Exhibit No. 241

MoPSC Staff – Exhibit 241
Jordan T. Hull
Rebuttal Testimony
File Nos. ER-2022-0129 & ER-2022-0130

Exhibit No.:	
Issue(s):	*MBDR*
Witness:	*Jordan Hull*
Sponsoring Party:	*MoPSC Staff*
Type of Exhibit:	*Rebuttal Testimony*
Case Nos.:	*ER-2022-0129 and ER-2022-0130*
Date Testimony Prepared:	*July 13, 2022*

MISSOURI PUBLIC SERVICE COMMISSION

INDUSTRY ANALYSIS DIVISION

ENERGY RESOURCES DEPARTMENT

REBUTTAL TESTIMONY

OF

JORDAN T. HULL

Evergy Metro, Inc. d/b/a Evergy Missouri Metro
Case No. ER-2022-0129

Evergy Missouri West, Inc. d/b/a Evergy Missouri West
Case No. ER-2022-0130

Jefferson City, Missouri
July 2022

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DIRECT TESTIMONY OF

JORDAN T. HULL

Evergy Missouri West Inc. d/b/a Evergy Missouri West
And Evergy Metro, Inc. d/b/a Evergy Missouri Metro

Case Nos. ER-2022-0129 and ER-2022-0130

REBUTTAL TESTIMONY

OF

JORDAN T. HULL

Evergy Missouri West Inc. d/b/a Evergy Missouri West
And Evergy Metro, Inc. d/b/a Evergy Missouri Metro

Case Nos. ER-2022-0129 and ER-2022-0130

Q. Please state your name and business address.

A. Jordan T. Hull, 200 Madison Street, Jefferson City, MO 65101.

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

A. I am employed by the Missouri Public Service Commission ("Commission" or "PSC") as an Associate Engineer.

Q. Please describe your educational background and work experience.

A. Please refer to the attached Schedule JTH-r1.

Q. Have you previously filed testimony before this Commission?

A. Yes, I have. Please refer to the attached Schedule JTH-r2 for a list of cases in which I have previously filed testimony.

EXECUTIVE SUMMARY

Q. What is the purpose of your rebuttal testimony?

A. The purpose of this testimony is to (1) express Staff's opinion on the proposed changes to the Evergy Missouri West, Inc. d/b/a Evergy Missouri West ("EMW") and Evergy Metro, Inc. d/b/a Evergy Missouri Metro's ("EMM") (collectively "Company") Market-Based Demand Response ("MBDR") program outlined in Company Witness Kim Winslow's direct testimony; (2) respond to the Office of Public Counsel ("OPC") witness Jordan Seaver's

recommendation for the MBDR program; and (3) respond to Devi Glick's direct testimony on behalf of Sierra Club in regards to the Company's coal fired generating units.

Q. What is Staff recommending the Commission order in this rebuttal testimony?

A. Staff recommends the Commission approve the Company's proposals to the MBDR program in an attempt to increase participation. Staff also provides an informative response to the Sierra Club for the Commission's consideration.

MARKET BASED DEMAND RESPONSE (MBDR) PROGRAM

Q. What is the MBDR program?

A. The Company was approved for this program in the prior general rate case. MBDR is offered as a separate Tariff outside of the Missouri Energy Efficiency Investment Act (MEEIA). MBDR offers qualified Business Demand Response participants an additional opportunity to reduce their electric cost through participation with the Company in the wholesale Southwest Power Pool (SPP) energy market by receiving payment for providing their load reduction during high-energy price periods. MBDR is available to program participants whose demand response (DR) resources are compliant with the SPP Tariff and SPP marketplace protocol requirements and can provide sustainable load reduction during market participation. An MBDR Participant has the option of committing its DR resources to the SPP energy market unless the Company has scheduled a potential Business Demand Response Curtailment Event for the same time period. Participation in the MBDR authorizes the Company to offer the customer's curtailment amount in the SPP market, and participant compensation is based on any SPP settlement payments less MBDR fees. All SPP registration and technical requirements,

market operating and settlement procedures, MBDR fees, etc., are detailed in the participants' individual MBDR contract.[1]

Q. How many customers are currently enrolled in the MBDR program?

A. Zero.

Q. What changes is the Company proposing to the MBDR Tariff?

A. The Company is requesting to update the tariff to better facilitate participation by reducing the minimum KW load requirement from 1 MW to 100 kW per participant. The second change is to include the potential for participation in additional SPP market opportunities by adding the "real-time" wording in front of the "day-ahead" language in the tariff. This would allow the more sophisticated customers to be able to participate in the real-time market. According to the Company, these changes are being done to drive participation.

Q. What is Staff's conclusion about the changes to the MDBR program?

A. Although Staff is not convinced that the proposed changes will increase participation, this program has no cost to non-participants. Therefore, Staff does not oppose these two changes to allow the Company to try to drive participation which, if successful, would provide Staff evidence that this program is a viable resource for the Company going forward. Staff will reevaluate the MBDR program in the Company's next general rate case to determine if participation has increased and determine if it is needed moving forward.

Q. What does OPC witness Jordan Seaver recommend for the Company's MBDR program?

[1] EMW tariff sheet P.S.C. MO. No. 1 Original Sheet No. R-63.10.1 and EMM P.S.C. MO. No. 7 Fifth Revised Sheet No. 26 – 26 C.

A. Mr. Seaver recommends the MBDR program be discontinued.

Q. What support does Mr. Seaver provide for his MBDR recommendation?

A. As mentioned earlier in this testimony, Mr. Seaver also points out that since its implementation in the Company's previous general rate case, this program has had no participants. Mr. Seaver also states that because of that, the MBDR program has not shown itself to be an effective way to achieve its stated aim.

Q. What is Staff's response to Mr. Seaver's recommendation for the MBDR program?

A. As previously mentioned, Staff does not oppose the Company's revisions to the MBDR program in an attempt to determine if the Company's proposed changes to the MBDR program tariff sheet can increase participation to make it a more viable resource for the Company going forward.

RESPONSE TO SIERRA CLUB

Q. What is a base load generating unit?

A. Base load generating units/plants are electric power sources that operate continuously to meet minimum levels of power demand on a 24/7 basis. Base load plants are usually large scale and are key components of an efficient and reliable electric grid. Base load plants are not designed to respond to peak demands or emergencies. Examples of base load units include coal and nuclear power plants.

Q. What is an intermediate generating unit?

A. Intermediate power plants/units are used during the transition between base load and peak load demand. These plants are not as difficult to ramp up as base load plants or as expensive to operate as peak load plants. Wind and solar and some natural gas power plants fall

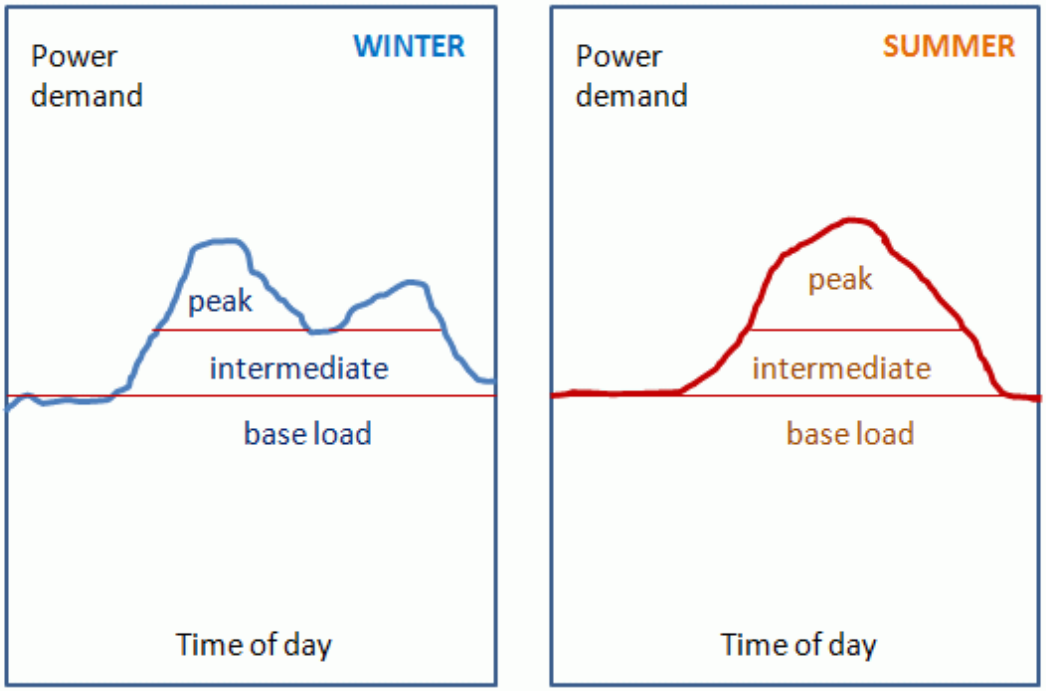
in the intermediate category. Because wind and solar resources are intermittent by nature, and the electricity they generate fluctuates with the weather and the time of day, they cannot be depended on to meet peak demand or to provide energy on a consistent basis for base load purposes.

Q. What is a peaking generating unit?

A. A peaking power plant (commonly referred to as a “Peaker plant”) is one that can switch on when additional power is needed, which will come online without much delay, and will start generating power on a moments' notice. Once a peak has passed, they are returned to standby mode for future peaks. Peaker plants are often used much less frequently over the course of a year than base and intermediate plants.

Q. Are all three types of generation units (base load, intermediate, and peaking) needed?

A. Utilities that have a diversified generation fleet, with all three types of generation, helps form a more reliable, resilient, and stable grid for its customers. Having sufficient amounts of each type increases grid reliability in the case of extreme weather and emergencies. See the below graphic to illustrate how the three are utilized on a daily basis.



Q. Did Sierra Club take the generation types into account when reviewing whether a plant's retirement date needs to be expedited?

A. Staff did not notice anywhere in Sierra Club's testimony any mention of the generation types or discussion of any base load alternatives in its discussion of the retirement of current base load units.

Q. Does retiring base load and replacing it with intermediate (wind, solar) concern Staff?

A. Yes. First, the two have very different operating characteristics. Utility companies have no control over how much output a solar or wind turbine is going to produce consistently. Solar and wind (renewables) are entirely reliant upon weather conditions to generate. This is the reason they are considered intermediate and not baseload. Second, for solar or wind to produce the same amount of megawatts (MW) that the Company's current base load (coal) units are producing, it would take an extremely large amount of solar and wind to

even try to compete with the output of their current base load units. Replacing base load with intermediate generation causes Staff concern about reliability in extreme weather and emergencies.

Q. How much wind and/or solar would it take to replace the Company's entire current coal generation?

A. The Company currently has approximately 2,700 MW of coal generation. In order to replace that all at once with wind and/or solar, the Company would need to build approximately 5,400 MW – 18,000 MW of nameplate capacity.

Q. What is nameplate capacity?

A. Nameplate capacity, also known as rated capacity, nominal capacity, installed capacity, or maximum effect, is the intended full-load sustained output of a facility, such as a power plant.

Q. When a utility company builds a solar or wind farm, will the facility get the output at the nameplate capacity?

A. No. The company will get an accredited capacity through its Regional Transmission Organization ("RTO") (in Evergy's case, SPP). This is generally based on its geographical location and other plant characteristics. This accreditation is typically between 15% and 50% of its nameplate capacity, as the energy output is not consistent every hour of everyday. This is also based on its geographical location. This is why solar and wind are not reliable alternatives to base load units at this time.

Q. How much land would be needed if you were to replace Evergy's current coal generation with solar or wind?

A. As a general rule of thumb, solar generation takes anywhere from 4-7 acres of land to produce 1 MW of electricity. This range is due to the characteristics of the plant (fixed, single axis, double axis) as well as its geographical location of the solar panels. Currently the Company has 2,712 MW of coal generation. Meaning it would take between 10,848-18,984 acres of land to produce the same amount of capacity using solar. Wind takes anywhere from 2-40 acres per MW depending on the technology and geographical location. This means it would take between approximately 5,424 and 108,480 acres of land to get the same production out of wind generation that the Company is currently getting from its coal generation.

Q. Does this conclude your rebuttal testimony?

A. Yes it does.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of Evergy Metro, Inc. d/b/a Evergy Missouri Metro's Request for Authority to Implement a General Rate Increase for Electric Service	))))	Case No. ER-2022-0129
In the Matter of Evergy Missouri West, Inc. d/b/a Evergy Missouri West's Request for Authority to Implement a General Rate Increase for Electric Service	))))	Case No. ER-2022-0130

AFFIDAVIT OF JORDAN T. HULL

STATE OF MISSOURI)
) ss.
COUNTY OF COLE)

COMES NOW JORDAN T. HULL and on his oath declares that he is of sound mind and lawful age; that he contributed to the foregoing *Rebuttal Testimony of Jordan T. Hull*; and that the same is true and correct according to his best knowledge and belief.

Further the Affiant sayeth not.

Jordan Hull

JORDAN T. HULL

JURAT

Subscribed and sworn before me, a duly constituted and authorized Notary Public, in and for the County of Cole, State of Missouri, at my office in Jefferson City, on this 6th day of July, 2022.

D. SUZIE MANKIN
Notary Public - Notary Seal
State of Missouri
Commissioned for Cole County
My Commission Expires: April 04, 2025
Commission Number: 12412070

D Suzie Mankin

Notary Public