COMMONWEALTH OF KENTUCKY

BEFORE THE
KENTUCKY PUBLIC SERVICE COMMISSION

The Electronic Application of Duke Energy Kentucky, Inc., for: 1) An Adjustment of the Electric Rates; 2) Approval of New Tariffs; 3) Approval of Accounting Practices to Establish Regulatory Assets and Liabilities; and 4) All Other Required Approvals and Relief.	)	**Case No. 2022-00372**

Direct Testimony of Justin D. Bieber

on behalf of

The Kroger Co.

March 10, 2023

Contents

DIRECT TESTIMONY OF JUSTIN D. BIEBER

I. Introduction

Q. Please state your name and business address.

A. My name is Justin Bieber. My business address is 111 E Broadway, Suite 1200, Salt Lake City, Utah, 84111.

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

A. I am a Principal at Energy Strategies, LLC. Energy Strategies is a private consulting firm specializing in economic and policy analysis applicable to energy production, transportation, and consumption.

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

A. My testimony is being sponsored by The Kroger Co. ("Kroger"). Kroger is one of the largest retail grocers in the United States and has more than 50 accounts that are served by Duke Energy Kentucky, Inc. ("Duke Energy Kentucky" or the "Company"). Combined, Kroger facilities purchase approximately 50 million kWh annually from Duke Energy Kentucky.

Q. Please describe your professional experience and qualifications.

A. My academic background is in business and engineering. I earned a Bachelor of Science in Mechanical Engineering from Duke University in 2006 and a Master of Business Administration from the University of Southern California in 2012. I am also a registered Professional Civil Engineer in the state of California.

I joined Energy Strategies in 2017, where I provide regulatory and technical support on a variety of energy issues, including regulatory services, transmission and renewable development, and financial and economic analyses. During the time

I have worked at Energy Strategies, I have filed and supported the development of testimony before various different state utility regulatory commissions.

Prior to joining Energy Strategies, I held positions at Pacific Gas and Electric Company as Manager of Transmission Project Development, ISO Relations and FERC Policy Principal, and Supervisor of Electric Generator Interconnections. During my career at Pacific Gas and Electric Company, I supported multiple facets of utility operations, and led efforts in policy, regulatory, and strategic initiatives, including supporting the development of testimony before and submittal of comments to the FERC, California ISO, and the California Public Utility Commission.

Q. Have you testified previously before this Commission?

A. Yes, I testified in the following proceedings before this Commission:

- Duke Energy Kentucky's 2017 General Rate Case, Case No. 2017-00321;
- Kentucky Utilities Company's 2018 General Rate Case, Case No. 2018-00294;
- Louisville Gas and Electric Company's 2018 General Rate Case, Case No. 2018-00295;
- Duke Energy Kentucky's 2019 General Rate Case, Case No. 2019-00271;
- Kentucky Utilities Company's 2020 General Rate Case, Case No. 2020-00349;

- Louisville Gas and Electric Company's 2020 General Rate Case, Case No. 2020-00350; and
- Big Rivers Electric Corporation and Kenergy Corporation Application to Implement a New Standby Service Tariff, Case No. 2021-00289.

Q. Have you filed testimony previously before any other state utility regulatory commissions?

A. Yes. I have testified before state utility commissions in Colorado, Indiana, Michigan, Montana, Nevada, New Mexico, North Carolina, Ohio, Oregon, Texas, Utah, Virginia, Washington, and Wisconsin.

II. Overview and Conclusions

Q. What is the purpose of your testimony in this proceeding?

A. My testimony addresses the Company's proposed generation cost of service allocation method and distribution of the proposed rate increase. I also address the Company's proposed Generation Asset True-Up Mechanism ("Rider GTM") and provide a recommendation for a multi-site aggregated demand rate pilot.

Q. Please summarize your recommendations to the Commission.

A. I recommend that the Commission approve the Company's recommended class cost of service study which utilizes a 12 coincident peak ("12 CP") methodology to allocate production costs. This method would be appropriate in this case because Duke Energy Kentucky's monthly system peaks lie within a narrow range and it would be consistent with the methodology approved in Duke Energy Kentucky's prior general rate case.

I recommend that the Commission reject the Company's proposed Rider GTM at this time. Providing safe and reliable generation service is a fundamental responsibility for a utility and the Company is entitled to an *opportunity* to recover a reasonable return on its generation assets. However, the Company's proposed rider would establish a mechanism to *guarantee* recovery of actual costs which would shift risk from the Company to its customers. Rather than relying on a new tracking mechanism to *guarantee* that the Company is able to recover its actual costs, costs related to the Company's East Bend and Woodsdale units should be considered in the context of a general rate case, such as this one, with a reasonable level of Test Year depreciation and other related costs being embedded in base rates. Further, it is unnecessary to establish a *placeholder* mechanism as this time. To the extent there are special circumstances that arise in the future that warrant a special mechanism for recovery, the issue should be considered at that time.

I also recommend that the Commission order the Company to study the feasibility of a multi-site aggregated demand commercial rate and propose a pilot program in its next rate case that would allow commercial customers to participate in a multi-site rate applicable to the portion of the demand charge associated with fixed *production* and *transmission* costs. A well-designed demand aggregation program places a customer with multiple locations on an equal footing with single-site customers, by charging participating multi-site customers for the amount of generation and transmission services that they actually use, thereby promoting equitable treatment of these customers. A multi-site aggregated demand program would also allow a multi-site customer to capture the diversity within its loads for

billing purposes, which would provide an incentive for customers to manage loads across their sites to reduce the peak demand they place on the system. Another potential benefit of conjunctive billing is that it could accelerate the adoption of electric vehicle charging stations.

III. Class Cost of Service Allocation Methodologies

Q. Please describe the cost of service studies prepared by Duke Energy Kentucky in this case.

A. According to Duke Energy Kentucky witness James Ziolkowski, the Company prepared three separate cost of service studies that use similar data but differ in the cost allocation methodologies that are used to allocate production-related costs. The three different allocation methodologies are: (1) the 12 CP method; (2) the Average and Excess (A&E) method; and (3) the Production Stacking method.[1]

The 12 CP method allocates production costs based on the class contribution to the 12 monthly system peaks. Each class is allocated costs based on the average of its load during each of the 12 monthly system peaks. This method is generally used when the monthly peaks lie within a narrow range.

The A&E method is an energy weighted method that allocates production costs based on a weighted average of a demand and an energy allocator. The demand allocator is based on the *excess* peak demand for a given rate class, where the *excess* demand is the difference between the peak demand and the average

[1] Direct Testimony of James E. Ziolkowski, p. 5.

demand. The average demand is equal to the annual energy usage for each class divided by the number of hours in a year. The A&E allocation factor for each class is determined to be the weighted average of the excess demand allocator and the average demand, or energy, allocator. The weighting for the energy allocator is typically equal to the system load factor, while the weighting for the demand allocator is equal to one minus the system load factor.

The Production Stacking method allocates baseload plant costs using an energy allocator and peaker plant costs based on peak demands. Mr. Ziolkowski explains that for Duke Energy Kentucky's cost of service study that was developed using the Production Stacking method, the net plant for the East Bend coal plant is allocated to each rate class based on annual energy usage, while the net plant for the Woodsdale facility is allocated to each rate class based on the 12 CP allocator.[2]

Q. Which class cost of service study does Mr. Ziolkowski recommend should be approved by the Commission in this proceeding?

A. Mr. Ziolkowski recommends that the Commission approve Duke Energy Kentucky's cost of service study that uses the 12 CP methodology for three reasons. First, Mr. Ziokowlski claims that the 12 CP method is a generally accepted method in the industry and was approved by the Commission in Duke Energy Kentucky's last electric base rate case. Second, he asserts that this methodology recognizes that Duke Energy Kentucky's generating facilities are in place to meet the monthly maximum demands of its customers. Finally, Mr. Ziolkowski states that there is not a compelling reason to adopt a new methodology. According to Mr.

[2] Id, p. 6.

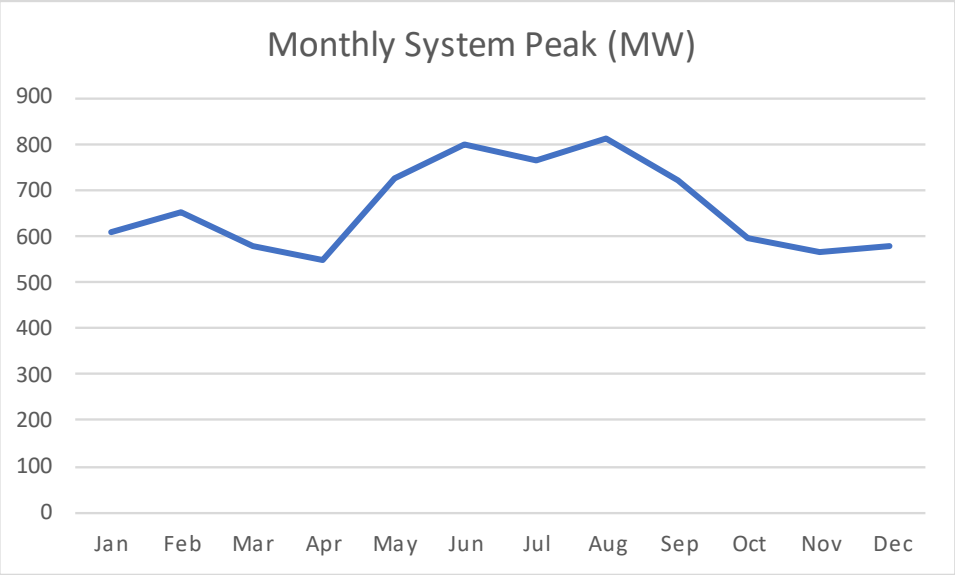
Ziolkowski, rate subsidies will generally occur among customer classes, regardless of which methodology is used, and that changing to the A&E or Production Stacking method will not change this fact.[3]

Q. What is your assessment of the proposed 12 CP production cost allocation methodology in this case?

A. I agree that it would be reasonable to utilize the 12 CP method to allocate production plant in this case. I have examined the monthly system peaks for Duke Energy Kentucky's system and the peaks generally fall within a narrow range. Figure JB-1 below provides an illustration of Duke Energy Kentucky's monthly system peaks for the twelve months ending March 31, 2022, utilized in Duke Energy Kentucky's cost of service study. Given the Commission's approval of the 12 CP method in Duke Energy Kentucky's prior general rate case, and the nature of Duke Energy Kentucky's system peaks, and the fact a rate subsidies will reasonably be required regardless of which generation allocation methodology is used, I recommend that the Commission approve Duke Energy Kentucky's proposed cost of service study utilizing a 12 CP production cost allocation methodology in this case.

[3] Id, pp. 6-7.

Figure JB-1
Duke Energy Kentucky Monthly System Peaks[4]



Q. What is your assessment of the proposed A&E production cost allocation methodology?

A. I believe that the A&E production cost allocation method is a robust methodology that could also be used to allocate Duke Energy Kentucky's production plant in this case. The A&E method gives consideration to Duke Energy Kentucky's energy loads by allocating a considerable portion of production plant based on energy usage, but also avoids some of the analytical shortfalls associated with some other energy weighting methods. While I am not recommending that the Commission replace the 12 CP method with the A&E method in this case, to the extent that the Commission determines that a change to the production cost allocation methodology is warranted, then I recommend that the Commission consider the A&E methodology.

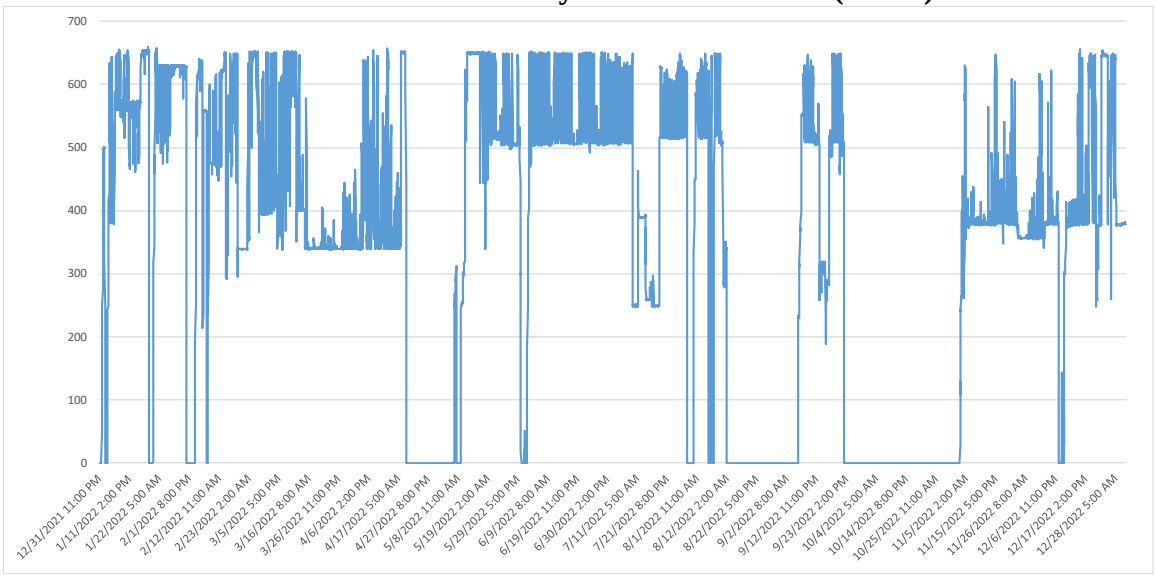
[4] Duke Energy Kentucky Work Paper FR-16(7)(v) p. 10, Summary of Adjusted Rate Group Coincident and Non-Coincident kW Demands.

Q. What is your assessment of the proposed Production Stacking cost allocation methodology in this case?

A. I recommend against the use of the Production Stacking methodology in this case. Specifically, I do not believe it is appropriate to allocate the East Bend production plant based entirely on energy usage.

Based on Duke Energy Kentucky's FERC Form 1 data, the capacity factor for East Bend was just 47.0% in 2021.[5] While this low capacity factor was due in part to plant outages, Figure JB-2 below illustrates that the 2022 hourly generation for East Bend varies considerably on a daily basis.

Figure JB-2
East Bend 2022 Hourly Gross Generation (MWh)



Source: S&P Global Market Intelligence; SNL Energy Data

I do not believe that the Production Stacking method, which would allocate 100% of the East Bend costs based on energy usage, is appropriate in this case. The East Bend plant is dispatched in a manner that is very different than a baseload

[5] FR 16(7)(k) Attachment – FERC Form 1 (2021), p. 179. Net Generation = 2,542,673,000 kWh ÷ (Net Peak Demand 618 MW * 1,000 kW/MW * 8760 Hours) = 47.0%.

plant. Its capacity factor is only 47.0% and there is significant variation in the daily operations and generation output of the plant. Further, this proposed allocation method would not recognize the fact that East Bend provides a significant capacity contribution to help Duke Energy Kentucky meet its customer load obligations.

IV. Distribution of Proposed Revenue Increase

Q. How does Duke Energy Kentucky allocate its proposed revenues among rate schedules?

A. According to Mr. Ziolkowski, the cost of service study revealed that there are significant differences among the rate classes when comparing the actual return earned by each rate class to the overall system rate of return being requested in this case. This would require much greater increases for some rate classes, in terms of the percentage increase, than other classes in order to match class revenue responsibility with the underlying cost causation. In order to mitigate the rate shock that might occur from completely eliminating the interclass subsidies, Duke Energy Kentucky is proposing a two-step process to distribute the revenue allocation between rate classes. The first step eliminates 5% of the current subsidy/excess revenues between rate classes. The second step allocates Duke Energy Kentucky's proposed rate increase to customer classes based on the original cost depreciated rate base.[6]

[6] Id, pp. 28-29.

Q. What is your assessment of the Company's proposed methodology to distribute the proposed revenue increase?

A. The Company's proposed methodology will make a small reduction to the existing inter-class subsidies, however, substantial subsidies between rate schedules will persist. Table JB-3 below summarizes the rate subsidies that would persist based on the Company's proposed revenue requirement, cost of service, and revenue distribution methodology. It is important to note that these subsidy amounts can change if the Commission approves a different revenue requirement.

Table JB-3
Rate Subsidies at Duke Energy Kentucky's Revenue Requirement
At Duke Energy Kentucky's Cost of Service and Revenue Distribution

Rate Class	12 CP Cost of Service Based Rate Increase	Proposed Rate Increase	Subsidy Paid/(Received)
Rate RS	$ 56,560,430	$ 37,599,012	$ (18,961,418)
Rate DS	6,498,728	19,212,801	$ 12,714,073
Rate GS-FL	(119,774)	88,265	$ 208,039
Rate EH	466,297	370,851	$ (95,446)
Rate SP	(5,213)	3,009	$ 8,222
Rate DT - Secondary	6,114,310	8,753,286	$ 2,638,976
Rate DT-Primary	5,660,260	6,807,350	$ 1,147,090
Rate DP	(23,337)	172,325	$ 195,662
Rate TT	(52,142)	1,560,099	$ 1,612,241
Lighting	995,127	654,219	$ (340,908)
Other - Water Pumping	(917,776)	(44,307)	$ 873,469
Total	$ 75,176,910	$ 75,176,910	$ (0)

V. Generation Asset True-Up Mechanism (Rider GTM)

Q. Please describe Duke Energy Kentucky's proposed Rider GTM.

A. Company witness Sarah Lawler explains that the Company is requesting approval of a Generation Asset True-up Mechanism placeholder rider, Rider GTM,

to reconcile any remaining undepreciated plant balances following future retirements of the East Bend or Woodsdale generating assets. Upon retirement of either East Bend, Woodsdale, or both, the Company is requesting the authority to establish a regulatory asset to record any remaining book value associated with these assets. According to Ms. Lawler, the Company proposes to calculate a return on and of the remaining net book value of the generating assets at the time of retirement. The Company may also propose to recover necessary O&M expenses. Rider GTM would provide either a charge or credit to electric customers to reconcile the balance, amortized over ten years.[7]

Q. How does the Company propose to implement Rider GTM?

A. Ms. Lawler explains that if Rider GTM is approved in this proceeding, the Company would file a separate application in advance of the retirement date of either East Bend or Woodsdale, or both, and the application would be subject to Commission determination of reasonableness.[8]

Q. What justification does Ms. Lawler provide for the Company's Rider GTM proposal?

A. According to Ms. Lawler, the Company and its experts can estimate depreciation rates so that the net book value (less salvage) is as close to zero as possible at the end of the unit's service lives. However, it is impossible to estimate this exactly, and therefore, there will be some remaining balance, either positive or negative, to be trued-up in customer rates. Creating Rider GTM now will provide

[7] Direct Testimony of Sarah E. Lawler, pp. 17-18.
[8] *Id.* p. 19.

a mechanism to ensure that customers pay no more and no less than the actual costs incurred by the Company for these assets.[9]

Q. What is your assessment of the Company's Rider GTM proposal?

A. I recommend that the Commission reject the Company's proposed Rider GTM *placeholder* at this time. Providing safe and reliable generation service is a fundamental responsibility for a utility. While the Company is entitled to an *opportunity* to recover a reasonable return on its generation assets, the proposed rider would establish a mechanism to *guarantee* cost recovery and shift risk from the Company to its customers. Rather than relying on a new tracking mechanism to *guarantee* that the Company is able to recover its actual costs, costs related to the Company's East Bend and Woodsdale units should be considered in the context of a general rate case, such as this one, with a reasonable level of Test Year depreciation and other related costs being embedded in base rates. Further, it is unnecessary to establish a *placeholder* mechanism as this time. To the extent there are special circumstances that arise in the future that warrant a special mechanism for recovery, the issue should be considered at that time.

VI. Multi-site Aggregation Commercial Rate

Q. Please explain multi-site rate aggregation.

A. A multi-site commercial rate aggregation program would allow eligible customers with multiple service locations to aggregate their demands for purposes of production and transmission billing. For a multi-site aggregation program, the

[9] *Id.* p. 17.

billing demand is measured as the highest hourly demand occurring simultaneously across each of a customer's participating locations, thereby measuring billing demand for the totality of the customer's participating sites as if it were a single load for billing purposes. This is described as conjunctive demand billing and should only apply to a customer's generation and transmission service. The distribution portion of the bill should be calculated using demand billing determinants established separately at each location.

Q. Why should the Company study a multi-site commercial rate aggregation program?

A. This type of aggregation properly allows a multi-site customer to capture the diversity within its loads for billing purposes, specifically in the determination of billing demand. By treating the multiple loads of a single customer as a single entity for the purpose of measuring the amount of power and transmission service provided to the customer, the customer's load is treated in a manner that is comparable to the treatment of a single-site customer with the same aggregate load shape. It is also comparable to the way the customer's load would be viewed in a competitive market.

Q. Why is it appropriate to apply a conjunctive demand rate to fixed generation and transmission costs as distinct from distribution costs?

A. Each facility owned by a multi-site customer causes unique distribution costs and therefore it is appropriate to recover those costs based on the peak demand of each individual facility. But that is not the case for fixed production and transmission costs. At the power supply and transmission level, it makes no

difference whether 5 MW in a given hour is going to a single-site customer with a 5 MW load or to a multi-site customer with five facilities taking 1 MW each. The cost to produce and transmit the 5 MW in that hour is not materially different.

For a multi-site customer, it would not be unusual for each of its sites to be peaking at a different hour each month. Under the Company's current rate structures, this means that the customer's cumulative billing demand for fixed production costs would exceed the customer's actual aggregated peak demand measured on an hour-by-hour basis (as if it were a single-site customer). In other words, under the current rate structure, the multi-site customer might be billed for 5.5 MW of fixed production demand based on the sum of the individual peaks of each of its sites (occurring at different hours), whereas in fact, the customer's actual aggregate demand for fixed production demand in any hour might be no greater than 5 MW. A conjunctive demand rate can correct for this upward bias in the billing demand that would otherwise be charged to a multi-site customer by aggregating the customer's billing demands for peak demand measurement purposes. With the proper metering in place, this correction simply charges multi-site customers for the fixed production service that they actually use and places them on an equal footing with single-site customers. Under a well-designed conjunctive demand rate, a multi-site customer that has the same aggregate demand for power supply as a single-site customer pays exactly the same rate and dollar amount for power supply as that single-site customer.

Q. Is Duke Energy Kentucky proposing any rate design changes in this rate case that would facilitate a multi-site customer rate?

A. Yes. Duke Energy Kentucky witness Bruce Sailers explains that the Company proposes to create a separate demand charge for recovery of the cost of service study's distribution demand revenue component. According to Mr. Sailers, this modification to the Rate DT rate design recognizes the off-peak structure of the rate schedule and the potential in future years for customers to adopt electric vehicle off peak charging behavior.[10] Unbundling the distribution rates for Rate DT in this manner would facilitate a multi-site rate because it separates the recovery of production and transmission costs, which would be subject to aggregated demand billing, from the distribution costs which would not be billed based on aggregated demands.

Q. Are there any system benefits that could result from a well-designed multi-site customer pilot program?

A. Yes. A multi-site aggregated demand program would allow a multi-site customer to capture the diversity within its loads for billing purposes, which would provide an incentive for customers to manage loads across their sites to reduce the peak demand they place on the system. Another potential benefit of conjunctive billing is that it could accelerate the adoption of electric vehicle charging stations. Under conjunctive billing, multiple electric vehicle charging stations that are operated by a common owner could benefit from the measurement of billing demand for generation based on the conjunctive, or aggregate, demand of multiple

[10] Direct Testimony of Bruce L. Sailers, p. 10.

facilities, rather than a station-by-station method which would not recognize the diversity benefit of the aggregate loads that they place on the system.

Q. With a multi-site customer rate, would a commercial customer be allowed to aggregate smaller loads onto a different rate schedule designed for larger loads?

A. No, I am not proposing an aggregation program that would allow smaller aggregated loads to qualify for a different rate schedule. I am simply proposing to better measure the aggregated customer's demand for generation and transmission billing purposes. For example, a customer with five separate sites, each with a maximum billing demand of 100 kW that is currently being billed on Rate DS would not be eligible to be billed at Rate DT rates designed for customers with loads over 500 kW.

Q. Are you aware of any well-designed multi-site customer rates?

A. Yes. Consumers Energy in Michigan has such a rate, called the Aggregate Peak Demand Service Provision.[11] This program is available to any customer with 7 accounts or more who desires to aggregate its On-Peak Billing Demands for power supply billing purposes. To be eligible, each account must have a minimum average On-Peak Billing Demand of 250 kW. The aggregated accounts are billed under the same rate schedule and service provisions that apply to the individual sites, with the aggregate maximum capacity to all customers limited to 200,000 kW.

[11] See Sheet D-63.00 at https://www.michigan.gov/mpsc/-/media/Project/Websites/mpsc/consumer/rate-books/electric/consumers/Consumers_14_current.pdf?rev=37a47de06414494496e3fa0229ebc7c9&hash=42E956812826C0A14F71EE3D6EF97406#page=185.

Puget Sound Energy also has a pilot program, that was recently expanded, that allows eligible customers with multiple service locations to aggregate their demands for purposes of power and transmission billing.[12]

Q. What is your recommendation regarding a multi-site commercial aggregation rate?

A. I recommend that the Commission order Duke Energy Kentucky to study and propose a conjunctive billing demand pilot program in its next general rate case.

Q. Does this conclude your direct testimony?

A. Yes, it does.

[12] See sheet 26-B at https://www.pse.com/-/media/Project/PSE/Portal/Rate-documents/Electric/elec_sch_026.pdf?sc_lang=en.

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AFFIDAVIT OF JUSTIN BIEBER

STATE OF UTAH)
COUNTY OF SALT LAKE)

Justin D. Bieber, being first duly sworn, deposes and states that:

1. He is a Principal with Energy Strategies, L.L.C., in Salt Lake City, Utah;

2. He is the witness who sponsors the accompanying testimony entitled "Direct Testimony of Justin Bieber;"

3. Said testimony and exhibits were prepared by him and under his direction and supervision;

4. If inquiries were made as to the facts in said testimony and exhibits he would respond as therein set forth; and

5. The aforesaid testimony is true and correct to the best of his knowledge, information and belief.

Justin Bieber

Subscribed and sworn to or affirmed before me this 8th day of March, 2023, by Justin Bieber.

Notary Public