

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC APPLICATION OF DUKE ENERGY) CASE No.
KENTUCKY, INC. TO AMEND ITS DEMAND SIDE) 2022-00251
MANAGEMENT PROGRAMS)

ATTORNEY GENERAL’S POST-HEARING BRIEF

Pursuant to the Commission’s Order of March 31, 2023, the Attorney General of the Commonwealth of Kentucky, through his Office of Rate Intervention [“OAG”], hereby submits this post-hearing brief in the above-styled matter.

I. STATEMENT OF THE CASE

On August 15, 2022, Duke Energy, Kentucky, Inc. [“DEK” or “the Company”] filed its application in the instant matter to amend its demand side management [“DSM”] programs. On August 24, 2022, the OAG filed its motion to intervene, which the Commission granted on August 31, 2022. Following the issuance of the September 2, 2022 procedural order, the OAG and Commission Staff issued discovery requests. The OAG filed the testimony of witness, Paul J. Alvarez on November 9, 2022 and responded to DEK’s data requests on December 5, 2022. DEK filed its rebuttal testimony on December 12, 2022. Pursuant to the procedural order, the OAG on December 14, 2022, requested that the case be submitted for decision on the record, but DEK requested an evidentiary hearing, which was held on March 28, 2023.

II. BACKGROUND

In Case No. 2016-00152,¹ DEK was granted a Certificate of Public Convenience and Necessity [“CPCN”] to replace and upgrade its then-existing electric and combination electric and gas customers’ metering infrastructure with a digital Advanced Metering Infrastructure [“AMI”] throughout its service territory.² In support of its petition, DEK asserted, *inter alia*, that ratepayers would benefit from AMI, by “. . . giv[ing] customers greater convenience, transparency and control over their energy usage. . . .”³ In the CPCN case, OAG witness Mr. Alvarez noted that AMI brings not only operational savings for the utility,⁴ but also the potential for additional benefits to ratepayers:

“By offering a time-varying rate option, the cost-benefit ratio of the smart meter deployment is likely to improve; without such an option, the potential to improve the cost-benefit ratio is lost Once the asset has been bought and is being paid for, it only makes sense to maximize its potential value by implementing potentially beneficial capabilities.”⁵

In the CPCN case, the Commission approved a settlement between the OAG and DEK which, *inter alia*, authorized the Company to initiate a Peak Time Rebate [“PTR”] Pilot Program for residential customers. PTR programs provide monetary incentives to customer-participants who elect to reduce their electricity consumption during times of expensive peak system needs [“Critical Peak Events,” or “CPEs”], but do *not* penalize program participants who choose not to reduce their consumption during CPEs. Thus when properly designed,

¹ *In Re: Application of Duke Energy Kentucky, Inc. for (1) A Certificate of Public Convenience and Necessity Authorizing the Construction of an Advanced Metering Infrastructure, etc.* [“the CPCN case”].

² DEK’s CPCN also granted permission to replace gas customers’ meters with Automated Meter Reading [“AMR”] infrastructure. *See also* Case No. 2016-00152, Final Order dated May 25, 2017, at 1-2.

³ Case No. 2016-00152, Direct Testimony of Sasha J. Weintraub at 6:5-6.

⁴ As the Commission noted in its Final Order: “The main benefits identified and quantified by Duke Kentucky are the elimination of monthly and off-cycle manual meter reads, the elimination of truck rolls due to the ability to conduct electric disconnects and reconnects remotely, enhanced theft detection, reduction of meter installation errors, reduction of underperforming meters, and the availability of interval usage data that can empower customers to better understand their energy usage and save energy.” Case No. 2016-00152, Final Order dated May 25, 2017 at 11.

⁵ Case No. 2016-00152, Alvarez Direct Testimony at 16.

PTR programs utilize the AMI system's advanced technology to yield savings for customers.⁶ As DEK stated in its testimony supporting that settlement, the PTR would allow "... eligible customers to proactively take action to reduce their energy bill."⁷

DEK's PTR Pilot Program was submitted for Commission review in Case No. 2019-00277.⁸ In that docket, the Company represented the PTR Pilot Program as giving participating customers an "... opportunity to lower their electric bill by reducing their electric usage during Company-designated peak load periods."⁹ OAG witness Mr. Alvarez filed testimony, opining *inter alia*, that the PTR Program would benefit DEK customers: (a) by maximizing the benefits AMI technology brings; and (b) through DEK maintaining its status as a supplier of Fixed Resource Requirements in the PJM capacity market, which alleviates potential needs for the Company to procure capacity through the PJM capacity market that doubtlessly would prove more expensive than using DEK's rate-based generating plants.¹⁰ DEK agreed that if the PTR Program were allowed to continue beyond the three-year pilot period, the program would have a capacity benefit as the load reduction becomes incorporated into the PJM load forecast.¹¹ The parties eventually entered into a settlement in that docket that set the parameters of the PTR Pilot Program. In approving that settlement, the Commission found that the PTR Program:

"... has the potential to be very beneficial to Duke Kentucky and its customers. The Commission is persuaded by Mr. Alvarez's testimony that such a program can become part of standard residential rates as a default option in the future, which can allow for peak shaving and lower costs. Such an opportunity not only provides a low-cost avenue for capacity

⁶ See Case No. 2019-00277, Alvarez Direct Testimony at 6.

⁷ Case No. 2016-00152, Settlement Testimony of Peggy A. Laub at 11:14-15.

⁸ *In Re: Electronic Application of Duke Energy Kentucky, Inc. to Amend its Demand Side Management Programs*.

⁹ Case No. 2019-00277, Application at 8.

¹⁰ *Id.*, Alvarez Direct Testimony at 10-11; *see also* OAG Responses to DEK Data Requests, Item No. 38, and Case No. 2019-00277, Final Order dated April 27, 202 at 7-8.

¹¹ *Id.*, Swez Rebuttal Testimony at 11.

needs, but affords customers an increased ability to control a portion of their energy bill. Using AMI metering for more than just billing purposes is something that not only Duke Kentucky, but all utilities should consider to maximize the benefits of smart meters. With AMI meters, programs such as Time of Use rates and prepay programs can be easily added as a rate options. Such rate options contribute to lower peak demand and help avoid costly capital investments or free up power to be sold on the market for additional revenue. . . .”¹²

In Case No. 2022-00398,¹³ DEK submitted its Annual Status Report, Adjustment of the Demand Side Management [“DSM”] Cost Recovery Mechanism, and Amended Tariff Sheets for Gas Rider DSMR and Electric Rider DSMR. In that docket, DEK advised that the PTR Pilot Program’s cost-effectiveness, as measured by the Total Resource Cost [“TRC”], was less than 1.0, meaning that by that measure, it was not cost-effective. However, the Commission noted that:

“ . . . [T]he Commission has traditionally evaluated DSM effectiveness by primarily focusing on the TRC results. Therefore, when discussing Duke Kentucky’s low-income programs, such results are not uncommon for low-income programs to not be cost-effective. The Commission has found that such DSM programs assist low-income customers in lowering their energy bill as well as the impact these programs have on Duke Kentucky’s generation load.¹⁴

III. ARGUMENT

A. The PTR Program Has Been a Success

The PTR Program’s Evaluation, Measurement and Verification report [“EM&V”]¹⁵ tendered simultaneously with DEK’s application in this matter, establishes that the PTR is a highly-effective demand response tool. Statistically significant load impacts were detected during the CPEs DEK called over the three-season period spanning Summer 2020, Winter

¹² Case No. 2019-00277 Final Order dated April 27, 2020 at 14-15.

¹³ *In Re: Electronic Annual Cost Recovery Filing For Demand Side Management By Duke Energy Kentucky, Inc.*

¹⁴ Case No. 2022-00398, Final Order dated March 7, 2023, at 7 [emphasis added].

¹⁵ “Peak Time Credit Pilot Evaluation,” submitted by Resource Innovations to Duke Energy, Kentucky, March 29, 2022, attached to Application as Appendix E, Case No. 2022-00251.

2021 and Summer 2021.¹⁶ In fact, the approximately 1,000 PTR participants were able to reduce their load by an average of 0.21 kW, which constituted an average reduction of 9.03% in their hourly load.¹⁷ All segments of participating residential class customers were able to reduce demand during peak times,¹⁸ while participants with Wi-Fi enabled thermostats had an even greater demand reduction.¹⁹ Over that same three-season period, energy reductions averaged 0.85 kWh.²⁰ The overwhelming majority of customers (81%) indicated they agreed or strongly agreed that the monetary incentive was enough to motivate them to reduce electric usage during CPEs.²¹ In fact, 55.6% of all participants over the three-season period earned rebates.²² The majority of responding participants were satisfied with the program,²³ and very likely to recommend the program to other customers.^{24,25} In short, the only available empirical data DEK produced regarding the PTR Program Pilot's efficacy indicates that it works well in reducing peak time usage, and customers actually like it.

B. DEK Should Continue the PTR

Now that the Commission and stakeholders know that the PTR Program was effective at reducing peak load, and achieved a high degree of satisfaction among participants, there

¹⁶ EM&V, at 6.

¹⁷ EM&V, Table 1-2, at 6.

¹⁸ EM&V, Figure 3-3, at 20.

¹⁹ Case No. 2022-00251 Application, Appendix F, p. 3.

²⁰ EM&V, Table 1-1, at 4.

²¹ EM&V, Table 1-1, at 4.

²² EM&V, Table 1-1, at 4.

²³ EM&V, Table 1-1, at 5.

²⁴ See EM&V at 8: "When asked how likely they would recommend the program to others, respondents in the winter survey gave an average rating of 8.4 out of 10 with a Net Promoter Score (NPS) of 463. In the summer survey, respondents gave an average rating of 8.6 out of 10, with an NPS of 49, indicating that there are a much larger number of promoters that are happy with the program than detractors." [Emphasis added]

²⁵ Two hundred out of 241 participants responding to the survey stated they would recommend the PTR to a friend or family member. EM&V, Table 4-14, at 52.

is reason to believe that continuing the PTR Program either as a voluntary DSM or tariffed program could allow the participation rate to increase, which would achieve a stronger demand response.

Many PTR Program start-up costs have already been recovered.²⁶ Additionally, Mr. Alvarez's benefit-cost analysis indicates that an expanded PTR Program with a participation rate of between 8% - 20% will "easily deliver benefits to customers in excess of costs to customers."²⁷ Industry experience shows such participation rates are indeed achievable.²⁸ Moreover, Mr. Alvarez's benefit-cost analysis reflected three additional key factors, which DEK's benefit-cost analysis did not: (a) PTR participants not only shift usage away from peak hours, but also reduce overall energy consumption;²⁹ (b) a greater rate of DEK customer participation in the PTR will yield a higher demand response imputed price effect ["DRIPE"];³⁰ and (c) lower prices for off-peak periods.³¹ Finally, the PTR Program's value will only increase over time if energy prices continue to increase faster than inflation, which is currently the case.³²

DEK points out that the PTR Pilot Program did not prove cost-effective under the TRC test. The Company's analysis, however, includes the PTR Pilot Program's costs, while retaining a low participation rate; in essence, the TRC score only provides the Pilot Program's TRC analysis. DEK never attempted to determine the economics of a full program, as Mr.

²⁶ Alvarez Direct Testimony at 32.

²⁷ Alvarez Direct Testimony at 33. Mr. Alvarez also opined that more research into the costs and benefits of a universal PTR approach is warranted. *Id.* at 34-36.

²⁸ *Id.* at 21:16-19.

²⁹ *Id.* at 23-24 (*citing* King C. and Delurey D. Efficiency and Demand Response: Twins, Siblings, or Cousins? *Public Utilities Fortnightly*. March 2005, introduced as OAG Hearing Exhibit 1 and provided in response to DEK Post-Hearing Data Requests).

³⁰ *Id.* at 24.

³¹ *Id.* at 24, 26-27, 30-31.

³² *Id.* at 36. *See also, e.g.,* <https://www.npr.org/2022/09/13/1122371879/electricity-utilities-gasoline-gas-prices-inflation-august-cpi-consumer-prices>

Alvarez's analysis does. Moreover, the Commission should not apply the low TRC score result as a bar to continuing the PTR program. PTR is still a relatively new type of program for the Commonwealth with evolving technology.

Furthermore, there is now empirical data of record in the instant docket that DEK's PTR Program has been effective at reducing demand during peak hours. There is reason to believe that given time, it will also prove a valid conservation tool. The Commission does not apply low TRC scores as a bar against continuing weatherization programs for low-income customers because it is well-recognized that weatherization helps mitigate their bills. While DEK's PTR is available to all segments of the residential class, it represents a new, innovative type of program that likewise is proven to mitigate customer bills. Moreover, a PTR program provides additional value to the Company and *all* ratepayers that is not measured by the TRC score, by hedging the risk of having to procure expensive additional capacity, which will become more expensive in the future. The Commission should thus require DEK to continue the PTR program offering, and further, should encourage all jurisdictional electric utilities that have AMI, to provide PTR program offerings to their customers. If the Commission is persuaded to keep the DEK PTR as a DSM program, it should require DEK to develop a more thorough benefit-cost analysis methodology such as Mr. Alvarez employed when the Company submits its next annual DSM update.

Finally, the Commission should consider requiring the Company to revise its marketing approach. DEK's PTR Pilot recruited participants solely via email solicitations.³³ However, an expanded, more comprehensive marketing approach including social media, robocalls, mass media and text messaging would enhance the PTR Program. In addition, the

³³ EM&V at 10.

means of notifying participants of CPEs should be expanded to include text messaging and the Duke Energy app.

C. Conclusion

Reducing peak time usage has proven vexatious for electric utilities around the nation. Modifying customers' peak time consumption behavior would contribute to the continuity of a stable, cost-effective grid. AMI technology provides certain means to address peak usage behavior, although the costs likely will continue to exceed benefits unless regulators and utilities properly utilize its energy conservation and demand response capabilities.³⁴ PTR programs are one such means of providing ratepayers a partial return on the investment they provide to utilities. To date, however, the only efforts other than the PTR Pilot Program that DEK has made to provide such a return to ratepayers is through its recently-introduced optional Critical Peak Pricing tariff ["CPP"], which charges higher rates to customers who fail timely to respond to CPE notices. DEK's apparent preference to resort to negative reinforcement as a means of curbing peak time usage, as evinced in the unproven CPP, stands in stark contrast to the well-tested – and well-received – positive reinforcement built into the PTR Program.

DEK's ratepayers are paying the costs of an expensive, advanced technology AMI metering system that has been in place and fully operating for over four years.³⁵ However, ratepayers are also paying for the stranded costs resulting from the undepreciated value of the old metering system. Given this financial burden, DEK owes its ratepayers a fiduciary duty to maximize the value that can be derived from AMI. The Commission should ensure that the Company makes good on its promises to provide a return on ratepayers' investment.

³⁴ Alvarez Direct Testimony at 39.

³⁵ See DEK's Semi-Annual Reporting in Case No. 2016-00152, post-case filing dated August 13, 2019, at 2.

WHEREFORE, the Attorney General respectfully requests that the Commission deny DEK's request to terminate the PTR Program, and instead order the Company to continue the program for those customers willing to enroll.

Respectfully submitted,

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