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. 2024-00354**

Direct Testimony of Justin Bieber

on behalf of

The Kroger Co.

March 5, 2025

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 approximately 46 accounts that are served by Duke Energy Kentucky, Inc. ("Duke Energy Kentucky" or the "Company"). Combined, Kroger facilities purchase more than 44 million kWh annually from Duke Energy Kentucky.

Q. Please describe your qualifications and professional experience.

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. While at Energy

Strategies, I have filed and supported the development of testimony before various 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 submitting comments to the FERC, California ISO, and the California Public Utility Commission.

Q. Have you previously testified before this Commission?

A. Yes, I have 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;
- Big Rivers Electric Corporation and Kenergy Corporation Application to Implement a New Standby Service Tariff, Case No. 2021-00289; and
- Duke Energy Kentucky's 2022 General Rate Case, Case No. 2022-00372.

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

A. Yes. I have testified in more than 60 regulatory proceedings on the subjects of utility rates and regulatory policy before state utility commissions in Colorado, Indiana, Michigan, Montana, Nevada, New Mexico, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, 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 following topics:

- The Company's class cost of service study;
- The Company's distribution of the proposed rate increase; and
- The Company's proposed rate design for Rate DS – Service at Secondary Distribution Voltage.

Q. Please summarize your recommendations to the Commission.

A. I provide the following recommendations in my testimony:

- 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-related costs. This method would be appropriate in this case because Duke Energy Kentucky's monthly system peaks, which *cause* the need for generation capacity, lie within a narrow range throughout the year. It would also be consistent with the methodology approved by this Commission in Duke Energy Kentucky's prior general rate cases.
- I also recommend modifications to Duke Energy Kentucky's proposed rate design for Rate DS that would improve the alignment between rates and the underlying cost causation. Duke Energy Kentucky's proposed rate design for the DS rate schedule understates demand-related charges while overstating the energy charges relative to the underlying cost components. My recommended modifications to the rate design will make progress towards improving the alignment between charges and the underlying costs while employing the principle of gradualism.

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 E. Ziolkowski, the Company prepared three separate class cost of service studies that use similar data but differ in the cost allocation methodologies that are used to allocate the demand component of 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 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

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

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 alternative cost of service study that was developed using the Production Stacking method, the net plant for the East Bend coal plant was allocated to each rate class based on annual energy usage, while the net plant for the Woodsdale facility was 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?

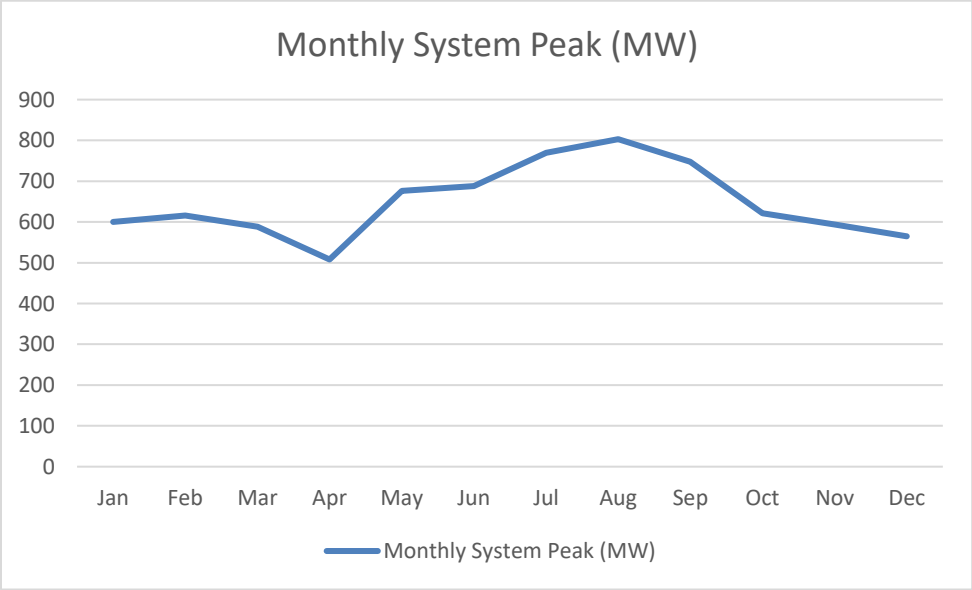
A. Mr. Ziolkowski recommends that the Commission approve Duke Energy Kentucky's cost of service study, which uses the 12 CP methodology to allocate production plant costs because the Company believes that the 12 CP methodology is an appropriate means to align capacity costs with the customer classes that are imposing those costs. Mr. Ziowkowski also explains that the cost-based increase for the residential rate increase using the 12 CP allocation methodology is 16.8%, which is in the middle of the resulting cost-based rate increases for the residential class that would result from the A&E and Production Stacking cost allocation methods.[3]

[2] *Id.* p. 6.
[3] *Id*. p. 9. The cost-based rate increase for the Residential class under the A&E method would be 18.8%. The cost-based rate increase for the Residential class under the Production Stacking method would be 15.8%.

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 May 31, 2024, 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, 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.

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



[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 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 it is appropriate to utilize a production cost allocation methodology that takes into account energy utilization during non-peak hours, then I recommend that the Commission consider the A&E methodology.

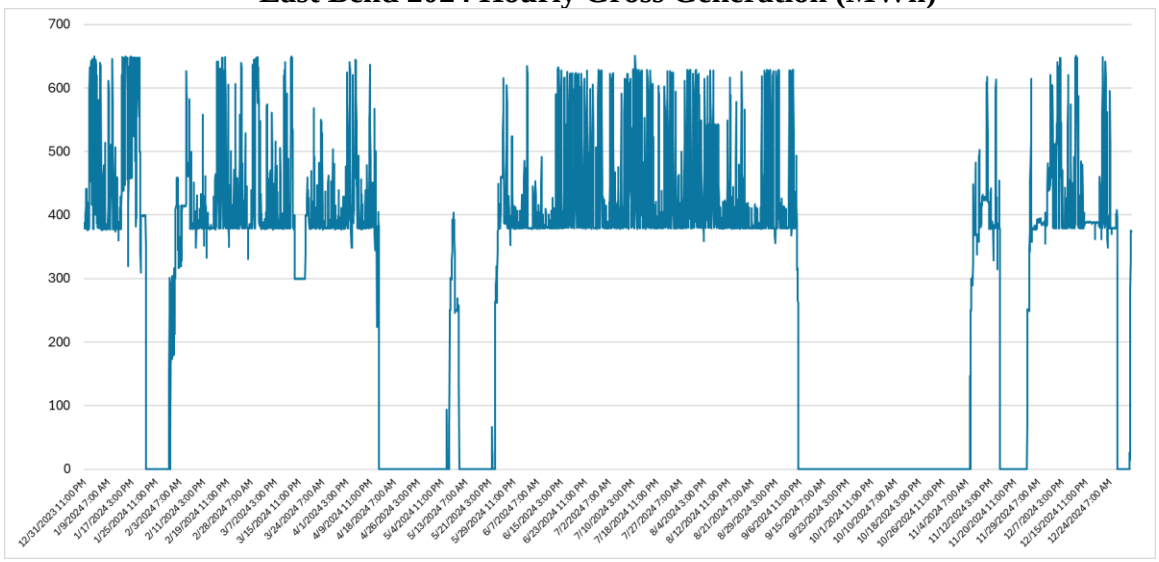
Q. What is your assessment of the proposed Production Stacking cost allocation methodology in this case?

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 41.3% in 2023.[5] In addition to operating at a relatively low capacity factor, as demonstrated in Figure JB-2 below, the 2024 hourly generation for East Bend varies considerably on a daily basis.

[5] FR 16(7)(k) Attachment – FERC Form 1 (2023), p. 180. Net Generation = 2,211,385,000 kWh ÷ (Net Peak Demand 611 MW * 1,000 kW/MW * 8760 Hours) = 41.3%.

Figure JB-2
East Bend 2024 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 plant. Its capacity factor is only 41.3% 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 15% of the current subsidy/excess revenues between rate classes. The second step allocates the remainder of Duke Energy Kentucky's proposed rate increase to customer classes based on the cost of service original cost depreciated rate base.[6]

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. While subsidies can be used to moderate the pace of movement toward cost-of-service alignment in the interest of gradualism, it is also important to adopt a revenue allocation methodology that progressively moves classes closer to their actual costs.

Table JB-1 below summarizes the rate subsidies that would result based on the Company's proposed revenue requirement, cost of service, and revenue distribution methodology. It is important to note that these subsidy amounts would differ if the Commission approves a different revenue requirement.

[6] Direct Testimony of James E. Ziolkowski, pp. 31-32.

Table JB-1
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	$36,124,734	$33,286,252	($2,838,482)
Rate DS	$15,745,352	$19,098,666	$3,353,314
Rate GS-FL	($138,507)	$49,803	$188,310
Rate EH	$751,587	$444,793	($306,794)
Rate SP	($15,463)	$1,894	$17,357
Rate DT - Secondary	$7,729,665	$8,180,241	$450,576
Rate DT - Primary	$8,839,794	$6,991,456	($1,848,338)
Rate DP	($153,120)	$53,613	$206,733
Rate TT	$509,261	$1,287,004	$777,743
Lighting	$76,662	$346,844	$270,182
Other - Water Pumping	$514,833	$244,232	($270,601)
Total	$69,984,798	$69,984,798	$0

V. Rate DS Rate Design

Q. Please describe Rate DS.

A. Rate DS is the Service at Secondary Distribution Voltage rate schedule. Rate DS is applicable to customers with an average monthly demand less than 500 kW. The rate components for Rate DS include a customer charge, a demand charge, and energy charges. For the Rate DS energy charges, Duke Energy Kentucky utilizes load factor blocking, with the Block 1 rate applied to the first 6,000 kWh, the Block 2 rate applied to the next 300 kWh per kW, and Block 3 rate applied to all additional kWh.

Q. How does Duke Energy Kentucky propose to allocate the Rate DS revenue requirement to the various rate components?

A. Duke Energy Kentucky proposes to maintain the current customer charges and recover the proposed increase for Rate DS through an approximately equal percentage increase to each of the demand and energy rate components. Duke Energy Kentucky's proposed DS rates are summarized in Table JB-2 below.

Table JB-2
Duke Energy Kentucky Proposed Rate DS Charges
At Duke Energy Kentucky Proposed Revenue Requirement

Description	Units	Current Rate	Proposed Rate	Increase %
Customer Charge				
Single Phase Service	month	$15.00	$15.00	0.0%
Three Phase Service	month	$30.00	$30.00	0.0%
Demand Charge				
First 15 kilowatts	kW	$0.00	$0.00	0.0%
Additional kilowatts	kW	$10.68	$12.36	15.7%
Energy Charge				
[Block 1] First 6,000 kWh	kWh	$0.114788	$0.132874	15.8%
[Block 2] Next 300 kWh/kW	kWh	$0.074619	$0.086376	15.8%
[Block 3] Additional kWh	kWh	$0.063056	$0.072989	15.8%

Q. Duke Energy Kentucky utilizes a Block 1 energy rate that is significantly larger than the Block 2 and Block 3 energy rates. Can you please elaborate regarding this premium incorporated in the Block 1 energy charge?

A. Rate DS does not apply a demand charge to the first 15 kW of a customer's demand usage. However, the proposed Block 1 energy rate of $0.132874 per kWh, which applies to a customer's first 6,000 kWh of monthly usage, is substantially higher than the Block 2 or Block 3 energy rate. Specifically, the Block 1 rate is $0.059885 per kWh greater than the Block 3 rate. This premium recovers revenues associated with the first 15 kW of demand for which no demand charge is applied.

Therefore, the additional revenue recovered through this Block 1 *premium* can be considered demand-related revenue.

Q. Duke Energy Kentucky utilizes load factor blocking for its Block 2 energy rate design for the DS rate schedule. Please explain the purpose of this form of rate design.

A. The load factor blocking rate design used by Duke Energy Kentucky for the DS rate schedule is also known as an "hours-use" rate design or a Wright rate design, named after its originator. This type of charge is a somewhat complex rate design element that is not universally used by all utilities or even across all of Duke Energy Kentucky's demand-billed rate schedules.

An hours-use charge is a type of energy charge that recovers both demand-related and energy-related costs within the same rate. This is achieved by setting the hours-use energy charge at a level greater than the base energy charge. The portion of the hours-use charge that exceeds the base energy charge serves a function similar to a demand charge and can be considered a mechanism for recovering demand-related costs. If properly structured, the remainder of the charge—equivalent to the base energy charge—should recover only energy-related costs.

The hours-use rate design is demonstrated through the load factor blocking used in Duke Energy Kentucky's proposed DS rate design. As shown in Table JB-2, the proposed Block 3 rate is $0.072989 per kWh and applies to monthly usage exceeding the combined usage of Block 1 and Block 2. This base energy charge

follows a straightforward per-kWh rate structure and ideally should represent the purely energy-related component of the rate.

The hours-use charge is reflected in the Block 2 rate of $0.086376 per kWh, which applies to the next 300 kWh per kW, above the first 6,000 kWh of monthly usage. This means the Block 2 charge is not solely based on energy consumption but rather on energy usage relative to the customer's billing demand, making it a method for recovering demand-related costs. In other words, it is a premium rate applied to energy usage associated with lower-load-factor consumption.

The differential between the Block 2 and Block 3 rates is $0.013387 per kWh. Similar to the Block 1 energy rate, revenues generated from this 1.3387 cents per kWh Block 2 differential, or *premium*, can also be considered demand-related revenue.

Q. How does Duke Energy Kentucky's proposed rate design for the DS rate schedule compare to the underlying cost components?

A. Duke Energy Kentucky's proposed rate design for the DS rate schedule under-recovers demand-related charges while over-recovering energy-related charges relative to the underlying cost of service.

As discussed above, Duke Energy Kentucky incorporates a premium in its Block 1 and Block 2 energy rates. The revenues recovered through these rate differential premiums can be considered demand-related revenues. To take a conservative approach in my analysis, I have classified revenues recovered through the demand charge, as well as the rate differential premiums between Block 1 and Block 3, and between Block 2 and Block 3, as demand-related revenues.

Specifically, energy-related revenues are calculated as the sum of the total Block 1, Block 2, and Block 3 kWh billing determinants multiplied by the Block 3 per-kWh energy rate. Demand-related revenues consist of revenues from the demand charge plus revenues from the rate differential premiums.

Table JB-3 below summarizes the DS rate schedule charges relative to costs by classification for Duke Energy Kentucky's proposed rate design. A more detailed classification of revenues for Duke Energy Kentucky's proposed DS rate design is provided in Attachment JB-1.

Table JB-3
Duke Energy Kentucky Rate DS Classification of Revenues Relative to Cost
At Duke Energy Kentucky Proposed Revenue Requirement

Classification	Cost of Service	Revenue	Revenue/ Cost of Service
Customer	$2,844,515	$3,464,841	121.8%
Demand	$75,281,728	$60,721,884	80.7%
Energy	$66,572,665	$83,920,419	126.1%
Total	**$144,698,908**	**$148,107,143**	**102.4%**

As can be seen in the table above, even after considering the demand-related revenues from both the demand charge and the Block 1 and Block 2 rate differentials, Duke Energy Kentucky's proposed rate design recovers just 80.7% of demand-related costs through demand-related charges while recovering 126.1% of energy-related costs through energy-related charges, based on the Company's cost of service study.

Q. From a customer's perspective, why should it matter if Duke Energy Kentucky proposes a demand charge that does not fully recover its demand-related costs?

A. If a utility proposes a demand charge that is below the cost of demand, it is going to seek to recover its class revenue requirement by over-recovering its costs in another area, most typically through levying an energy charge that is above unit energy costs, which is the case with Duke Energy Kentucky's proposal. For a given tariff class such as DS, when demand charges are set below cost, and energy charges are set above cost, those customers with relatively higher load factors are required to subsidize the lower load factor customers within the class.

Q. How do you define "higher load factor customers"?

A. For purposes of this discussion, I use this term to refer to customers whose load factors are greater than the average for the rate schedule.

Q. Why is it important for rate design to be representative of underlying cost causation?

A. Aligning rate design with underlying cost causation improves efficiency because it sends proper price signals. For example, setting a demand charge below the cost of demand understates the economic cost of demand-related assets, which in turn distorts consumption decisions, and calls forth a greater level of investment in fixed assets than is economically desirable.

Further, aligning rate design with underlying cost causation is important for ensuring equity among customers, because properly aligning charges with costs minimizes cross-subsidies among customers. As I stated above, if demand costs are

understated in utility rates, the costs are made up elsewhere – typically in energy rates. When this happens, higher load factor customers (who use fixed assets relatively efficiently through relatively constant energy usage) are forced to pay the demand-related costs of lower load factor customers. This amounts to a cross-subsidy that is fundamentally inequitable.

Q. What is your recommendation with respect to the DS rate design?

A. Ideally, demand-related charges, energy-related charges, and customer charges should align with their respective underlying cost components. However, in some cases, a full transition to cost-based rates in a single step should be moderated to mitigate potential intra-class rate impacts and adhere to the well-accepted ratemaking principle of gradualism.

Therefore, I propose moderate adjustments to the DS rate design that move toward aligning rates with underlying costs while also minimizing intra-class rate impacts that could result from a more significant shift to cost-based rates at this time.

Specifically, I recommend increasing the Company's proposed demand charge to $15.85 per kW, with a corresponding revenue-neutral decrease to the Block 1, Block 2, and Block 3 energy charges. I also recommend maintaining the Company's proposed differential, or premium, between the Block 1, Block 2, and Block 3 energy rates. Additionally, I am not recommending any changes to Duke Energy Kentucky's proposed DS customer charges at this time.

My recommended rate design, based on the Company's proposed revenue requirement, is summarized in Table JB-4 below. The revenue verification for this rate design is presented in Attachment JB-2.

Table JB-4
Duke Energy Kentucky and Kroger Proposed Rate DS Charges
At Duke Energy Kentucky Proposed Revenue Requirement

Description	Units	Duke Proposed Rate	Kroger Proposed Rate
Customer Charge			
Single Phase Service	month	$15.00	$15.00
Three Phase Service	month	$30.00	$30.00
Demand Charge			
First 15 kilowatts	kW	$0.00	$0.00
Additional kilowatts	kW	$12.36	$15.85
Energy Charge			
[Block 1] First 6,000 kWh	kWh	$0.132874	$0.124492
[Block 2] Next 300 kWh/kW	kWh	$0.086376	$0.077994
[Block 3] Additional kWh	kWh	$0.072989	$0.064607

Q. How does your recommended rate design improve the alignment between charges and the underlying cost components?

A. The alignment between charges and costs that would result from my recommended rate design is summarized in Table JB-5 below.

Table JB-5
Kroger Rate DS Classification of Revenues Relative to Cost
At Duke Energy Kentucky Proposed Revenue Requirement

Classification	Cost of Service	Revenue	Revenue/ Cost of Service
Customer	$2,844,515	$3,464,841	121.8%
Demand	$75,281,728	$69,919,704	92.9%
Energy	$66,572,665	$74,722,599	112.2%
Total	**$144,698,908**	**$148,107,144**	**102.4%**

Table JB-6 compares the alignment between rates and the underlying cost of service for the Company's proposed rate design and my recommended rate design.

Table JB-6
Duke Energy Kentucky Rate DS Classification of Revenues Relative to Cost Compared to Kroger Rate DS Classification of Revenues Relative to Cost At Duke Energy Kentucky Proposed Revenue Requirement

Classification	Duke Revenue/ Cost of Service	Kroger Revenue/ Cost of Service
Customer	121.8%	121.8%
Demand	80.7%	92.9%
Energy	126.1%	112.2%
Total	**102.4%**	**102.4%**

As can be seen in Table JB-5 and Table JB-6 above, my recommended rate design improves the alignment between demand and energy charges with the underlying cost causation by increasing the demand related revenue and reducing the energy related revenue recovery by a corresponding revenue neutral amount. While my recommended changes do not achieve fully cost-based rates, it represents a step toward better alignment between rates and the underlying costs for the DS rate schedule. Specifically, my proposed rate design would recover 92.9% of demand-related costs through demand-related charges while still recovering 112.2% of energy-related costs through energy-related charges. This approach is intentional, as it helps mitigate intra-class rate impacts that could arise from a more significant shift toward cost-based rates at this time.

Q. Have you prepared a bill impact analysis of your recommended changes to DS rate design?

A. Yes. My bill impact analysis is presented in Attachment JB-3 and illustrates the total bill impacts to customers that would result from my recommended DS rate design at Duke Energy Kentucky's proposed revenue requirement. The bill impacts range between 6.9% to 20.7%, relative to Duke Energy Kentucky's proposed 14.1% for the DS rate schedule.

Q. **Your proposed rate design results in a smaller rate impact on higher-load-factor customers than lower-load-factor customers. Is this a reasonable result?**

A. Yes, it is a reasonable result. My proposed rate design reflects a cost-based difference while providing gradual movements towards cost-based rates. Duke Energy Kentucky's proposed rate design contains a misalignment between the costs and charges based on its own cost of service study, which results in a considerable *intra*-class subsidy from higher-load-factor customers to lower-load-factor customers. As I stated above, I am not proposing full movement towards cost-based rates in this case. Instead, my proposed rate design makes *gradual* movement towards aligning rates with cost causation and reduces, but does not eliminate, the existing *intra*-class subsidy. By gradually reducing this *intra*-class subsidy, lower-load-factor customers will experience slightly greater rate increases than higher-load-factor customers. This is a reasonable result because it strikes a balance between two important rate-making principles – improving the alignment between rates and the underlying cost components while employing gradualism.

Q. Will your recommended rate design modifications have an impact on any other customer classes besides Rate DS?

A. No. My recommended rate design modifications would be revenue neutral and would only impact the rates for DS customers. It would not have any impact on any other rate schedules.

Q. Your proposed rate design was calculated using Duke Energy Kentucky's proposed revenue requirement. How should your proposed rate design be implemented if the Commission adopts a revenue requirement that is different than Duke Energy Kentucky's request?

A. To the extent that the Commission approves a revenue target for the DS rate schedule that is different than that proposed by Duke Energy Kentucky, I recommend that each of my recommended Rate DS energy and demand charges, as presented in Table JB-4 above, should be reduced pro rata to recover the final approved revenue requirement.

Q. Does this conclude your direct testimony?

A. Yes, it does.

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AFFIDAVIT OF JUSTIN BIEBER

STATE OF UTAH)
)
COUNTY OF SALT LAKE)

Justin 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 was prepared by him and under his direction and supervision;

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

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

Justin Bieber

Subscribed and sworn to or affirmed before me this 4th day of March, 2025, by Justin Bieber.

Notary Public

KIMBERLIE A IGNJATOVIC
Notary Public State of Utah
My Commission Expires on:
April 18, 2027
Comm. Number: 730305

ATTACHMENTS

Duke Energy Kentucky Proposed Rate DS
Classification of Revenues by Rate Component

Description	Units	Customer Bills/ Sales	Proposed Rate	Proposed Revenue
Customer Charge				
Load Management Rider	Bills	1,545	$5.00	$7,725
Single Phase	Bills	79,682	$15.00	$1,195,230
Three Phase	Bills	75,323	$30.00	$2,259,690
Demand Charge				
First 15 kW	kW	1,355,176	$0.00	$0
Additional kW	kW	2,641,511	$12.36	$32,649,076
Energy Charge				
First 6,000 kWh	kWh	348,050,244	$0.132874	$46,246,828
Next 300 kWh/kW	kWh	519,725,648	$0.086376	$44,891,823
Additional kWh	kWh	228,571,887	$0.072989	$16,683,233
Non-Church Cap Rate	kWh	928,876	$0.355714	$330,414
Church Cap Rate	kWh	66,268	$0.218386	$14,472
Riders				
Fuel Adjustment Clause (FAC)	kWh		$0.003487	$3,826,668
Rate DS RTP				
Customer Charge	Bills	12	$183.00	$2,196
Total Energy				($212)
Total Schedule				**$148,107,144**

Duke Energy Kentucky Proposed Rate DS
Classification of Revenues by Rate Component

Classification					
Customer					
Load Management Rider	Bills	1,545	$5.00	$7,725	
Single Phase	Bills	79,682	$15.00	$1,195,230	
Three Phase	Bills	75,323	$30.00	$2,259,690	
Rate DS RTP - Customer Charge	Bills	12	$183.00	$2,196	
Customer Total				**$3,464,841**	
Demand					
First 15 kW	kW	1,355,176	$0.00	$0	
Additional kW	kW	2,641,511	$12.36	$32,649,076	
First 6,000 kWh	kWh	348,050,244	$0.059885	$20,842,989	Per kWh Premium Considered Demand-Related
Next 300 kWh/kW	kWh	519,725,648	$0.013387	$6,957,567	Hours Use Premium Considered Demand-Related
Non-Church Cap Rate	kWh	928,876	$0.282725	$262,616	Per kWh Premium Considered Demand-Related
Church Cap Rate	kWh	66,268	$0.145397	$9,635	Per kWh Premium Considered Demand-Related
Demand Total				**$60,721,884**	
Energy					
First 6,000 kWh	kWh	348,050,244	$0.0729890	$25,403,839	Energy Revenues Based on Additional kWh Rate
Next 300 kWh/kW	kWh	519,725,648	$0.0729890	$37,934,255	Energy Revenues Based on Additional kWh Rate
Additional kWh	kWh	228,571,887	$0.0729890	$16,683,233	Energy Revenues Based on Additional kWh Rate
Non-Church Cap Rate	kWh	928,876	$0.0729890	$67,798	Energy Revenues Based on Additional kWh Rate
Church Cap Rate	KWh	66,268	$0.0729890	$4,837	Energy Revenues Based on Additional kWh Rate
Fuel Adjustment Clause (FAC)	kWh		$0.0034872	$3,826,668	
Total Energy	kWh	0	$0.0000000	($212)	
Energy Total				**$83,920,419**	
Total Schedule				**$148,107,144**	

Kroger Proposed Rate DS
Revenue Verification and Classification of Revenues by Rate Component

Description	Units	Customer Bills/ Sales	Proposed Rate	Proposed Revenue
Customer Charge				
Load Management Rider	Bills	1,545	$5.00	$7,725
Single Phase	Bills	79,682	$15.00	$1,195,230
Three Phase	Bills	75,323	$30.00	$2,259,690
Demand Charge				
First 15 kW	kW	1,355,176	$0.00	$0
Additional kW	kW	2,641,511	$15.85	$41,867,949
Energy Charge				
First 6,000 kWh	kWh	348,050,244	$0.124492	$43,329,505
Next 300 kWh/kW	kWh	519,725,648	$0.077994	$40,535,534
Additional kWh	kWh	228,571,887	$0.064607	$14,767,366
Non-Church Cap Rate	kWh	928,876	$0.325398	$302,254
Church Cap Rate	kWh	66,268	$0.199765	$13,238
Riders				
Fuel Adjustment Clause (FAC)	kWh		$0.003487	$3,826,668
Rate DS RTP				
Customer Charge	Bills	12	$183.00	$2,196
Total Energy				($212)
Total Schedule				**$148,107,144**

Kroger Proposed Rate DS
Revenue Verification and Classification of Revenues by Rate Component

Classification					
Customer					
Load Management Rider	Bills	1,545	$5.00	$7,725	
Single Phase	Bills	79,682	$15.00	$1,195,230	
Three Phase	Bills	75,323	$30.00	$2,259,690	
Rate DS RTP - Customer Charge	Bills	12	$183.00	$2,196	
Customer Total				**$3,464,841**	
Demand					
First 15 kW	kW	1,355,176	$0.00	$0	
Additional kW	kW	2,641,511	$15.85	$41,867,949	
First 6,000 kWh	kWh	348,050,244	$0.059885	$20,842,989	Per kWh Premium Considered Demand-Related
Next 300 kWh/kW	kWh	519,725,648	$0.013387	$6,957,567	Hours Use Premium Considered Demand-Related
Non-Church Cap Rate	kWh	928,876	$0.260791	$242,242	Per kWh Premium Considered Demand-Related
Church Cap Rate	kWh	66,268	$0.135158	$8,957	Per kWh Premium Considered Demand-Related
Demand Total				**$69,919,704**	
Energy					
First 6,000 kWh	kWh	348,050,244	$0.0646071	$22,486,516	Energy Revenues Based on Additional kWh Rate
Next 300 kWh/kW	kWh	519,725,648	$0.0646071	$33,577,966	Energy Revenues Based on Additional kWh Rate
Additional kWh	kWh	228,571,887	$0.0646071	$14,767,366	Energy Revenues Based on Additional kWh Rate
Non-Church Cap Rate	kWh	928,876	$0.0646071	$60,012	Energy Revenues Based on Additional kWh Rate
Church Cap Rate	KWh	66,268	$0.0646071	$4,281	Energy Revenues Based on Additional kWh Rate
Fuel Adjustment Clause (FAC)	kWh		$0.0034872	$3,826,668	
Total Energy				($212)	
Energy Total				**$74,722,599**	
Total Schedule				**$148,107,144**	

Rate DS Bill Impacts
At Kroger Recommended Rate Design
And Duke Energy Kentucky Proposed Revenue Requirement

Level of Demand (kW)	Level of Use (kWh)	Total Current Bill	Total Proposed Bill	Percent Increase
5	2,000	$280	$299	6.9%
10	4,000	$529	$568	7.3%
10	6,000	$779	$837	7.4%
30	6,000	$940	$1,076	14.4%
30	9,000	$1,194	$1,339	12.2%
30	12,000	$1,447	$1,603	10.8%
50	10,000	$1,493	$1,746	16.9%
50	15,000	$1,915	$2,184	14.1%
50	20,000	$2,337	$2,623	12.3%
75	15,000	$2,184	$2,583	18.3%
75	20,000	$2,606	$3,022	16.0%
75	30,000	$3,432	$3,879	13.0%
100	20,000	$2,874	$3,420	19.0%
100	30,000	$3,718	$4,297	15.6%
100	40,000	$4,515	$5,121	13.4%
300	60,000	$8,400	$10,117	20.4%
300	90,000	$10,931	$12,749	16.6%
300	120,000	$13,184	$15,058	14.2%
500	100,000	$13,925	$16,813	20.7%
500	200,000	$21,852	$24,994	14.4%
500	300,000	$29,127	$32,422	11.3%