

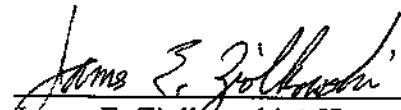
KYPSC CASE NO. 2017-00427
AG 2nd SET
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VERIFICATION

STATE OF OHIO)
)
COUNTY OF HAMILTON) SS:


The undersigned, James E. Ziolkowski, Director, Rates & Regulatory Planning, being duly sworn, deposes and says that he has personal knowledge of the matters set forth in the foregoing data requests, and that the answers contained therein are true and correct to the best of his knowledge, information and belief.



James E. Ziolkowski Affiant

Subscribed and sworn to before me by James E. Ziolkowski on this 26TH day of April, 2018.

ADELE M. FRISCH
Notary Public, State of Ohio
My Commission Expires 01-05-2019



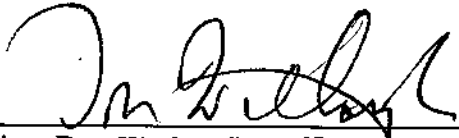
NOTARY PUBLIC

My Commission Expires: 1/5/2019

VERIFICATION

STATE OF OHIO)
)
COUNTY OF HAMILTON) SS:


The undersigned, William Don Wathen, Jr., Director of Rates & Regulatory Strategy, being duly sworn, deposes and says that he has personal knowledge of the matters set forth in the foregoing data requests and that the answers contained therein are true and correct to the best of his knowledge, information and belief.



William Don Wathen Jr., Affiant

Subscribed and sworn to before me by William Don Wathen, Jr., on this 27TH day of APRIL, 2018.

ADELE M. FRISCH
Notary Public, State of Ohio
My Commission Expires 01-05-2019



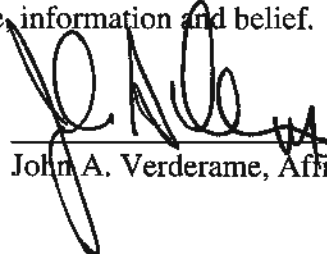
NOTARY PUBLIC

My Commission Expires: 1/5/2019

VERIFICATION


STATE OF NORTH CAROLINA)
)
) SS:
COUNTY OF MECKLENBURG)

The undersigned, John A. Verderame, Managing Direct – Power, Trading & Dispatch, being duly sworn, deposes and says that he has personal knowledge of the matters set forth in the foregoing data requests, and that the answers contained therein are true and correct to the best of his knowledge, information and belief.



John A. Verderame, Affiant

Subscribed and sworn to before me by John A. Verderame on this 24 day of April, 2018.



NOTARY PUBLIC

My Commission Expires:

MARY B VICKNAIR
NOTARY PUBLIC
Davie County
North Carolina
My Commission Expires Sept. 21, 2022

**Duke Energy Kentucky
Case No. 2017-00427
Attorney General's Second Set Data Requests
Date Received: April 23, 2018**

AG-DR-02-001

REQUEST:

Provide an updated response to the Attorney General's Initial Data Requests, item 7, to include all months for which data is now available.

RESPONSE:

Please see AG-DR-02-001 Attachment.xlsx.

PERSON RESPONSIBLE: James E. Ziolkowski

AG-DR-02-001
ATTACHMENT
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AND ON CD

**DUKE ENERGY KENTUCKY
RIDER DSMR REVENUES BILLED TO RESIDENTIAL CUSTOMERS**

RATE FAMILY RS

Row Labels	Sum of USAGE	Sum of TOT RVNU	Sum of DEMAND SIDE	No. Bills	Avg. kWh/Bill	Avg. Total Bill	Avg. DSMR/Bill	DSMR %
2010	1,564,329,727	\$129,288,260	\$2,952,768	1,459,007	1,072	\$88.61	\$2.02	2.3%
2011	1,515,458,545	\$126,560,157	\$2,531,320	1,463,573	1,035	\$86.47	\$1.73	2.0%
2012	1,463,759,203	\$127,770,457	\$3,078,787	1,476,270	992	\$86.55	\$2.09	2.4%
2013	1,479,061,355	\$129,482,464	\$3,527,613	1,483,787	997	\$87.26	\$2.38	2.7%
2014	1,493,528,781	\$135,133,649	\$3,968,546	1,491,480	1,001	\$90.60	\$2.66	2.9%
2015	1,459,286,105	\$125,980,928	\$6,836,652	1,499,593	973	\$84.01	\$4.56	5.4%
2016	1,464,499,408	\$129,599,497	\$9,867,486	1,515,224	967	\$85.53	\$6.51	7.6%
2017	1,405,465,746	\$120,745,173	\$10,923,645	1,528,999	919	\$78.97	\$7.14	9.0%
2018	433,313,960	\$37,828,337	\$2,785,456	385,920	1,123	\$98.02	\$7.22	7.4%
Grand Total	12,278,702,830	\$1,062,388,922	\$46,472,273	12,303,853	998	\$86.35	\$3.78	4.4%

Note: 2018 Data through March 2018.

REQUEST:

Is Duke aware of any other utility whose residential DSM costs represent more than 7% of the average residential customers' bill? If so, please identify.

RESPONSE:

Objection. Unreasonable, overbroad, unduly burdensome and misstates facts. This question lacks specificity in terms of time, place and jurisdiction and purports to require the Company to examine the DSM programs and rates of each and every utility in the country. Duke Energy Kentucky has not performed this research or calculation, nor has it examined whether any other utilities completely separate all DSM costs from base rate recovery. To the extent such information is publicly available from prior rate orders and publicly available tariffs, such information is equally available to the Attorney General.

Without waiving said objection, and to the extent discoverable, Duke Energy Kentucky's electric rates are currently the lowest in the Commonwealth of Kentucky and among the lowest in the country. Because of its low rates, any individual charge included in a Duke Energy Kentucky customer's bill will be a larger percentage of the total compared to other utilities with higher average rates. The metric comparing the DSM costs to base rates is irrelevant, at best, and misleading, at worst, in judging the reasonableness of the overall DSM rate. The appropriate metric is whether the DSM programs are cost effective thereby producing an overall savings to customers.

Furthermore, for a typical residential customer (1,000 kWh/month usage) of Duke Energy Kentucky, the currently effective Rider DSM rate of \$0.003857 (Tariff Sheet No. 78) is substantially less than seven percent of his/her bill.

PERSON RESPONSIBLE: William Don Wathen Jr.

REQUEST:

Refer to the direct testimony of Timothy J. Duff, pages 5-6.

- a. Would Duke implement a DSM program without a provision for an “incentive” for the company to “offer these programs?”
- b. Provide the likelihood of Duke having to make investments in expensive generating resources over a 5, 10 and 15-year time horizon, as described on page 6.
- c. Confirm the off-system sales Duke makes are shared with Duke through the Rider PSM.
- d. Confirm that as described on pages 5-6, Duke’s previous DSM suite provides, directly or indirectly, for: 1) recovery of cost of providing EE/DSM programs, 2) insulation from lost margins due to reduction in sales volume, 3) an incentive for Duke to offer the programs, and 4) Duke to receive a share of off-systems sales through the potential sale of excess power into wholesale markets.

RESPONSE:

- a. Duke Energy Kentucky has not evaluated that possibility as it believes that its approved shared savings incentive, which allows it to receive 10% of the net benefit associated with its DSM programs, is appropriate and consistent with KRS

278.285. The Company's shared saving incentive provides it an opportunity to earn a reasonable financial incentive that is directly tied to its ability to deliver the portfolio of DSM programs to customers in the most cost-effective manner possible. The incentive mechanism provides the Company an opportunity and "incentive" to offer these programs which would otherwise reduce revenues and erode cost recovery, in lieu of making capital investments that actually grow the Company's business.

- b. The Company believes that its EE and DR programs are cost effective alternatives to similar generation purchases in the current market; and barring a collapse in capacity market prices in the future, will remain cost effective. Duke Energy Kentucky, as an FRR entity, must provide sufficient unit specific capacity to meet its FRR plan obligations. The statement is intended to point out that any capacity deficiency must be filled and the only other alternative to using cost-effective DR or EE is to make market purchases, which could be limited and at prices that are more volatile due to availability.
- c. Non-Native margins are shared through the profit sharing mechanism Rider PSM with customers now receiving 90 percent of net off-system sales.
- d. The Duke Energy Kentucky suite of DSM products is designed in accordance with KRS 278.285 and has been for decades.

PERSON RESPONSIBLE: Tim Duff (a) and (d)
John Verderame (b) and (c)

REQUEST:

Refer to the direct testimony of Timothy J. Duff, page 20.

- a. Provide support for the statement that, “the cost to maintain the annual resource associated with the program is less [than] \$300 thousand per year.”
 - i. Any response should be broken out by specific cost types and whether each cost is one-time or ongoing. Provide any and all responses in native electronic format.
- b. Provide support for the position that terminating Power Manager would incur costs in excess of \$1 million.
 - i. Any response should be broken out by specific cost types and whether each cost is one-time or ongoing. Provide any and all responses in native electronic format.

RESPONSE:

- a. Please see the tab entitled “On-Going Program Costs” in the attached Excel file entitled AG-DR-02-004.XLSX
- b. Please see the tab entitled “Removal Costs” in the attached Excel file entitled AG-DR-02-004.XLSX

PERSON RESPONSIBLE: Tim Duff

AG-DR-02-004
ATTACHMENT
IS BEING
PROVIDED
ELECTRONICALLY
AND ON CD

On-Going DEK Power Manager Costs

Underlying Assumptions:

Continue to operate the program to meet PJM commitments (avoiding penalties from PJM).

No new installations, but vendor will be kept on retainer in order to remove/service devices upon customer request.

Removal rate of 2% (similar to past experience)

Customer Incentives will be paid at the existing approved rate of \$12 and \$18 for the Option A and B customers, respectively.

<u>Cost Description</u>	<u>Annual Cost</u>	<u>Notes</u>
Customer Participation Incentives	\$ 182,185	7818 customers @ \$12/year and 4959 @ \$18/year (current figures) less 1% for summer removals
Franklin Energy minimum retainer	31,164	Monthly minimum fee to keep Franklin Energy available for service/removal work (assumes continued program in DEO)
Annual Removals	13,799	2% of existing base at \$54 per removal
Duke Labor	45,600	Program Management, PJM registration, external reporting
Yukon System	15,000	Communication and tracking system costs
Customer Communications	5,000	Program reminders
Total Direct Costs	\$ 292,749	

Program Shutdown Costs

Assumptions

- Will remove on a 6 month project (removing about 2100 per month)...recognizing that there will be some "stragglers"
- Will require customer communications--letters, leave behind materials and some phone calls
- Will require Project Management from Franklin Energy--including tear-down and recycling of devices
- Will require some ongoing Product Management oversight from Duke Energy Kentucky

<u>Cost Description</u>	<u>One-Time Costs</u>	<u>Notes</u>
Switch Removal Costs	\$ 1,022,160	\$80@ to remove, warehouse, tear down and recycle devices (will need to hire temporary resources, rent trucks, etc.)
Franklin Energy retainer	20,776	Monthly minimum fee for 8 months
Duke Labor	24,000	Program management for 8 months
Customer Communication	10,000	Notification letters and leave-behind materials
Other Shutdown costs	10,000	Archival of Yukon data website changes, residual reporting requirements, etc.
	<u>\$ 1,086,936</u>	

REQUEST:

Refer to the direct testimony of John A. Verderame, pages 24-25.

- a. Provide table 2, but include the capacity of Duke's new solar project.
- b. Does Duke expect any new generation capacity that is not already assumed by table 2 to be in service by December 31, 2021?
- c. Does Duke have the information necessary to provide additional years to table 2? If so, please provide same.
- d. Are any EE/DSM programs used in FRR plans other than PowerShare or PowerManager?

RESPONSE:

- a. The Duke Energy Kentucky solar projects are connected to the grid at the distribution level. These "behind the meter" resources were placed in service in late 2017. Since the PJM load obligation is based on the coincident peak from the previous summer, the value of the solar offset would not be included in the Duke Energy Kentucky obligation for Delivery Years 2018-2019 and beyond in the initial FRR Plans. The actual beneficial impact on the Duke Energy Kentucky load obligation of this behind the meter generation will be determined for each year independently and will act as an offset to load as opposed to a capacity resource.

- b. Duke Energy Kentucky does not currently expect any generation that is not already assumed in Table 2 to be in service by December 31, 2021.
- c. Information for 2021/2022 has been added to Table 1 and 2 as shown below:

Table 1: DEK Initial FRR Position

Planning Year	EFORD		Total UCAP MW		PJM Load Obligation	FRR Position		Excess Based on Load	
	East Bend	Woodsdale	Gen	DR		w/ DR	w/o DR	w/ DR	w/o DR
2011/2012	4.4%	10.0%	947.6	42.3	(930.5)	59.4	17.1	6.4%	1.8%
2012/2013	5.4%	5.1%	980.6	42.4	(959.2)	63.8	21.4	6.7%	2.2%
2013/2014	1.7%	3.0%	1005.7	38.3	(986.5)	57.5	19.2	5.8%	1.9%
2014/2015	3.4%	4.4%	992.7	36.6	(1004.9)	24.4	(12.2)	2.4%	-1.2%
2015/2016	4.2%	3.2%	994.9	45.1	(979.9)	60.1	15.0	6.1%	1.5%
2016/2017	4.9%	6.5%	967.7	44.8	(996.1)	16.4	(28.4)	1.6%	-2.9%
2017/2018	6.8%	4.6%	964.8	31	(1006.5)	4.3	(41.7)	0.4%	-4.1%
2018/2019	9.3%	3.2%	991.6	31.9	(981.4)	42.1	10.2	4.3%	1.0%
2019/2020	3.5%	2.8%	1028.5	16.3	(944.4)	100.4	84.1	10.6%	8.9%
2020/2021	9.8%	6.2%	974.7	10.9	(974.7)	10.9	0.0	1.1%	0.0%
2021/2022	7.2%	5.3%	994.5	0	(978.4)	16.1	16.1	1.6%	1.6%

Table 2: DEK Final FRR Position

Planning Year	EFORD		Total UCAP MW		PJM Load Obligation	FRR Position		Excess Based on Load	
	East Bend	Woodsdale	Gen	DR		w/ DR	w/o DR	w/ DR	w/o DR
2011/2012	4.4%	10.0%	947.6	42.3	(930.5)	59.4	17.1	6.4%	1.8%
2012/2013	5.4%	5.1%	980.6	42.4	(925.0)	98.0	55.6	10.6%	6.0%
2013/2014	7.7%	12.4%	908.1	35.4	(943.3)	40.2	4.8	4.3%	0.5%
2014/2015	14.8%	5.7%	921.8	27	(972.4)	30.4	3.4	3.1%	0.3%
2015/2016	15.6%	7.9%	931.7	36.2	(955.5)	15.8	(20.4)	1.7%	-2.1%
2016/2017	3.5%	3.8%	1023.7	28.7	(918.7)	133.7	105.0	14.6%	11.4%
2017/2018	9.8%	3.2%	988.4	27	(970.5)	11.9	(15.1)	1.2%	-1.6%
2018/2019	7.2%	9.4%	975.6	15	(969.5)	21.1	6.1	2.2%	0.6%
2019/2020	9.9%	7.9%	966.4	16.3	(944.4)	38.3	22.0	4.1%	2.3%
2020/2021	9.9%	7.9%	966.4	10.9	(974.7)	2.6	(8.3)	0.3%	-0.9%
2021/2022	9.9%	7.9%	966.4	0	(978.4)	(12.0)	(12.0)	-1.2%	-1.2%

It should be noted that the forced outage rates and load obligation in 2019/2020, 2020/2021, and 2021/2022 in Table 2 will be updated when PJM finalizes them prior to the start of each Delivery Year. Currently, the 5-year average forced outage rates are used for the aforementioned Delivery Years.

- d. No, only PowerShare and PowerManager programs are currently included in the FRR Plans.

PERSON RESPONSIBLE: John Verderame

REQUEST:

Refer to the direct testimony of John A. Verderame, pages 26-27.

- a. Provide an explanation of the statement “While the Company can theoretically purchase capacity from outside the PJM footprint, deliverability constraints of imports significant limit this option.” Any explanation should specifically address whether deliverability is a problem in the event Duke purchases capacity from the south or west of its system, particularly from other PSC-jurisdictional utilities.

RESPONSE:

PJM provides the ability to import capacity resources from outside the PJM footprint. PJM has specific rules and requirements for the utilization of external resources in either FRR Plans or as RPM resources. Among those requirements are the availability and purchase of firm electric transmission and the creation of an electric ‘pseudo tie’ between the external generation and PJM. Firm transmission out of a neighboring Balancing Authority and into PJM is a limited resource. Transmission availability varies from year to year based on power flows, and transmission and generation retirements or additions. PJM also has the ability to put hard limits on external generation based on reliability parameters. Regarding purchases from other PSC jurisdictional utilities, Duke Energy

Kentucky has made small capacity purchases from both AEP and EKPC in past years; however Duke Energy Kentucky is in the DEOK Delivery Zone and AEP and EKPC are in their own respective zones. During Delivery Years such as most recently auctioned 2020/2021 year, where the DEOK zone separated from the rest of PJM, purchases from AEP or EKPC would not be deemed deliverable into the DEOK zone.

PERSON RESPONSIBLE: John Verderame

REQUEST:

Refer to the direct testimony of John A. Verderame, pages 34-35. Provide an explanation of the terms used in the keys of the graphs.

RESPONSE:

Regarding "RTO Supply Curve"

VRR – Variable Resource Requirement Curve, The Demand Curve that relates the maximum price for a given level of capacity resource commitment relative to reliability requirements.

Annual, Extended Summer and Limited Supply – Supply Curve for capacity offered in the zone for the Base Residual Auction, defined by the resource-specific offers submitted by providers.

Annual, Extended Summer and Limited MCP – Zonal Auction Market Clearing Price. The price the auction cleared at, where the VRR and Supply Curves meet.

Regarding "MAAC Supply Curve"

VRR – Variable Resource Requirement Curve, The Demand Curve that relates the maximum price for a given level of capacity resource commitment relative to reliability requirements.

Annual, Extended Summer and Limited Supply – Supply Curve for capacity offered in the zone for the Base Residual Auction, defined by the resource-specific offers submitted by providers.

Annual, Extended Summer and Limited MCP – Zonal Auction Market Clearing Price. The price the auction cleared at, where the VRR and Supply Curves meet.

Regarding “RPM Base Residual Auction Clearing Prices” Chart, the keys are acronyms for PJM defined capacity Local Delivery Area zones.

RTO – Regional Transmission Organization (PJM)

EMAAC – Eastern Mid-Atlantic Area Council

SWMAAC – Southwestern Mid-Atlantic Area Council

MAAC – Mid-Atlantic Area Council

PERSON RESPONSIBLE: John Verderame