COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

DUKE ENERGY KENTUCKY, INC.'S INTEGRATED RESOURCE PLAN	)))	Case No. 2018-00195

PETITION OF DUKE ENERGY KENTUCKY, INC. FOR CONFIDENTIAL TREATMENT OF CERTAIN RESPONSES TO COMMISSION STAFF'S FIRST REQUEST FOR INFORMATION AND TO THE KENTUCKY ATTORNEY GENERAL'S OFFICE'S FIRST REQUEST FOR INFORMATION

Duke Energy Kentucky, Inc. (Duke Energy Kentucky or Company), pursuant to 807 KAR 5:001, Section 13, respectfully requests the Kentucky Public Service Commission (Commission) to classify and protect certain information provided by the Company in its Responses to Commission Staff's (Staff) First Request for Information issued on January 28, 2019 and the Kentucky Attorney General's (AG) Office's First Request for Information issued on February 4, 2019. Specifically, the Company requests confidential treatment for responses to Staff's Information Request Nos. 7, 10, and 12, and the AG's Information Request No. 17. The information that Duke Energy Kentucky seeks confidential treatment on generally includes: (1) information related to operations and management (O&M) costs, projected fuel and environmental compliance forecasted costs, power market prices, and projected capacity and resource alternative capital costs; (3) resource evaluations; and (4) third party owned and licensed modeling tools.

The public disclosure of the information described would place Duke Energy Kentucky at a commercial disadvantage as it negotiates contracts with various suppliers and

vendors and could potentially harm Duke Energy Kentucky's competitive position in the marketplace, to the detriment of Duke Energy Kentucky and its customers.

In support of this Petition, Duke Energy Kentucky states:

1. The Kentucky Open Records Act exempts from disclosure certain commercial information. KRS 61.878 (1)(c). To qualify for this exemption and, therefore, maintain the confidentiality of the information, a party must establish that disclosure of the commercial information would permit an unfair advantage to competitors of that party. Public disclosure of the information identified herein would, in fact, prompt such a result for the reasons set forth below.

2. The information provided in responses to Staff's Information Request Nos. 7 and 12 and AG's Information Request No. 17 include power production costs (projected costs of fuel and various compliance and other O&M expenses, capital costs, power market prices, and projected capacity cost), historic and projected forced outage rates and power production costs, and planning reserve margins, respectively, that Duke Energy Kentucky wishes to protect from public disclosure. This information was developed internally by Duke Energy Kentucky personnel, is not on file with any public agency, and is not available from any commercial or other source outside Duke Energy Kentucky. The aforementioned information is distributed within Duke Energy Kentucky only to those employees who must have access for business reasons. If publicly disclosed, this information setting forth Duke Energy Kentucky's costs of operation, expected need for fuel and allowances, forced outage rates, and projected capacity reserves could give competitors an advantage in under valuing the Company's generation through market manipulation. Similarly, disclosure would afford an undue advantage to Duke Energy Kentucky's vendors and suppliers as they would enjoy

an obvious advantage in any contractual negotiations to the extent they could calculate Duke Energy Kentucky's requirements and what Duke Energy Kentucky anticipates those requirements to cost. Finally, public disclosure of this information, particularly as it relates to supply-side alternatives, would reveal the business model Duke Energy Kentucky uses - the procedure it follows and the factors and inputs it considers - in evaluating the economic viability of various generation related projects, and future capacity needs. Public disclosure would give Duke Energy Kentucky's contractors, vendors and competitor's access to Duke Energy Kentucky's cost and operational parameters, as well as insight into its contracting practices. Such access would impair Duke Energy Kentucky's ability to negotiate with prospective contractors and vendors, and could harm Duke Energy Kentucky's competitive position in the power market, ultimately affecting the costs to serve customers.

3. Duke Energy Kentucky requests confidential protections for certain third-party data contained in response to Staff's Information Request No. 10. In developing the 2018 IRP, Duke Energy Kentucky used certain confidential and proprietary data consisting of confidential information belonging to third parties who take reasonable steps to protect their confidential information, such as only releasing such information subject to confidentiality agreements. Duke Energy Kentucky used forecasts of various commodities and inputs such as power market data and fuel price forecasts (coal prices and gas prices) developed by independent third parties, EIA, Burns & McDonnell, and Navigant, subject to confidentiality restrictions. Burns and McDonnell provided operating specifications and costs for potential future generating units, and the capital cost data was derived from data obtained from Navigant and Burns & McDonnell. Duke Energy Kentucky is contractually bound to maintain such information confidential. Moreover, this information is deserving of protection

to protect Duke Energy Kentucky's customers. If future vendors or other suppliers such as allowance brokers or equipment vendors knew Duke Energy Kentucky's estimated valuation for various supply-side resources, by resource type, or otherwise, such brokers or vendors would have an unfair advantage in negotiating future equipment sales, to the detriment of Duke Energy Kentucky and its customers. Furthermore, if competitors of Duke Energy Kentucky knew such forecasts, they could have an advantage in competing for new business against Duke Energy Kentucky.

4. Duke Energy Kentucky does not object to limited disclosure of the confidential information described herein, pursuant to an acceptable protective agreement, with the Attorney General or other intervenors with a legitimate interest in reviewing the same for the purpose of participating in this case.

5. This information was, and remains, integral to Duke Energy Kentucky's effective execution of business decisions. And such information is generally regarded as confidential or proprietary. Indeed, as the Kentucky Supreme Court has found, "information concerning the inner workings of a corporation is 'generally accepted as confidential or proprietary.'" *Hoy v. Kentucky Industrial Revitalization Authority*, Ky., 904 S.W.2d 766, 768 (Ky. 1995).

6. In accordance with the provisions of 807 KAR 5:001, Section 13(3), the Company is filing one copy of the Confidential Information separately under seal, and one copy without the confidential information included.

7. Duke Energy Kentucky respectfully requests that the Confidential Information, be withheld from public disclosure for a period of ten years. This will assure that the Confidential Information – if disclosed after that time – will no longer be

commercially sensitive so as to likely impair the interests of the Company or its customers if publicly disclosed.

8. To the extent the Confidential information becomes generally available to the public, whether through filings required by other agencies or otherwise, Duke Energy Kentucky will notify the Commission and have its confidential status removed pursuant to 807 KAR 5:001 Section 13(10)(a).

WHEREFORE, Duke Energy Kentucky, Inc. respectfully requests the Commission classify and protect as confidential the specific information described herein.

Respectfully submitted,

DUKE ENERGY KENTUCKY, INC.

Rocco O. D'Ascenzo (92796)
Deputy General Counsel
Duke Energy Business Services LLC
139 East Fourth Street, 1303 Main
Cincinnati, Ohio 45201-0960
Phone: (513) 287-4320
Fax: (513) 287-4385
E-mail: rocco.d'ascenzo@duke-energy.com
Counsel for Duke Energy Kentucky, Inc.

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing filing was served on the following via U.S. Mail, first class, postage prepaid, this 25th day of February 2019:

Rebecca W. Goodman
The Office of the Attorney General
Utility Intervention and Rate Division
700 Capital Avenue, Suite 20
Frankfort, Kentucky 40601

Rocco D'Ascenzo

KYPSC CASE NO. 2018-00195
TABLE OF CONTENTS

VERIFICATION

STATE OF OHIO)
) **SS:**
COUNTY OF HAMILTON)

The undersigned, Michael Geers, Manager Environmental Services, 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.

J. Michael Geers, Affiant

Subscribed and sworn to before me by J. Michael Geers, on this 22nd day of February, 2019.

NOTARY PUBLIC

My Commission Expires:

NOTARIAL SEAL
STATE OF OHIO

RUTH M. LOCCISANO
Notary Public, State of Ohio
My Commission Expires 06-18-2022

VERIFICATION

STATE OF OHIO)
) **SS:**
COUNTY OF HAMILTON)

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 18th day of February, 2019.

NOTARY PUBLIC

My Commission Expires: July 6, 2022

E. MINNA ROLFES-ADKINS
Notary Public, State of Ohio
My Commission Expires
July 6, 2022

VERIFICATION

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

The undersigned, Scott Park, Director IRP & Analytics-Midwest, 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.

Scott Park, Affiant

Subscribed and sworn to before me by Scott Park on this 18th day of Feb, 2019.

NOTARY PUBLIC

My Commission Expires: Oct. 20, 2023

VERIFICATION

STATE OF OHIO)
) **SS:**
COUNTY OF HAMILTON)

The undersigned, Tom Wiles, Director Analysis, being duly sworn, deposes and says that he has personal knowledge of the matters set forth in the data request and that it is true and correct to the best of his knowledge, information and belief.

Tom Wiles Affiant

Subscribed and sworn to before me by Tom Wiles on this 18th day of February, 2019.

NOTARY PUBLIC

My Commission Expires: July 8, 2022

NOTARY PUBLIC STATE OF OHIO

E. MINNA ROLFES-ADKINS
Notary Public, State of Ohio
My Commission Expires
July 8, 2022

VERIFICATION

STATE OF OHIO)
)
COUNTY OF HAMILTON)

SS:

The undersigned, Tammy Jett, Principal Environmental Specialist, being duly sworn, deposes and says that she 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 her knowledge, information and belief.

Tammy Jett

Tammy Jett, Affiant

Subscribed and sworn to before me by Tammy Jett on this 15th day of February 2019.

Ruth M. Loccisano

NOTARY PUBLIC

My Commission Expires: 06-18-2022

NOTARIAL SEAL
STATE OF OHIO

RUTH M. LOCCISANO
Notary Public, State of Ohio
My Commission Expires 06-18-2022

VERIFICATION

STATE OF OHIO)
) **SS:**
COUNTY OF HAMILTON)

The undersigned, Troy Wilhelm, Manager General Project Engineering, 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.

Troy Wilhelm, Affiant

Subscribed and sworn to before me by Troy Wilhelm, on this 13TH day of FEBRUARY, 2019.

NOTARIAL SEAL
STATE OF OHIO

ADELE M. FRISCH
Notary Public, State of Ohio
My Commission Expires 01-05-2024

NOTARY PUBLIC

My Commission Expires: 1/5/2024

VERIFICATION

STATE OF INDIANA)
) **SS:**
COUNTY OF HENDRICKS)

The undersigned, Richard A. Philip, Manager Products & Services, 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.

Richard A. Philip, Affiant

Subscribed and sworn to before me by Richard A. Philip on this 8 day of February, 2019.

NOTARY PUBLIC

My Commission Expires: 10/7/2022

VERIFICATION

STATE OF NORTH CAROLINA)
)
COUNTY OF MECKLENBURG)

SS:

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 7th day of February 2019.

NOTARY PUBLIC

My Commission Expires:

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

VERIFICATION

STATE OF NORTH CAROLINA)
)
COUNTY OF MECKLENBURG)

SS:

The undersigned, John D. Swez, Director of General Dispatch & Operations, Power Trading and 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 D. Swez, Affiant

Subscribed and sworn to before me by John D. Swez on this 7th day of February, 2019.

NOTARY PUBLIC

My Commission Expires:

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

VERIFICATION

STATE OF OHIO)
) **SS:**
COUNTY OF HAMILTON)

The undersigned, Andrew Ritch, Wholesale Renewable Manager IV, 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.

Andrew Ritch, Affiant

Subscribed and sworn to before me by Andrew Ritch, on this 7th day of February, 2019.

NOTARY PUBLIC

ADELE M. FRISCH
Notary Public, State of Ohio
My Commission Expires 01-05-2024

My Commission Expires: 1/5/2024

Duke Energy Kentucky
Case No. 2018-00195
Attorney General's First Set Data Requests
Date Received: February 4, 2019

AG-DR-01-001

REQUEST:

Provide the projected remaining lifespan of the Woodsdale CT units by unit, and of the East Bend facility.

RESPONSE:

Woodsdale and East Bend are expected to run throughout the IRP planning period

PERSON RESPONSIBLE: Scott Park

AG-DR-01-002

REQUEST:

As of the time of the filing of the instant IRP, does DEK foresee the need for any significant capital expenditures to achieve compliance with any state and/or federal environmental regulations at Woodsdale, East Bend, or both stations? If so, explain.

a. If the response is "yes," state whether any of the modelling presented in the current IRP should be re-modelled in light of the need for additional environmental capex.

RESPONSE:

At this time, Duke Energy Kentucky does not foresee the need for any significant capital expenditures in the water and waste areas at Woodsdale or East Bend to achieve compliance with any state and/or federal environmental regulations related to the water or waste areas which have not already been accounted for in prior approved filings (ESM and approved CPCNs). Duke Energy Kentucky will eventually need to construct additional cells for its West Landfill.

On August 21, 2018, the U.S. Environmental Protection Agency proposed the Affordable Clean Energy (ACE) rule which would establish emission guidelines for states to develop their own plans to address greenhouse gas emissions from existing coal-fired power plants. The ACE rule has a list of "candidate technologies" states can use when developing their plans. These technologies would focus on efficiency improvements and States would determine which of these technologies are appropriate for each plant. The

ACE rule would replace the 2015 Clean Power Plan, which EPA has proposed to repeal because it exceeded EPA's authority. The Clean Power Plan was stayed by the U.S. Supreme Court and has never gone into effect. Duke Energy Kentucky anticipates that EPA may issue a final rule in 2019. The State of Kentucky would then develop its own plan, and Duke Energy Kentucky cannot at this time project what requirements, if any would apply to East Bend Station.

East Bend is in compliance with MATS and other air requirements. As a result, Duke Energy Kentucky does not anticipate any other any potentially significant capital expenditures to address air related requirements.

PERSON RESPONSIBLE: Tammy Jett
Michael Geers

AG-DR-01-003

REQUEST:

Reference the application, p. 10, wherein DEK, citing an "increasing customer preference for renewable energy," includes new solar and storage resources as early as 2019.

a. Explain whether DEK plans to self-build and operate its own solar and/or storage facilities, or if it plans to issue an RFP for the purchase of solar-generated power from existing non-owned resources.

b. If DEK chooses to issue an RFP, explain whether DEK will consider purchasing solar-generated power and/or storage from resources owned or utilized by affiliates Duke Energy (Indiana) and/or Duke Energy (Ohio)["DEO"], if doing so would represent the least-cost solution.

c. Explain to what extent the IRP takes into consideration any additional transmission costs that will or may be associated with bringing on-line any additional solar and/or storage resources.

d. Explain whether the new solar and/or storage facilities would be placed into the general rate base, or whether some or all of the anticipated new resources could be procured through green contracts purchased by individual customers.

e. Update figure 1.1 with DEK's plan following the Commission's investigation of DEK's DSM programs.

f. State whether DEK has offered demand response programs such as air conditioning cycling devices. If not, why not? If so, identify which DSM/DR programs these are included under and briefly explain each.

RESPONSE:

a. Duke Energy Kentucky does not have specific plans to develop these projects at the present time. Without these plans, it is difficult to determine with certainty whether these projects will be self-owned, or owned by third parties.

b. We have yet to determine whether Duke Energy affiliate companies would be permitted to participate in such an RFP process, if it were to occur. Hypothetically speaking, if permitted, and the hids from the affiliate companies represented the least-cost option for Duke Energy Kentucky customers, then these would likely be given serious consideration.

c. Transmission costs associated with hringing any new resource online will vary considerably by project and location, marking them difficult to forecast in the general terms required for the IRP. For IRP purposes, we include $10 million in the cost of new projects connected at 345 kV to account for new transmission infrastructure. In addition, we add $100/kW (2018$) to the cost of new solar facilities and $60kW to the cost of new battery storage systems to account for interconnection costs.

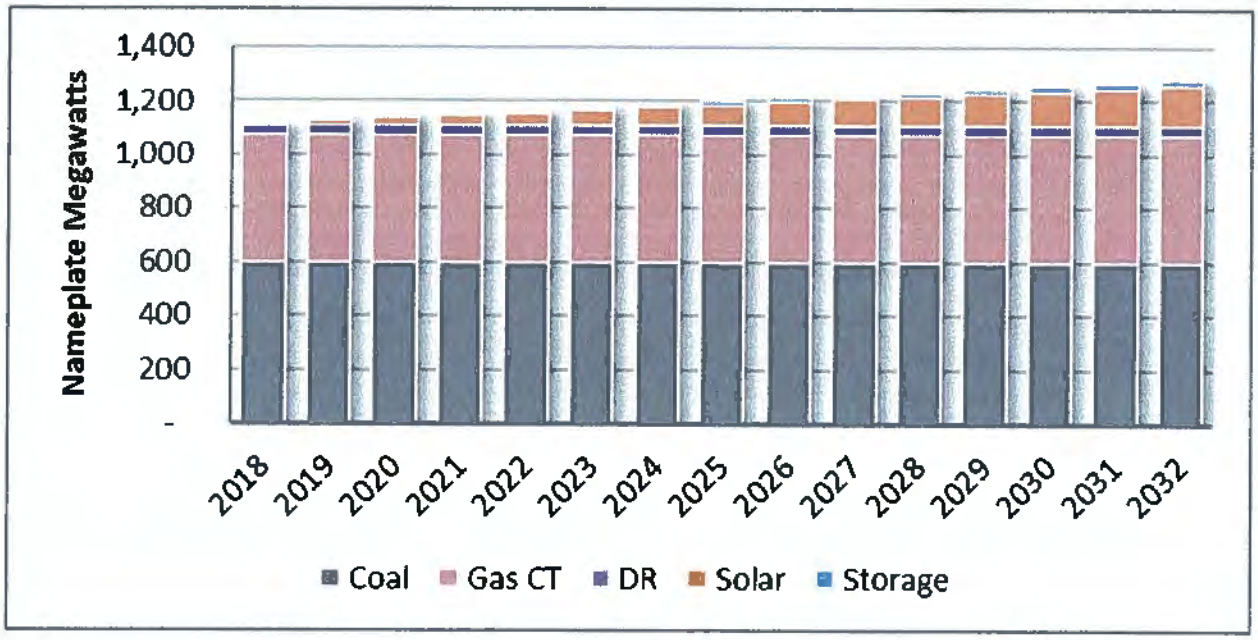
d. See response to a.

e. Please see AG-DR-01-003(e) Attachment.

f. Please see AG-DR-01-003(f) Attachment.

PERSON RESPONSIBLE: Andrew Ritch - a, b, d
Scott Park - c
Tom Wiles/Scott Park - e
Rich Philip - f

Figure 1.1: Duke Energy Kentucky 2018 Integrated Resource Plan



Residential Direct Load Control - Power Manager® Program

The purpose of the Power Manager® program is to reduce demand by controlling residential air conditioning usage during periods of peak demand, high wholesale price conditions and/or generation emergency conditions during the summer months. It is available to residential customers with central air conditioning. Duke Energy Kentucky attaches a load control device to the outdoor unit of a customer's air conditioner. This enables Duke Energy Kentucky to cycle the customer's air conditioner off and on under appropriate conditions.

Customers selecting the option that moderately cycles their air conditioner, receive a $25 credit at installation. Customers selecting the longer cycling option, receive a $35 credit at installation.

Customers also receive annual credits during the months of May - September depending on the program they signed-up for. Customers that signed-up for the moderate control option receives an annual, minimal event credit of $2.40 per month for each year they are on the program and customers that signed-up for the longer control option receive an annual event credit of $3.60 per month each year they are on the program.

Duke Energy Kentucky continues to use load control devices manufactured by Eaton's Cooper Power Systems for new installations and replacement of existing load control devices. The load control devices have built-in safe guards to prevent the "short cycling" of the air-conditioning system. The air-conditioning system will always run the minimum amount of time required by the manufacturer. The cycling simply causes the air-conditioning system to run less, which is no different than what it does on milder days. Additionally, the indoor fan will continue to run and circulate air during the cycling event.

Power Manager® for Business

Power Manager® for Business is a non-residential program that provides business customers with the opportunity to participate in demand response, earn incentives and realize optional energy efficiency benefits. This program is designed as a flexible offer that provides small-to-medium size business customers with options on device types as well as level of demand response participation. Customers first select the type of device from two available options: thermostat or switch.

Customers who opt for the thermostat will have the ability to manage their thermostat remotely via computer, tablet or smartphone. The thermostat comes with presets designed to help the business manager/owner set an efficient schedule that works for their business. This realizes additional benefits in the form of EE impacts/savings. Customers then select one of three levels of summer demand response (DR) participation, and earn an incentive based upon that selection.

Both thermostat and switch customers have the same DR participation options, and receive the same DR incentives.

Power Manager® for Business will be offered to business customers with qualifying air conditioning systems, summer weekday energy usage and broadband/Wi-Fi internet. Customers must agree to have the control device installed on their A/C system and to allow Duke Energy Kentucky to control their A/C system during Power Manager® events. Qualifying air conditioning systems include:

- Individual split air conditioning systems;
- Rooftop Units; and,
- Packaged terminal air conditioners (PTACs).

Customers participating in this Program receive an incentive based on upon the level of demand

response cycling they select:

- 30% cycling: $50 per DR summer season (per device);
- 50% cycling: $85 per DR summer season (per device); or
- 75% cycling: $135 per DR summer season (per device).

The incentive will be paid out after installation of the device(s) and then annually. Devices are installed at the customer premise at no charge to the customer.

During the 2017-18 Program year, the Program enrolled 40 accounts and completed installation at 16 of those locations with 25 devices. The 25 devices include 18 thermostats and 7 switches. Due to the minimal savings from the program, the program will not continue beyond 2018.

Peak Load Manager (Rider PLM) - PowerShare® Program

PowerShare® is the brand name given to Duke Energy Kentucky's Peak Load Management Program (Rider PLM, Peak Load Management Program KY.P.S.C. Electric No. 2, Sheet No. 77). Rider PLM was approved pursuant as part of the settlement agreement in Case No. 2006-00172. In the Commission's Order in Case No. 2006-00426, approval was given to include the PowerShare® program within the DSM programs. The PLM program is voluntary and offers customers the opportunity to reduce their electric costs by managing their electric usage during the Company's peak load periods. Customers and the Company will enter into a service agreement under Rider PLM, specifying the terms and conditions under which the customer agrees to reduce usage. There are two product options offered for PowerShare® - CallOption® and QuoteOption®:

- CallOption®:
    - A customer served under a CallOption® product agrees, upon notification by

the Company, to reduce its demand;

- Each time the Company exercises its option under the agreement, the Company will provide the customer a credit for the energy reduced;
- For the 2017/2018 program year, there was one type of event;
  - Emergency events are implemented due to reliability concerns. Participants are required to curtail during emergency events.
- In addition to the energy credit, customers on the CallOption® will receive an option premium credit;
- For the 2017/18 PowerShare® programs associated with the fiscal year of this filing, there were three enrollment choices for customers relative to CallOption. The first choice, "Summer Only", required participants to be able to curtail during the months of June thru September 2017, with a maximum event length of 6 hours and maximum number of curtailments of 10 during the program year. The second choice, "Extended Summer", required participants to be able to curtail during the months of June through October 2017 plus May 2018, with a maximum event length of 10 hours and no maximum number of curtailment events. The third choice, "Annual", requires participants to be able to curtail during the full contract term of June 2017 through May 2018, with a maximum event length of 10 hours and no maximum number of curtailment events.
- Only customers able to provide a minimum of 100 kW load response qualify for CallOption®.

- QuoteOption®:

- Under the QuoteOption® products, the customer and the Company agree that when the average wholesale market price for energy during the notification period is greater than a pre-determined strike price, the Company may notify the customer of a QuoteOption® event and provide a price quote to the customer for each event hour;
- The customer will decide whether to reduce demand during the event period. If they decide to do so, the customer will notify the Company and provide an estimate of the customer's projected load reduction;
- Each time the Company exercises the option, the Company will provide the participating customer who reduces load an energy credit;
- There is no option premium for the QuoteOption® product since customer load reductions are voluntary; and
- Only customers able to provide a minimum of 100 kW load response qualify for QuoteOption®.

AG-DR-01-004

REQUEST:

Explain whether the addition of dual-fueling capability at Woodsdale will:

a. affect the PJM LMP from what it would have been without dual-fueling, and if so, how;

b. cause PJM to dispatch the units for longer or shorter run times.

RESPONSE:

a. It is possible that the PJM LMP at Woodsdale would be different if the station did not have dual fuel capability, particularly if the Duke Energy Ohio Kentucky (DEOK) load zone created a binding constraint in PJM and the Woodsdale Units set LMP as the marginal energy unit in the DEOK zone. Generators get paid the generation bus Locational Marginal Price (LMP); and load pays an aggregated load zone LMP. PJM uses LMP to price energy purchases and sales in PJM Market, price transmission congestion costs to move energy within PJM, and to price losses on the bulk power system. LMP is the sum of the three components, energy, congestion, and losses.

The System Marginal Price (SMP) is the incremental price of energy for the system, given the current dispatch, at the load weighted reference bus, the next available unit in PJM's generation stack. SMP is LMP without losses or congestion. The SMP is the same price for every bus in PJM. It is not locational. The Congestion Component (CLMP) represents the price of

congestion for binding constraints when transmission delivery limitations prevent the use of the next least-cost generator in the PJM stack and a higher cost generator closer to the load must be dispatched in order to meet local load demand. The congestion component will be zero if there are no constraints; and will vary by location if the system is constrained. The Marginal Loss Component represents the price of the percentage increase in system losses caused by an additional increase in power injection or withdrawal. Losses are generally a function of the distance between generation and load.

Without dual fuel capability, if natural gas was unavailable at Woodsdale, the units would consequently be unavailable for dispatch. With dual fuel capability, Woodsdale would be available for dispatch and could establish the local marginal unit price, impacting both the LMP paid to Woodsdale and by the load. If Woodsdale did set LMP as the marginal unit, in its absence it can be assumed that the next unit dispatched to serve DEOK load would have a higher dispatch price and consequently be costlier to load.

b. In most situations, natural gas is less costly than fuel oil. As noted above, PJM commits and de-commits units in economic sequence. If the Woodsdale units are running on natural gas, it is possible that they could be dispatched for a longer period than they would be if they were running on more expensive fuel oil. Of course, if natural gas were unavailable, without dual fuel capability the units could not be dispatched at all.

PERSON RESPONSIBLE: John Verderame

AG-DR-01-005

REQUEST:

In the event of a scenario for high costs of low-sulfur diesel fuel, explain whether any of your responses to question 4, above, would change and if so, how?

RESPONSE:

No, there would be no changes to the responses in AG-DR-01-004. The impact of extremely high prices for low-sulfur diesel could exacerbate the LMP price impact and similarly impact the relative dispatch economics of Woodsdale, potentially impacting economic run periods.

PERSON RESPONSIBLE: John Verderame

AG-DR-01-006

REQUEST:

Explain how DEK proposes to re-supply the diesel fuel it will use as its dual-fuel source for Woodsdale station.

RESPONSE:

There are two new fuel oil unloading stations at Woodsdale Station. Each unloading station is capable of unloading a typical 7,500 gallon truck in 30 minutes. The total capability of unloading is 30,000 gallons per hour with both unloading stations running at full capacity. Duke Energy Kentucky has contracted with a primary supplier for Fuel Oil who will be utilized to re-supply diesel fuel to Woodsdale Station on an as needed basis.

PERSON RESPONSIBLE: Troy Wilhelm

REQUEST:

Explain to what extent, if any, DEK has examined hydro and wind resources in lieu of or in addition to solar sources.

a. If DEK has considered such other resources, explain to what extent the IRP takes into consideration any additional transmission costs that will or may be associated with bringing such resources on-line.

b. Include in your response whether DEK, either for itself or in conjunction with other affiliates, has examined hydro power sourced from Canada.

RESPONSE:

Wind resources were included in the economic optimization modeling process (System Optimizer, described on IRP page 25). Wind resources were not selected by the model as part of the optimal resource portfolio for meeting Duke Energy Kentucky's economic and reliability criteria for serving customers (see IRP Table 4.1 for the characteristics of the representative wind facility). Hydro resources were considered, but were eliminated in the initial screening process due to the costs and challenges associated with siting new hydropower facilities in the Duke Energy Kentucky's service territory.

a. As discussed in the answer to question 7, any additional transmission cost would be project and location-specific. In addition to the $10 million capital cost adder to account for transmission, we add $50/kW to the cost of new wind facilities to account for interconnection costs.

b. Duke Energy Kentucky has not considered hydropower sourced from Canada. Relying on resources outside of the DEOK zone in PJM would expose the company to the risk of price separation between zones, potentially making resources external to the DEOK zone ineligible to meet our PJM capacity requirement.

PERSON RESPONSIBLE: Scott Park

AG-DR-01-008

REQUEST:

Confirm that DSM is a profit center for DEK.

RESPONSE:

Objection. The question is irrelevant, overbroad, and ambiguous as the term profit center has not been defined. Notwithstanding the objection, Duke Energy Kentucky's DSM program is approved by the Commission in accordance with KRS 278.285, which authorizes a mechanism to:

a. Recover the full costs of commission-approved demand-side management programs and revenues lost by implementing these programs; and,

b. Obtain incentives designed to provide financial rewards to the utility for implementing cost effective demand-side management programs.

PERSON RESPONSIBLE: As to objection – Legal
As to response – William Don Wathen Jr

AG-DR-01-009

REQUEST:

Reference the IRP, p. 11, the paragraph discussing emerging interest from new and existing customers for additional renewable energy. Discuss whether DEK will continue to analyze its resource needs in light of the Commission's least-cost resource mandates.

RESPONSE:

Least cost is scenario specific. For example, in a future with a carbon tax, the least cost plan would include more renewables and less coal generation. Conversely, in a future without a carbon tax, fewer renewables and more coal would be part of the least cost plan.

Since the future is uncertain with respect to this one variable in addition to a number of other variables, prudent planning suggests a more diverse portfolio and a measured path to achieve that. The company believes that carbon regulation is more a matter of when than if and that it would be wise to start transitioning the fleet to one with increasing amounts of renewables and storage.

This is consistent with new and existing customer preferences and can be a key factor in the decision of a company to locate facilities within the Duke Energy Kentucky service territory.

Across the range of possible futures, we believe our portfolio is consistent with least cost planning.

PERSON RESPONSIBLE: Scott Park

AG-DR-01-010

REQUEST:

Reference the IRP, p. 11, the last paragraph wherein DEK states it anticipates it will remain as an FRR entity in PJM for the foreseeable future. State whether PJM's proposed changes to the capacity performance construct have caused, or may cause DEK to change this assessment.

RESPONSE:

Duke Energy Kentucky has not modified its strategy of remaining an FRR entity for the time being. However, the proposed changes to PJM's capacity market construct could impact Duke Energy Kentucky's decision to remain an FRR entity going forward, particularly if the Company determines a need for generation additions.

As an FRR entity, Duke Energy Kentucky relies on its generation assets to meet its PJM load obligation. Pending final approval of the PJM proposals, Duke Energy Kentucky retains its ability to manage its capacity position under either the traditional FRR or proposed partial FRR constructs.

PERSON RESPONSIBLE: John Verderame

Duke Energy Kentucky
Case No. 2018-00195
Attorney General's First Set Data Requests
Date Received: February 4, 2019

AG-DR-01-011

REQUEST:

Reference the IRP, pp. 11-12, wherein DEK discusses what actions the company may take if its load obligation to PJM was to increase sharply over a short period of time.

a. State the extent to which DEK has considered pursuing actions jointly with DEO designed to address any potential increased load obligation to PJM. Provide copies of any and all studies that may have been produced in this regard.

RESPONSE:

Duke Energy Kentucky has not considered pursuing actions jointly with Duke Energy Ohio designed to address any potential increased load obligation to PJM. Duke Energy Ohio does not own generation. Affiliate transactions between Duke Energy Ohio and Duke Energy Kentucky are subject to federal restrictions.

PERSON RESPONSIBLE: John Verderame

AG-DR-01-012

REQUEST:

State to what effect the Commission's order in Case No. 2017-00427, which restored most of DEK's DSM programs, will affect this IRP, especially given that DEK references the suspension of the programs in numerous places throughout the document.

a. Reference the IRP document, p. 13, paragraph 1. Does the Company believe it should provide a third case based on the programs which the Commission has now actually approved?

RESPONSE:

a. The current generating assets in the Duke Energy Kentucky fleet remain in service for the duration of the IRP study period regardless of which of the two DSM cases were utilized in the IRP modeling. A third DSM case would have kW and kWh reduction which lie in between the two cases already modeled which implies that the third case would have no impact on the existing generating assets in the Duke Energy Kentucky fleet.

As is also discussed in the answer to question 20, the company believes it wise to start slowly adding solar and storage resources on the order of 1% of system capacity in order to better understand, integrate and operate in a changing market place. This gradual addition would occur under either of the current two DSM cases and would not be altered by the addition of a third DSM case.

PERSON RESPONSIBLE: Scott Park

AG-DR-01-013

REQUEST:

Explain whether any recent increases in commercial and/or industrial load will have any material impact on the assumptions, methodologies, or conclusions drawn in the IRP filing, and if so, describe in detail.

RESPONSE:

Recent load history is accounted for when constructing the load forecast used in the IRP, and therefore recent changes are already accounted for in the assumptions, methodologies, and conclusions drawn in the IRP filing.

PERSON RESPONSIBLE: Scott Park

AG-DR-01-014

REQUEST:

Reference the IRP document, Table B.1, "Duke Energy Kentucky Electric Customers by Major Classifications, Annual Averages."

a. Explain why the number of industrial customers steadily decreases through the period.

b. Explain the source for the assumptions used to produce this table.

RESPONSE:

a. The model for industrial customers uses manufacturing employment in the Cincinnati metro area as its main economic driver. From 2006-present, (the history to which we exposed this model) both this employment series and our number of industrial customers have been steadily decreasing. In historical data, the correlation between manufacturing employment and industrial customers is significant and positive.

b. We use a forecast series of manufacturing employment provided by our vendor—Moody's Analytics—that shows the employment trend continuing downward throughout the forecast period.

PERSON RESPONSIBLE: Scott Park

Duke Energy Kentucky
Case No. 2018-00195
Attorney General's First Set Data Requests
Date Received: February 4, 2019

AG-DR-01-015

REQUEST:

Reference the IRP document, Staff Recommendations based on the 2014 IRP, the Response to "Integration and Plan Optimization." Provide an update on the extended planned outage of East Bend 2, which is described as the longest outage in the station's history.

a. Provide an update since the date of the IRP's filing on the impact of the financial hedges.

b. Provide the date that East Bend 2 was placed back into service.

c. State whether the unit has experienced any improvements in performance since the outage, and if so provide quantifications.

RESPONSE:

a. For the 2018 East Bend planned spring outage, the impact of the financial hedges is $3,040,533 benefit to the customers.

b. The unit was placed back into service at 00:45 on June 10, 2018.

c. The Equivalent Forced Outage Rate (EFOR) for the calendar year 2018 was 5.69% which is below the units historical average EFOR for the years 2010-2018 of 7.31%. In addition to the turbine, generator, boiler, precipitator, cooling tower, and other areas of maintenance performed, as described in the 2018 IRP, the station completed the installation of a dry bottom ash management system along with other on-site water management equipment

during the outage. These systems are functioning as designed, enabling cessation of all waste and water flows to the previously existing dry bottom ash pond.

PERSON RESPONSIBLE: John Verderame - a
John Swez - b, c

AG-DR-01-016

REQUEST:

Confirm that the IRP and the methodologies used therein are the same that DEK uses to plan its system, including supply-side resources.

RESPONSE:

Duke Energy Kentucky plans it system using the same methodologies used in the IRP where we consider changes in key variables and evaluate how different portfolios perform in response to those changes. The portfolio that competes well across those potential changes drives the planning of the Duke Energy Kentucky system.

PERSON RESPONSIBLE: Scott Park

PUBLIC AG-DR-01-017

REQUEST:

Provide each unit's EFOR for each year from 2014 to present and the planning EFOR from present until 2023.

RESPONSE:

CONFIDENTIAL PROPRIETARY TRADE SECRET

Electronic 2018 Integrated Resource Plan of Duke Energy Kentucky, Inc. Case No. 2018-00195 Attorney General's Initial Data Requests 9

2014-2017 EFOR figures are actual historical data. 2018-2023 are projected based on 5-year historical EFOR in accordance with PJM guidelines.

[redacted]

PERSON RESPONSIBLE: Scott Park

Duke Energy Kentucky
Case No. 2018-00195
Attorney General's First Set Data Requests
Date Received: February 4, 2019

AG-DR-01-018

REQUEST:

Refer to page 50 of the IRP, Appendix A, Table A.2. Provide historical capacity factor for each of the units, if available since 2014.

RESPONSE:

Net Capacity Factor (NCF) By Year, 2014-2018

	East Bend 2	Woodsdale CT1	Woodsdale CT2	Woodsdale CT3	Woodsdale CT4	Woodsdale CT5	Woodsdale CT6	Woodsdale Station
2014	55.38%	0.30%	0.31%	0.29%	0.30%	0.36%	0.38%	0.32%
2015	76.73%	0.99%	1.30%	1.36%	0.69%	1.15%	0.87%	1.06%
2016	69.58%	0.64%	0.73%	0.66%	0.54%	0.62%	0.69%	0.65%
2017	81.23%	0.31%	0.24%	0.45%	0.06%	0.27%	0.28%	0.27%
2018	53.13%	2.09%	2.51%	2.63%	2.03%	2.37%	2.51%	2.36%

PERSON RESPONSIBLE: John Swez

AG-DR-01-019

REQUEST:

Refer to page 20 of the IRP wherein DEK states that its 2018 planning reserve margin is 13.7%. Provide support for and the calculation of DEK's 13.7% planning reserve margin.

RESPONSE:

Please see response to CONFIDENTIAL STAFF-DR-01-007.

PERSON RESPONSIBLE: Scott Park

AG-DR-01-020

REQUEST:

Refer to the Application, p. 11, wherein it states "The Company has included the addition of 10MW of solar and 2MW of battery storage resources in each year of the plan, starting in 2019."

a. Does DEK believe each year's 10MW of solar and 2MW of battery storage resources are exempt from CPCN requirements?

b. Provide any and all studies or assessments that indicate or prove that the annual solar and storage resources are either necessary or cost-effective.

RESPONSE:

a. Objection. Irrelevant, calls for a legal conclusion. Without waiving said objection and to the extent discoverable, the Company has not evaluated whether a CPCN is necessary for any specific solar project at this time. Such evaluation and whether a CPCN is required will depend upon numerous factors as outlined under Kentucky Law, Commission regulations, and precedent. The Commission previously determined that the Company's two solar installations that were less than 4 MWs each did not require a CPCN and qualified as an ordinary extension in the ordinary course of business.

b. Solar and storage will become increasingly important resources to the Duke Energy Kentucky system as carbon regulation seems increasingly likely.

Additionally, increasing amounts of intermittent resources in the PJM RTO will also increase the value of storage resources.

The company believes it wise to start slowly by adding solar and storage resources on the order of 1% of system capacity in order to better understand, integrate and operate in a changing market place.

As was evaluated on pages 27 and 38 of the IRP, the impact on total cost approximately a 4% increase if there is no carbon tax. Compare this to the potential increase of over 10% if there is a carbon tax at the levels the company evaluated.

The company believes that the measured adoption of solar and storage is a prudent path to follow and is in keeping with low cost planning for customers. To the extent that carbon regulation becomes more or less likely or more or less strict, the company with change its plans accordingly.

PERSON RESPONSIBLE: Legal – a.
Scott Park/Andrew Rich – b.