Evergy in response to Sierra Club Data Request 2.7(c) and Q1.3S_CONF_JEC Incremental Coal Prices for Market Offers. I accounted for the ** [redacted] ** so the impact of those ** [redacted] ** did not impact the monthly net revenue losses.

[29] I also excluded one month where ** [redacted] **

I found that the Jeffrey units, which shown above had the largest difference in bid costs and actual costs, had negative net revenues in several months—shown in Table 3. From September 2018 through December 2019, this resulted in ** [redacted] ** This represents overcharging of variable costs to ratepayers because the units were less competitive than what was indicated to SPP and customers would have been better off had the units had operated less frequently in these months.

Based on the differences in fuel and variable O&M costs, I allocated the share of losses attributable only to fuel costs: ** [redacted] **. This represents the amount of fuel costs that should have been avoided at these units. If the Commission can only disallow fuel costs (and not variable O&M costs) in this docket, then it should disallow this latter amount.

Table 3: Monthly Net Revenue Losses ($) CONFIDENTIAL[30]

Unit	Year	Month	Losses	*Losses from fuel only*	Self-commit % (non-outage)
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TOTAL			** **	** **	

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Q. Should Evergy have operated its units less often during the months of losses?

A. Yes. Because the monthly variable costs were higher than what Evergy used to determine dispatch, the units were operated more than was economic during these periods. Notably, most of the losses occurred in months where the units were self-committed a majority of the MWh. However, there were still losses when the units were market-committed because the market's cost information was understated by Evergy.

[30] *See* Southwest Power Pool, Make-Whole Payments (Apr. 12, 2012), available at: https://www.spp.org/documents/17009/mwp%20sug%20presentation_april2012%20(no%20notes).pdf; *See also notes* 26, 27.

Q. Is it still unclear what the correct variable costs are for these units?

A. Yes. Instead of allocating each cost to variable or fixed O&M, the Company uses a simple calculation to allocate non-fuel O&M costs as 80 percent to fixed O&M and 20 percent to variable O&M. Evergy's justification for this allocation is from a study done in 2003.[31] Evergy should take a more sophisticated approach to measuring variable O&M as this is a key component of the variable costs that determine whether the units will operate.

Q. What are your conclusions regarding the coal units' variable costs?

A. First, I find that Evergy has continually understated its units' variable costs when submitting its bids into the SPP market. This led some units to operate more than they should have, producing net revenue losses during those months. Second, I find that Evergy's reported variable O&M should be calculated more accurately by tracking costs as fixed or variable as they occur—rather than assuming a simple allocation between the two categories.

Q. Does this conclude your testimony?

A. Yes.

[31] Evergy Response to Sierra Club 2.5(a).