KyPSC Case No. 2024-00152
TABLE OF CONTENTS

VERIFICATION

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

The undersigned, John Verderame, VP Fuels & Systems Optimization, being duly sworn, deposes and says that he has personal knowledge of the matters set forth in the foregoing supplemental data requests, and that the answers contained therein are true and correct to the best of his knowledge, information and belief.

John Verderame, Affiant

Subscribed and sworn to before me by John Verderame on this 25th day of October, 2024.

NOTARY PUBLIC

My Commission Expires:

SHAMELL M WILSON
My Comm. Expires
NOTARY PUBLIC
July 06, 2026
MECKLENBURG COUNTY, NC

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

The undersigned, Ryan Trogstad, Senior Data Science Consultant, being duly sworn, deposes and says that he has personal knowledge of the matters set forth in the foregoing supplemental data requests, and that the answers contained therein are true and correct to the best of his knowledge, information and belief.

Ryan Trogstad, Affiant

Subscribed and sworn to before me by Ryan Trogstad on this 24th day of October, 2024.

LUCAS K SMITH NOTARY PUBLIC MECKLENBURG COUNTY, NC

NOTARY PUBLIC

My Commission Expires: June 5, 2029

Duke Energy Kentucky
Case No. 2024-00152
STAFF Second Set of Data Requests
Date Received: September 20, 2024

PUBLIC SUPPLEMENTAL STAFF-DR-02-001

REQUEST:

Refer to Duke Kentucky's response to Commission Staff's First Request for Information (Staff's First Request), Item 2(a).

a. Explain, in detail, the process Duke Kentucky used to calculate the East Bend dispatch cost of a basket of market coals that is optimized to derive a blended product that serves as a least-cost market dispatch coal, inclusive of coal cost, reagent costs, and transportation.

b. Provide the calculation for quicklime that resulted in a blended coal that had a #5.62 SO_2 content and a heat content of 11703 Btu/lb. Include in the response any associated work papers or sources used for the calculation.

c. Provide the derivation of the dispatch cost and the escalation from $3.83/MMBtu to $4.19/MMBtu over the model horizon. Include in the response any associated work papers or sources used for the calculation.

d. Provide the calculation for the limestone scenario that resulted in the modeled coal of #6 SO_2 product at 11782 Btu/lb. Include in the response any associated work papers or sources used for the calculation.

e. Provide the derivation of the dispatch cost escalating from $2.77/MMBtu to $2.97/MMBtu over the model horizon from the limestone scenario. Include in the response any workpapers or sources used for the calculation.

ORIGINAL RESPONSE:

CONFIDENTIAL PROPRIETARY TRADE SECRET

[redacted]

[redacted]

b. Please see STAFF-DR-02-001 Confidential Attachment 1. Optimized blend data can be found in columns J through M of the "East Bend Optimizer." Additional information on price inputs and assumptions can be seen on the "Placeholder" tab.

c. Please see STAFF-DR-02-001 Confidential Attachment 1. Optimized blend data can be found in columns J through M of the "East Bend Optimizer." Additional information on price inputs and assumptions can be seen on the "Placeholder" tab.

d. Please see STAFF-DR-02-001 Confidential Attachment 2. Optimized blend data can be found in columns J through M of the "East Bend Optimizer." Additional information on price inputs and assumptions can be seen on the "Placeholder" tab.

e. Please see STAFF-DR-02-001 Confidential Attachment 2. Optimized blend data can be found in columns J through M of the "East Bend Optimizer." Additional information on price inputs and assumptions can be seen on the "Placeholder" tab.

SUPPLEMENTAL RESPONSE:

CONFIDENTIAL PROPRIETARY TRADE SECRET

After Duke Energy Kentucky filed its Limestone Conversion CPCN Application in late July 2024, its current MEL supplier approached the Company to discuss the potential for [redacted]

The Company has updated its response to this data request as a result.

b. Please see STAFF-DR-02-001 Confidential Supplemental Attachment 1 for the optimized coal blend resulting from the lower lime commodity cost. Optimized blend data can be found in columns J through M of the "East Bend Optimizer." Additional information on price inputs and assumptions can be seen on the "Placeholder" tab.

c. Please see STAFF-DR-02-001 Confidential Supplemental Attachment 1 for the derivation and escalation of the dispatch cost resulting from the lower lime commodity cost. Optimized blend data can be found in columns J through M of the "East Bend Optimizer." Additional information on price inputs and assumptions can be seen on the "Placeholder" tab.

PERSON RESPONSIBLE: Ryan Trogstad

PUBLIC SUPPLEMENTAL STAFF-DR-02-008

REQUEST:

Refer to Duke Kentucky's response to Staff's First Request, Item 21 and refer to Application at page 6, paragraph 14. Confirm Duke Kentucky did no further analysis to support the impact the higher cost of lime-based reagent has on the unit's capacity factor and dispatch ranking. If not confirmed, provide in the response any work papers or documents supporting the estimates and cost of the lime.

ORIGINAL RESPONSE:

CONFIDENTIAL PROPRIETARY TRADE SECRET (As to Attachment only)

In August 2023 Duke Energy evaluated the Limestone Conversion project through the Encompass model. This is the same Encompass model software that is used for IRP filings. Please see STAFF-DR-02-008 Confidential Attachment.

SUPPLEMENTAL RESPONSE:

CONFIDENTIAL PROPRIETARY TRADE SECRET

After Duke Energy Kentucky filed its Limestone Conversion CPCN Application in late July 2024, its current MEL supplier approached the Company to discuss the potential for [redacted]

The Company has updated its response to this data request as a result.

As discussed in the Company's response to STAFF-DR-01-005 and the Confidential Supplemental Direct Testimony of witness Verderame, the Company has updated its original analysis to account for the proposed reduction in MEL commodity

pricing for the period 2027 through 2029. Please see STAFF-DR-01-021 Confidential Supplemental Attachment.

PERSON RESPONSIBLE: Matthew Kalamba (Original response)
John A. Verderame (Supplemental response)

PUBLIC SUPPLEMENTAL STAFF-DR-02-009

REQUEST:

Refer to Duke Kentucky's response to Staff's First Request, Item 22 and refer to the Application at page 6, paragraph 15. Provide a more detailed financial and benefit/cost analysis for each of the three alternatives that were considered for the Limestone Conversion Project. Include in the response any estimates of expenses, any cost benefit analysis performed, and any supporting documentation for each of the three alternatives.

ORIGINAL RESPONSE:

Please see the following Company responses for additional information relating to the analysis of the alternatives.

- STAFF-DR-02-001
- SIERRA-DR-01-007(a), (b), and (c)
- SIERRA-DR-01-047(a)
- SIERRA-DR-01-048(a) – (j)
- SIERRA-DR-01-49 (a) – (d)
- SIERRA-DR-01-051
- SIERRA-DR-01-053(a) and (b)
- AG-DR-02-009

SUPPLEMENTAL RESPONSE:

CONFIDENTIAL PROPRIETARY TRADE SECRET

After Duke Energy Kentucky filed its Limestone Conversion CPCN Application in late July 2024, its current MEL supplier approached the Company to discuss the potential for [redacted]

[redacted]

The Company has updated its response to this data request as a result.

Please see the following Company responses for additional information relating to the analysis of the alternatives.

- STAFF-DR-02-001 Supplemental response
- SIERRA-DR-01-007(b) Supplemental response
- SIERRA-DR-01-025 Supplemental response
- SIERRA-DR-01-047(a) Supplemental response
- SIERRA-DR-01-048(b, d & i) Supplemental response
- SIERRA-DR-01-049(b) Supplemental response

PERSON RESPONSIBLE: John A. Verderame