

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC 2021 INTEGRATED RESOURCE) CASE NO.
PLAN OF DUKE ENERGY KENTUCKY, INC.) 2021-00245

ATTORNEY GENERAL’S INITIAL DATA REQUESTS

The intervenor, the Attorney General of the Commonwealth of Kentucky, through his Office of Rate Intervention [“OAG”], hereby submits the following Initial Data Requests to Duke Energy Kentucky, Inc. [“DEK” or “the Company”], to be answered by the date specified in the Commission’s Orders of Procedure, and in accord with the following:

- (1) In each case where a request seeks data provided in response to a staff request, reference to the appropriate request item will be deemed a satisfactory response.
- (2) Identify the witness who will be prepared to answer questions concerning each request.
- (3) Repeat the question to which each response is intended to refer. The OAG can provide counsel for DEK with an electronic version of these questions, upon request.
- (4) These requests shall be deemed continuing so as to require further and supplemental responses if the Companies receive or generate additional information within the scope of these requests between the time of the response and the time of any hearing conducted hereon.
- (5) Each response shall be answered under oath or, for representatives of a public or private corporation or a partnership or association, be accompanied by a signed certification of the preparer or person supervising the preparation of the response on behalf of the entity that the response is true and accurate to the best of that person’s knowledge, information, and belief formed after a reasonable inquiry.

(6) If you believe any request appears confusing, request clarification directly from counsel for OAG.

(7) To the extent that the specific document, workpaper or information as requested does not exist, but a similar document, workpaper or information does exist, provide the similar document, workpaper, or information.

(8) To the extent that any request may be answered by way of a computer printout, identify each variable contained in the printout which would not be self-evident to a person not familiar with the printout.

(9) If the Companies have objections to any request on the grounds that the requested information is proprietary in nature, or for any other reason, notify OAG as soon as possible.

(10) As used herein, the words “document” or “documents” are to be construed broadly and shall mean the original of the same (and all non-identical copies or drafts thereof) and if the original is not available, the best copy available. These terms shall include all information recorded in any written, graphic or other tangible form and shall include, without limiting the generality of the foregoing, all reports; memoranda; books or notebooks; written or recorded statements, interviews, affidavits and depositions; all letters or correspondence; telegrams, cables and telex messages; contracts, leases, insurance policies or other agreements; warnings and caution/hazard notices or labels; mechanical and electronic recordings and all information so stored, or transcripts of such recordings; calendars, appointment books, schedules, agendas and diary entries; notes or memoranda of conversations (telephonic or otherwise), meetings or conferences; legal pleadings and transcripts of legal proceedings; maps, models, charts, diagrams, graphs and other demonstrative materials; financial statements, annual reports, balance sheets and other accounting records; quotations or offers; bulletins, newsletters, pamphlets, brochures and all other similar

publications; summaries or compilations of data; deeds, titles, or other instruments of ownership; blueprints and specifications; manuals, guidelines, regulations, procedures, policies and instructional materials of any type; photographs or pictures, film, microfilm and microfiche; videotapes; articles; announcements and notices of any type; surveys, studies, evaluations, tests and all research and development (R&D) materials; newspaper clippings and press releases; time cards, employee schedules or rosters, and other payroll records; cancelled checks, invoices, bills and receipts; and writings of any kind and all other tangible things upon which any handwriting, typing, printing, drawings, representations, graphic matter, magnetic or electrical impulses, or other forms of communication are recorded or produced, including audio and video recordings, computer stored information (whether or not in printout form), computer-readable media or other electronically maintained or transmitted information regardless of the media or format in which they are stored, and all other rough drafts, revised drafts (including all handwritten notes or other marks on the same) and copies of documents as hereinbefore defined by whatever means made.

(11) For any document withheld on the basis of privilege, state the following: date; author; addressee; indicated or blind copies; all persons to whom distributed, shown, or explained; and, the nature and legal basis for the privilege asserted.

(12) In the event any document called for has been destroyed or transferred beyond the control of the Company, state: the identity of the person by whom it was destroyed or transferred, and the person authorizing the destruction or transfer; the time, place, and method of destruction or transfer; and, the reason(s) for its destruction or transfer. If destroyed or disposed of by operation of a retention policy, state the retention policy.

(13) Provide written responses, together with any and all exhibits pertaining thereto, in one or more bound volumes, separately indexed and tabbed by each response, in compliance with Kentucky Public Service Commission Regulations.

(14) “And” and “or” should be considered to be both conjunctive and disjunctive, unless specifically stated otherwise.

(15) “Each” and “any” should be considered to be both singular and plural, unless specifically stated otherwise.

Respectfully submitted,

DANIEL CAMERON
ATTORNEY GENERAL



LAWRENCE W. COOK
J. MICHAEL WEST
ANGELA M. GOAD
JOHN G. HORNE II
ASSISTANT ATTORNEYS GENERAL
1024 CAPITAL CENTER DR., STE. 200
FRANKFORT, KY 40601
(502) 696-5453
FAX: (502) 564-2698
Larry.Cook@ky.gov
Michael.West@ky.gov
Angela.Goad@ky.gov
John.Horne@ky.gov

Certificate of Service

Pursuant to the Commission’s Orders in Case No. 2020-00085, and in accord with all other applicable law, Counsel certifies that an electronic copy of the forgoing was served and filed by e-mail to the parties of record. Further, counsel for OAG will submit the paper originals of the forgoing to the Commission within 30 days after the Governor lifts the current state of emergency.

This 1st day of October, 2021



Assistant Attorney General

1. Reference the Integrated Resource Plan (IRP) Executive Summary, p. 4. Regarding the change in the retirement date for the East Bend plant from the 2018 IRP's projected date of 2041 to the current IRP's projected date of 2035:
 - a. Confirm the following statement from IRP § 6, p. 45: “. . . the economic viability of East Bend 2 may be diminished from two directions – carbon regulation or low gas prices.”
 - b. Confirm that no existing federal regulations mandate a 2035 retirement.
 - c. Provide the basis for DEK's concern of a fuel supply risk in the next decade.
 - d. Identify and explain the “other factors that are likely to increase the costs of the plant to customers.”
 - e. Provide a table depicting the amount of stranded costs that would occur due to the premature retirement of the East Bend plant, assuming the retirement occurs during any year for the period 2025-2035.
 - f. Provide a discussion of the measures DEK will take, or plans to take to mitigate the extent to which its ratepayers will be required to pay for the stranded costs arising from the premature retirement of the East Bend plant. Include in your discussion any federal government programs the Company is tracking that might prove helpful in this regard.
 - g. Provide a discussion regarding the impact that East Bend's retirement will have on DEK's ability to comply with PJM's mandated minimum reserve margin requirement of 8.7%.
 - h. Reference IRP § 6, Model Results and Sensitivity Analysis, pp. 42-43. Confirm that:
 - (i) Under the three different natural gas forecasts referenced on p. 42, “. . . economic retirement of East Bend 2 follows within a few years.”¹
 - (ii) Under the base gas assumption, the retirement of the East Bend plant is accelerated to 2027.
 - (iii) Under a low gas environment, East Bend's retirement is accelerated to 2025.
 - i. Reference IRP Figure 6.3 at IRP p. 48. Confirm that under Transitional Portfolio B, both solar and wind experience a much more rapid build-up such that by 2035 when East Bend retires, the Company acquires 500 MW of solar generation and 470 MW of wind generation.
 - (i) Reference the following statement at IRP p. 49:

“It was also worth noting that due to the lower capacity factor of renewables, more MWs of generation needed to be added than were retired in order to be able to serve customers with sufficient energy and not be overly reliant on the market. When replacing higher capacity factor, dispatchable generation with lower capacity factor

¹ IRP at pp. 42-43.

intermittent generation, more MWs need to be added than retired in general.”

Given that the Company anticipates solar capacity to be approximately 24%, and wind capacity to be approximately 18%, explain whether this means that the Company would have to either build or acquire roughly five (5) times the amounts of solar and wind capacity in order to yield 500 MW of actual solar generation and 470 MW of actual wind generation.

- (ii) Based on current average prices for procurement of both solar and wind power generation, provide an approximate estimate of the costs DEK would incur to procure between 1 GW – 5 GW of renewable generation. Explain also if the Company has conducted any studies regarding rate affordability and/or elasticities of demand under such scenarios.
 - (iii) Reference IRP p. 52. Confirm that for purposes of DEK’s modeling of renewable energy prices in the instant IRP:
 - (1) DEK reduced those prices by 20% in order to reflect “... technological innovation, cost reductions in manufacturing and installation or tax incentives;” and
 - (2) The factors identified in subpart 1., immediately above, are merely assumptions.
- j. Based on all facts and circumstances known today, and recognizing the rapidly changing regulatory environment, provide the year for East Bend’s retirement which DEK believes to be most likely.
2. Reference IRP § 6, p. 49, discussing the four strategies for replacement of East Bend.
- a. Regarding strategy one (conversion of East Bend to gas-firing), explain why:
 - (i) the variable costs of such a unit would be higher; and
 - (ii) why the gas-fired unit’s capacity factor would be reduced.
3. Reference IRP Appendix D, p. 141, wherein it is stated: “Ongoing implementation of the Ozone NAAQS and the non-attainment status of the Cincinnati area may lead to additional reductions in NO_x emission allocations and/or imposition of short-term emission rate limits, potentially eventually necessitating the need for an SCR performance upgrade.”
- a. Provide the latest developments regarding whether: (i) the Cincinnati area has been found to be in non-attainment status; and (ii) reductions in NO_x emission allocations and/or imposition of short-term emission rate limits will be imposed.
 - b. Provide a cost estimate for the SCR performance upgrade, and describe how this cost was incorporated and utilized into DEK’s modeling used in the instant IRP.

- c. Provide an estimate for when the SCR upgrade would have to be completed, and describe the nature of the work that would be involved.
 - d. Explain whether the potential SCR upgrade could affect the projected retirement date of East Bend, and if so how, and under what scenarios.
4. In light of the recent and on-going major price increases in natural gas, explain how much credibility should be given to any scenario based on low natural prices.
5. Regarding pricing for solar generation:
 - a. Confirm that the Biden Administration is continuing in place U.S. trade sanctions in the form of a Withhold Release Order (“WRO”) against certain China-based manufacturers of metallurgical-grade silicon (“MGS”) wafers utilized in the manufacturing of solar generation panels.²
 - b. Confirm that most solar panels today are manufactured in China utilizing MGS wafers.
 - c. Confirm that the Administration is considering expanding these sanctions to apply to other manufacturers utilizing Chinese-manufactured MGS wafers, whose facilities are located in certain other countries.
 - d. Confirm that these trade sanctions are leading to world-wide supply shortages, and further, that as a result prices for solar panels are increasing significantly.
 - e. Explain whether DEK’s price analyses pertaining to solar generation (whether company-owned or third-party owned) addressed the rising prices for solar panels, and if so: (i) where in the IRP these analyses occurred; (ii) how the price increases were taken into consideration; and (iii) whether the analyses in any manner affected any decisions regarding future portfolio choices, and if so, how.
 - f. Explain also whether DEK’s price analyses pertaining to solar generation (whether company-owned or third-party owned) included cadmium telluride solar technology (sometimes referred to as “thin film” solar cells) within its analyses, as an alternative to MGS.
 - g. Reference Figure 4.1 at IRP p. 35, wherein it is stated that, “capital costs for solar PV and battery technologies are forecast to continue to decline for ten years before beginning to increase.” Explain whether the sources for the solar PV capital costs took into consideration the current U.S. Government trade dispute with China referenced in the prior subparts of the instant question.
6. Confirm that in Figure 4.1 at IRP p. 35, the typical solar PV (single-axis tracking) capacity factor identified in the IRP is 24%.

² See, e.g. <https://www.cnn.com/2021/06/24/politics/solar-materials-china-forced-labor/index.html> ; and the SEIA/Wood Mackenzie Power & Renewables U.S. Solar Market Insight,™ “Solar Market Insight Report 2021 Q3,” accessible at: <https://www.seia.org/research-resources/solar-market-insight-report-2021-q3>

- a. Provide the solar PV capacity factor DEK anticipates receiving from any company-owned solar facilities, or purchased power agreements (PPAs) from non-owned solar facilities located within or near to the Commonwealth of Kentucky.
7. Provide a discussion regarding what treatment DEK provided to the issue of Renewable Energy Credits (RECs) in the instant IRP. Include in your discussion, at a minimum: (i) how RECs were incorporated into the IRP's price analyses and projections; (ii) whether the full value of RECs will inure to the benefit of ratepayers or shareholders, or whether DEK anticipates a sharing of RECs between both ratepayers and shareholders; and (iii) whether DEK's treatment of RECs will be identical for both company self-build / self-owned projects, or renewable energy PPAs.
 8. Provide a discussion regarding the measures DEK will take to protect ratepayers and landowners from environmental liabilities arising from the decommissioning of solar facilities. Include in your discussion the following:
 - a. Confirm that the average projected life span of a solar PV system is 20 years.
 - b. Which parties (e.g., ratepayers, taxpayers, shareholders, project owners, landowners) will be responsible for paying costs of environmental contingencies and tail liabilities in the case of both company-owned facilities, and solar generation procured via PPAs.
 - c. Explain whether any parties involved in solar developments are required to maintain sureties for decommissioning costs, and if so: (i) the amounts of such sureties; (ii) for how long a period of time, including whether the sureties extend beyond the projected lifespan of a project to cover tail liabilities.
 - d. Explain what will happen to solar panels once a facility is decommissioned, including whether panels will be recycled, or placed into landfills. If the latter, explain if the landfills will be located in Kentucky.
 - e. Provide the average cost to both recycle a solar panel, and to dispose of it in a landfill. Explain what party(ies) will pay for those costs, and whether those costs are factored into DEK's cost estimates for the price of solar power utilized in the instant IRP.
 - f. How DEK will factor and compute terminal net salvage into costs for solar generation facilities, and whether such costs are included in DEK's cost estimates utilized in the instant IRP.
 - g. Provide the average number of acres needed to generate 1 MW of solar-PV generated power.
 - h. The ramifications of decreased vegetation growth on land with solar PV panels, including decreased carbon sink potential, water runoff, and land erosion and subsidence.
 9. Confirm that in Figure 4.1 at IRP p. 35, the typical capacity factor for wind generation is identified as 18%.

- a. Provide the wind capacity factor DEK anticipates to receive from any company-owned wind generation facilities, or PPAs from non-owned wind generation facilities located within or near to the Commonwealth of Kentucky.
 - b. Provide the average wind capacity factor in: (i) Kentucky; (ii) northeast Kentucky, if known; (iii) DEK's service territory, if known; (iv) DEO's service territory; (v) DEI's service territory; and (vi) the PJM footprint.
10. Reference IRP Executive Summary, p. 8, wherein the Company states that its future generation projects will exhibit: “. . . a preference for siting resources within the Duke Energy Kentucky service territory, understanding, however, that other locations may be appropriate.” Regarding DEK's projected purchases of wind power, confirm that based on data from the National Renewable Energy Laboratory, onshore capacity factor in most eastern states is below 30%.³ Confirm further that:
- a. Only two small areas of Kentucky are capable of supporting wind generation at capacity factors in the range of 25% - 30%.⁴
 - b. As of 2019, only one wind generation facility was located anywhere near Kentucky, in this case a 27 MW facility located near the Kentucky-Tennessee border, having a 16.1% capacity factor.⁵
 - c. The next closest facility was located in central West Virginia, a 100 MW facility with a 26.2% capacity factor.⁶
 - d. According to the U.S. Energy Information Administration, onshore wind generation will remain economically unattractive until 2040,⁷ and will remain miniscule for the Southeast region (which includes Kentucky) through 2050.⁸
11. Provide the average lifespan of a wind generation turbine.
12. Provide a discussion regarding the measures DEK will take to protect ratepayers and landowners from environmental liabilities arising from the decommissioning of wind generation facilities. Include in your discussion the following:
- a. What parties (e.g., ratepayers, taxpayers, shareholders, project owners, landowners) will be responsible for paying costs of environmental contingencies and/or other tail liabilities in the case of both company-owned facilities, and wind generation procured via PPAs.

³ See, “Development of Eastern Regional Wind Resource and Wind Plant Output Datasets,” National Renewable Energy Laboratory, Subcontract Report NREL/SR-550-46764 (Dec. 2009), p. 14, accessible at: <https://www.nrel.gov/docs/fy10osti/46764.pdf>. Moreover, for capacity planning purposes, PJM ascribes wind resources a capacity credit of only 12.3% of nameplate. IRP, p. 124 (citing PJM “Effective Load Carrying Capability Analysis for Wind and Solar Resources,” Feb. 7, 2019).

⁴ Id. at p. 16.

⁵ “U.S. Wind Energy Performance (Capacity Factors) in 2019, <https://emp.lbl.gov/wind-power-performance>.

⁶ Id.

⁷ USEIA, “Annual Energy Outlook 2020,” p. 39, slide 77 (Jan. 29, 2020), accessible at: <https://www.eia.gov/outlooks/aeo/pdf/aeo2020.pdf>

⁸ Id. at p. 40, slide 79.

- b. Explain whether any parties involved in wind generation developments are required to maintain sureties for decommissioning costs, and if so: (i) the amounts of such sureties; (ii) for how long a period of time, including whether the sureties extend beyond the projected lifespan of a project to cover tail liabilities.
 - c. Explain what will happen to wind turbine blades, and the actual wind turbines themselves once a facility is decommissioned, including whether blades will be recycled, or placed into landfills. If the latter, explain if the landfills will be located in Kentucky.
 - d. Provide the average cost to both recycle a wind turbine blade, and to dispose of it in a landfill. Explain which party(ies) will pay for those costs, and whether those costs are factored into DEK's cost estimates for the price of solar power, and how those costs are factored into base rates.
 - e. How DEK will factor and compute terminal net salvage into costs for wind generation facilities.
 - f. Provide the average number of acres needed to generate 1 MW of wind-generated power.
 - g. The ramifications of migratory bird deaths, including which parties will pay the costs of any fines levied by state or federal authorities for such deaths. If ratepayers are responsible for paying the costs of any such fines, explain how these costs are factored into both base rates, and costs for wind power utilized in the instant IRP.
13. Reference Figure 1.2. Confirm that due to the projected retirement of the East Bend coal plant in 2035, the Woodsdale CT units will be used on a more frequent basis.
- a. If so confirmed, confirm further whether such increased usage will reduce the remaining useful lives of the Woodsdale units, and if so, by how much.
 - b. Discuss whether the usage of the Woodsdale units by 2035 would become baseload, intermediate, or whether they would continue to operate as peaking units.
 - c. Provide the current projected retirement date of the Woodsdale units.
14. Reference IRP Figure 1.4 at p. 6. Confirm that based on the DEK Preferred IRP plan as depicted in Figure 1.2 ("Summary of the 2021 DEK IRP"), in the time period from late 2022 to 2024, the projected additions of solar, storage and wind capacity will cause DEK's customer rates to grow from an initial decrease of -1% in 2022 to an increase of +3% by 2024, equating to a growth rate of 400%. Answer the following subparts assuming the scenario depicted Figure 1.2 is eventually implemented:
- a. If so confirmed, provide all studies examining projected elasticities of demand on the DEK system over the same time frames.

- b. Confirm further that the rate increases graphically depicted in Figure 1.4 for the DEK Preferred Plan will be in addition to other factors causing rates to increase (i.e., O&M, etc.).
 - c. Provide a detailed discussion providing all reasons why DEK believes that under the DEK Preferred Plan the growth rate in rates will decrease from approximately +3% in 2024 to approximately 0% by 2025.
 - d. Explain whether DEK has shared this information with: (i) the Governor's Office; (ii) regional chambers of commerce; (iii) Northern Kentucky Community Action Commission; and (iv) the Kentucky Industrial Utility Customers (KIUC).
 - e. Discuss whether Duke Energy, Ohio (DEO), and/or Duke Energy, Indiana (DEI) are projected to experience similar rate increases.
 - f. Provide all studies examining elasticities of demand on the DEO and DEI systems over the same time frames.
 - g. Explain whether Duke Energy Midwest has examined and/or studied the concept of sharing generation sources / facilities among the three operating companies. If so, provide all studies regarding same.
 - h. Explain how the projected growth rate in DEK's rates of 400% will comport with the principle of gradualism.
 - i. Provide a discussion regarding any and all transmission system improvements DEK would have to undertake in order to wheel the renewable generation output depicted in the IRP into its service territory. Include in your discussion whether the costs of such transmission improvements have been included in the cost analyses utilized in the current IRP, and if so, how and where they were included.
 - j. Provide a discussion regarding any and all transmission system constraints DEK would encounter in order to wheel the renewable generation sources depicted in the IRP into its service territory. Include in your discussion whether the costs of such transmission constraints have been included in the cost analyses utilized in the current IRP, and if so, how and where they were included.
 - k. Provide a discussion regarding any and all transmission interconnections DEK would have to undertake in order to wheel the renewable generation sources depicted in the IRP into its service territory. Include in your discussion whether the costs of such transmission constraints have been included in the cost analyses utilized in the current IRP, and if so, how and where they were included.
15. Reference IRP Figure 1.4 at p. 6. Confirm that based on the "Change in Policy Portfolio" scenario as depicted in Figure 1.3, the projected additions to solar, storage and wind capacity are much more substantial than the DEK Preferred Plan, as depicted in Figure 1.2.

Answer the following subparts assuming the scenario depicted Figure 1.3 is eventually implemented:

- a. Confirm also that in the time period from late 2023 to 2024, the projected additions to solar, storage and wind capacity will cause DEK's customer rates to grow from an initial increase of approximately 0.5% in 2022 to approximately 5.5% by 2024, equating to a growth rate of 1,000%.
- b. Provide a detailed discussion providing all reasons why DEK believes that under the "Change in Policy Portfolio," the growth rate in rates will decrease from approximately +5.5% in 2024 to approximately +2% by 2025.
- c. Provide all studies examining projected elasticities of demand on the DEK system over the same time frames under this scenario.
- d. Confirm further that the rate increases graphically depicted in Figure 1.4 for the "Change in Policy Portfolio" will be in addition to other factors causing rates to increase (i.e., O&M, etc.).
- e. Explain whether DEK has shared this information with: (i) the Governor's Office; (ii) regional chambers of commerce; (iii) Northern Kentucky Community Action Commission; and (iv) the Kentucky Industrial Utility Customers (KIUC).
- f. Discuss whether Duke Energy, Ohio (DEO), and/or Duke Energy, Indiana (DEI) are projected to experience similar rate increases under this scenario (or a similar scenario).
- g. Provide all studies examining elasticities of demand on the DEO and DEI systems over the same time frames.
- h. Explain how the projected growth rate in DEK's rates of 1,000% will comport with the principle of gradualism.
- i. Provide a discussion regarding any and all transmission system improvements DEK would have to undertake in order to wheel the renewable generation output depicted in the IRP into its service territory. Include in your discussion whether the costs of such transmission improvements have been included in the cost analyses utilized in the current IRP, and if so, how and where they were included.
- j. Provide a discussion regarding any and all transmission system constraints DEK would encounter in order to wheel the renewable generation sources depicted in the IRP into its service territory. Include in your discussion whether the costs of such transmission constraints have been included in the cost analyses utilized in the current IRP, and if so, how and where they were included.
- k. Provide a discussion regarding any and all transmission interconnections DEK would have to undertake in order to wheel the renewable generation sources depicted in the IRP into its service territory. Include in your discussion whether the costs of such transmission constraints have been included in the cost

analyses utilized in the current IRP, and if so, how and where they were included.

16. Explain whether DEK's IRP modeled purchases from the PJM market, and if so: (i) how the modeling was conducted; and (ii) where in the IRP market purchases were analyzed.
17. Regarding DEK's projected purchases of wind power under either DEK's Preferred Plan (Fig. 1.2 in Executive Summary), or the Change in Policy Portfolio (Fig. 1.3 in Executive Summary), explain why DEK's wind purchases grow over the planning period in contrast with the PJM Capacity and Generation Forecast scenarios depicted in Fig. 3.3 through 3.7 at IRP pp. 21-30, in which it appears that in most of these scenarios, the percentage of PJM's on-shore wind capacity remains relatively static through the same period.
18. Reference IRP Executive Summary, Part. B., "Three-Year Implementation Plan," paragraph 2, in which it is stated:

"The three-year implementation plan also must make provision for increasing interest on the part of existing and prospective customers for cleaner forms of power. Indeed, customers continue to explore partnerships with the Company through which sustainability goals are achieved in a cost-effective manner that benefits the entire Duke Energy Kentucky system."

- a. Explain whether DEK has considered a tariff substantially similar to that of Kentucky Utilities' Tariff GT (Green Tariff), Option 2 (Business Solar) and/or Option 3 (Renewable Power Agreement).^{9,10}

19. Reference IRP Executive Summary, Part. B., "Three-Year Implementation Plan," paragraph 2, in which DEK states it will continue to operate within PJM as a fixed resource requirement (FRR) entity. Explain how frequently DEK evaluates switching to participating in PJM on an RPM basis. Provide the last such study in which DEK and/or DEK/DEO evaluated that option.
20. Reference the article¹¹ in the footnote below, discussing a letter from American Electric Power's Chairman, President and CEO Nick Akins to Congress and other utilities, in which he expresses concerns that the Biden Administration's climate proposals would force utilities to develop clean energy "too rapidly," and would "adversely impact the reliability and resilience of the electric grid."

⁹ Accessible at: <https://psc.ky.gov/tariffs/Electric/Kentucky%20Utilities%20Company/Tariff.pdf>

¹⁰ See Case No. 2020-00016, *In Re: Electronic Application Of Louisville Gas And Electric Company And Kentucky Utilities Company For Approval Of A Solar Power Contract And Two Renewable Power Agreements To Satisfy Customer Requests For A Renewable Energy Source Under Green Tariff Option #3*.

¹¹ https://www.eenews.net/articles/major-utility-questions-bidens-signature-climate-plan/?utm_source=Energy+News+Network+daily+email+digests&utm_campaign=2e2bb87193-EMAIL_CAMPAIGN_2020_05_11_11_46_COPY_01&utm_medium=email&utm_term=0_724b1f01f5-2e2bb87193-89280531

- a. Discuss whether DEK has any reliability / resilience concerns arising from a rapid adoption of renewable energy, especially with regard to DEK's stated goal in this IRP of "[p]rovid[ing] adequate, efficient, reasonable service that is economic in an uncertain environment."¹²
 - b. Discuss how DEK will ensure that Kentucky ratepayers do not suffer the same rolling blackouts as California ratepayers because of California's increasing reliance on renewable sources, and decreasing reliance on fossil fuel generated energy.
 - c. Discuss what resources DEK will utilize to replace renewable energy sources that fail to function during routinely-occurring weather events (e.g., wind not blowing, cloudy days, solar panels covered by snow and ice). Confirm also that Europe, which is heavily dependent on renewable resources, is undergoing an energy crisis caused in part by non-functioning wind generation¹³ and high gas prices, which is causing some businesses to close and leading some nations to restart coal-fired plants.¹⁴
 - d. Provide a discussion regarding how DEK will ensure that an over-reliance on renewables will not drive industry and other businesses out of its service territory.
21. Reference the IRP, p. 13, 5., "Resource Options," wherein DEK states that when considering supply-side resources for inclusion into the Company's portfolio, DEK considers the following factors: ". . . technical feasibility, commercial availability, fuel availability and price, useful life or length of contract, construction or implementation lead time, capital cost, operations and maintenance (O&M) cost, reliability, and environmental impacts." Explain whether there is any rank-order or other prioritization of these factors.
- a. Explain what priority, if any, is given to reliability.
22. In the event that DEK decides to make its residential Peak Time Rebate program a permanent tariffed offering, explain whether the Company will: (i) analyze the program as a resource option; and (ii) consider expanding the program to more residential customers.
23. Reference the IRP at p. 42. Confirm that DEK's portfolio optimized with carbon regulation and high gas prices triggers several different resource types – including solar, wind, gas generation and a portion of a small modular nuclear reactor.
24. Explain whether DEK has conducted any analyses / studies regarding the potential for enhanced energy efficiency, demand side management (DSM) and/or demand response

¹² IRP, p. 10.

¹³ <https://www.wsj.com/articles/energy-prices-in-europe-hit-records-after-wind-stops-blowing-11631528258>

¹⁴ See, e.g. <https://www.wsj.com/articles/surging-energy-prices-close-u-k-factories-another-bottleneck-in-a-world-full-of-them-11631792586>

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(DR) programs to help the Company achieve any potential mandated carbon emissions reductions, either in tandem with or in lieu of the Company's current plans to adopt renewable energy resources on the scale identified in the instant IRP. Include in your response:

- a. the potential for dynamic line ratings on the DEOK transmission system, conservation voltage reduction and any other supply-side energy efficiency measures the Company may be examining or of which it is generally aware; and
- b. any cost-benefit analyses regarding the potential benefits and costs for DSM / DR programs to achieve carbon reductions, as opposed to the costs/benefits of procuring additional renewable energy supply-side resources.