

Andy Beshear
Governor

Rebecca W. Goodman
Secretary
Energy and Environment Cabinet



Commonwealth of Kentucky
Public Service Commission
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Frankfort, Kentucky 40602-0615
Telephone: (502) 564-3940
psc.ky.gov

Angie Hatton
Chair

Mary Pat Regan
Commissioner

Andrew W. Wood
Commissioner

July 8, 2025

PARTIES OF RECORD

Re: Case No. 2025-00045

Notice is given to all parties that the attached Informal Conference Memorandum has been filed into the record of this proceeding.

If you have any comments you would like to make regarding the contents of the document, please do so within five days of receipt of this letter. If you have any questions, please contact Ashley Hatcher, Staff Attorney, at Ashley.Hatcher@ky.gov.

Sincerely,


Linda C. Bridwell, PE
Executive Director

Attachment

INTRA-AGENCY MEMORANDUM

KENTUCKY PUBLIC SERVICE COMMISSION

TO: Case File No. 2025-00045

FROM: Ashley Hatcher

DATE: July 8, 2025

RE: Informal Technical Conference of June 10, 2025.

Pursuant to an Order issued on June 10, 2025, an informal technical conference (ITC) was conducted June 10, 2025. A copy of the attendance roster is attached.

The purpose of the ITC was to discuss the load forecasting methodology specifically related to the data centers, and for Louisville Gas and Electric Company (LG&E) and Kentucky Utilities Company (KU) to provide a technical presentation on the resource assessment and modeling, including analyzing the least-cost alternatives for its proposed portfolio. At the ITC, LG&E/KU gave a presentation which is attached to this memo. Parties and Commission Staff were able to ask questions related to the presentation.

There being no further discussion, the ITC was then adjourned.

cc: Parties of Record

PSC Informal Conference Memo- Sign in Sheet

Case No. 2025-00045 LG&E/KU

Location: Microsoft Teams/PSC Conference Room One

Date: Tuesday June 10, 2025

The following is a list of virtual attendees:

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6. Rebecca Price- LFUCG and Louisville Metro
7. Todd Osterloh - LFUCG and Louisville Metro
8. Quang Nguyen- Louisville Metro
9. Cassandra McCrae- Joint Intervenors
10. Gilbert Zelaya- Joint Intervenors
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19. Chelsea Hotaling – Sierra Club
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21. Bethany Baxter- Sierra Club
22. Peter Bostrom- PSC
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CASE NUMBER: IC: 2025-00045 LG&E / KU

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NAME	COMPANY
Ashley Hatcher	PSC
Kayleigh Riley	PSC
John Rogness	PSC
Byron Garry	Joint Intervenor
Moriah Tussey	PSC
Calvin Bailey	PSC
Mike Kurtz	KIUC
Rick Lovetamp	LG&E / KU
Stuart Wilson	LG&E / KU
Lonnie Bell	" "
Duncan Crosby	SKO for LG&E - KU
CHARLES SCHRAM	LG&E / KU
Robert Conroy	LG&E / KU
Allyson Sturgeon	LG&E / KU

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2025 CPCN Application Kentucky Public Service Commission – Informal Technical Conference



June 10, 2025

Agenda

- Overview
- Data Center Load Forecasting
- Technical Presentation on Resource Assessment and Modeling
- 2025 Environmental Compliance Plan Project
- Change in Circumstances from 2006 ECR Application to 2025 ECR Application

Overview



Kentucky Sees Historic Opportunity in Data Centers, Creates Statutory Policy to Attract Them

- In 2024, Kentucky General Assembly creates sales tax incentives to attract data centers to:
 - “Encourage the location of data centers within the Commonwealth”
 - Create new high-paying jobs and new tax revenues
 - Stimulate Kentucky’s economy
- Declares inducing data centers to locate in Kentucky “is of paramount importance to the economic well-being of the Commonwealth”
- In 2025, General Assembly expands incentives from Jefferson County to all of Kentucky
- **Kentucky’s strategy to attract data centers is working**

Kentucky's Data Center Attraction Policy Powers Unprecedented Growth in LG&E-KU Load Forecast

- Kentucky's statutory policy to attract data centers propels LG&E-KU's economic development to new heights

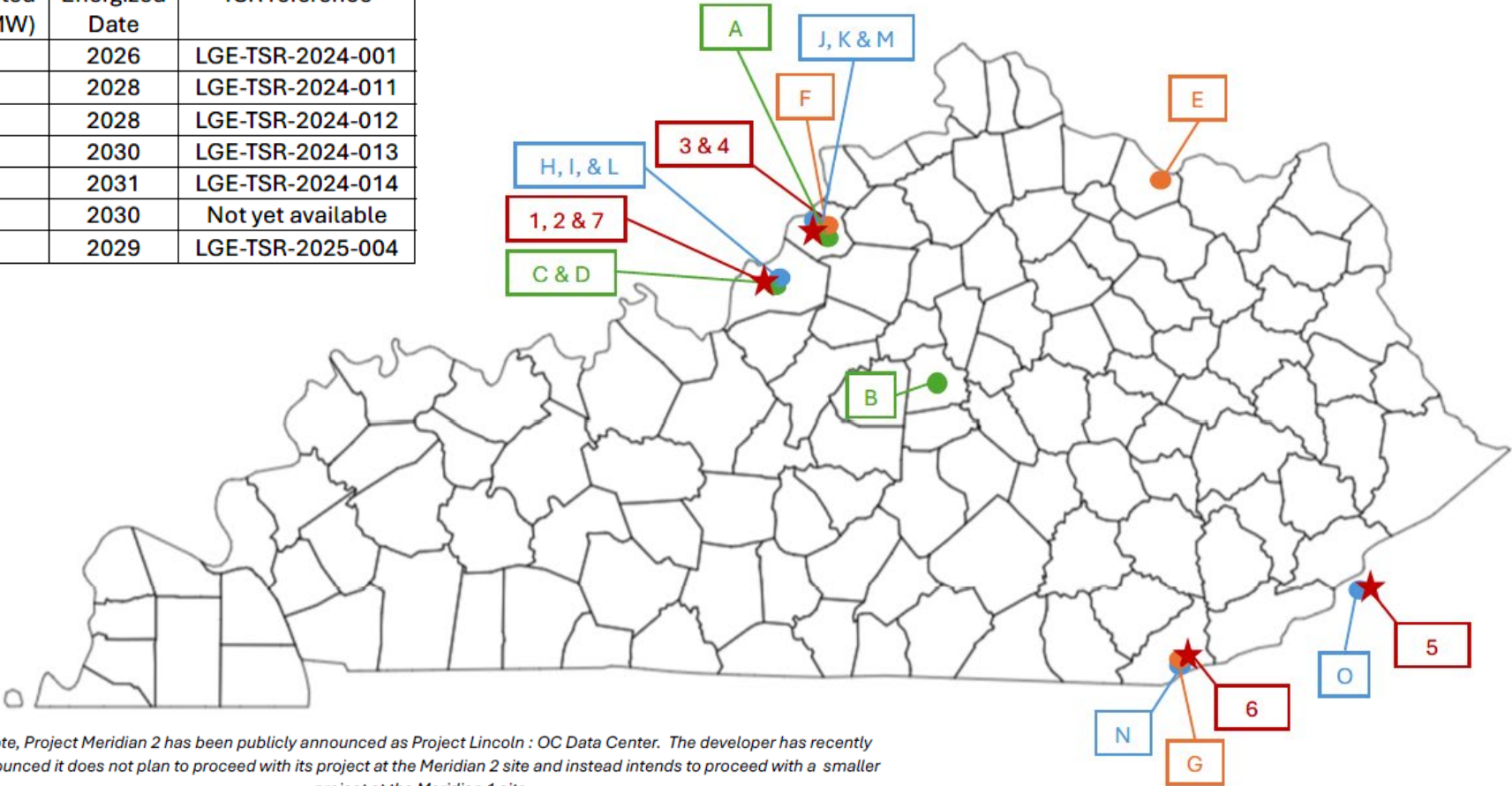
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4	Meridian 2*	9/6/2024	650	2030	LGE-TSR-2024-013
5	Maverick	10/25/2024	100	2031	LGE-TSR-2024-014
6	Pineville	6/2/2025	350	2030	Not yet available
7	Camp Ground 3	04/21/2025	123	2029	LGE-TSR-2025-004

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J	220	Suspect
K	45	Suspect
L	65	Suspect
M	400	Suspect
N	500	Suspect
O	450	Suspect



*Note, Project Meridian 2 has been publicly announced as Project Lincoln : OC Data Center. The developer has recently announced it does not plan to proceed with its project at the Meridian 2 site and instead intends to proceed with a smaller project at the Meridian 1 site.

Exciting Opportunities in Non-Data-Center Growth, Too

- Over 2,000 MW of non-data-center load growth opportunities in LG&E-KU's economic development pool
- Two ~20 MW projects are in 2025 CPCN Load Forecast
- Two recent publicly announced large projects are additional to that
- **Bottom line: Enormous opportunity for Kentucky supports the reasonableness of LG&E-KU's 2025 CPCN Load Forecast**
- As the Kentucky General Assembly has recognized, powering that growth requires new resources
 - “The current economy and future economic development of the Commonwealth requires reliable, resilient, dependable, and abundant supplies of electrical power”

LG&E-KU's 2025 CPCN Proposals Provide Tools Needed to Power Kentucky's Economic Growth Strategy

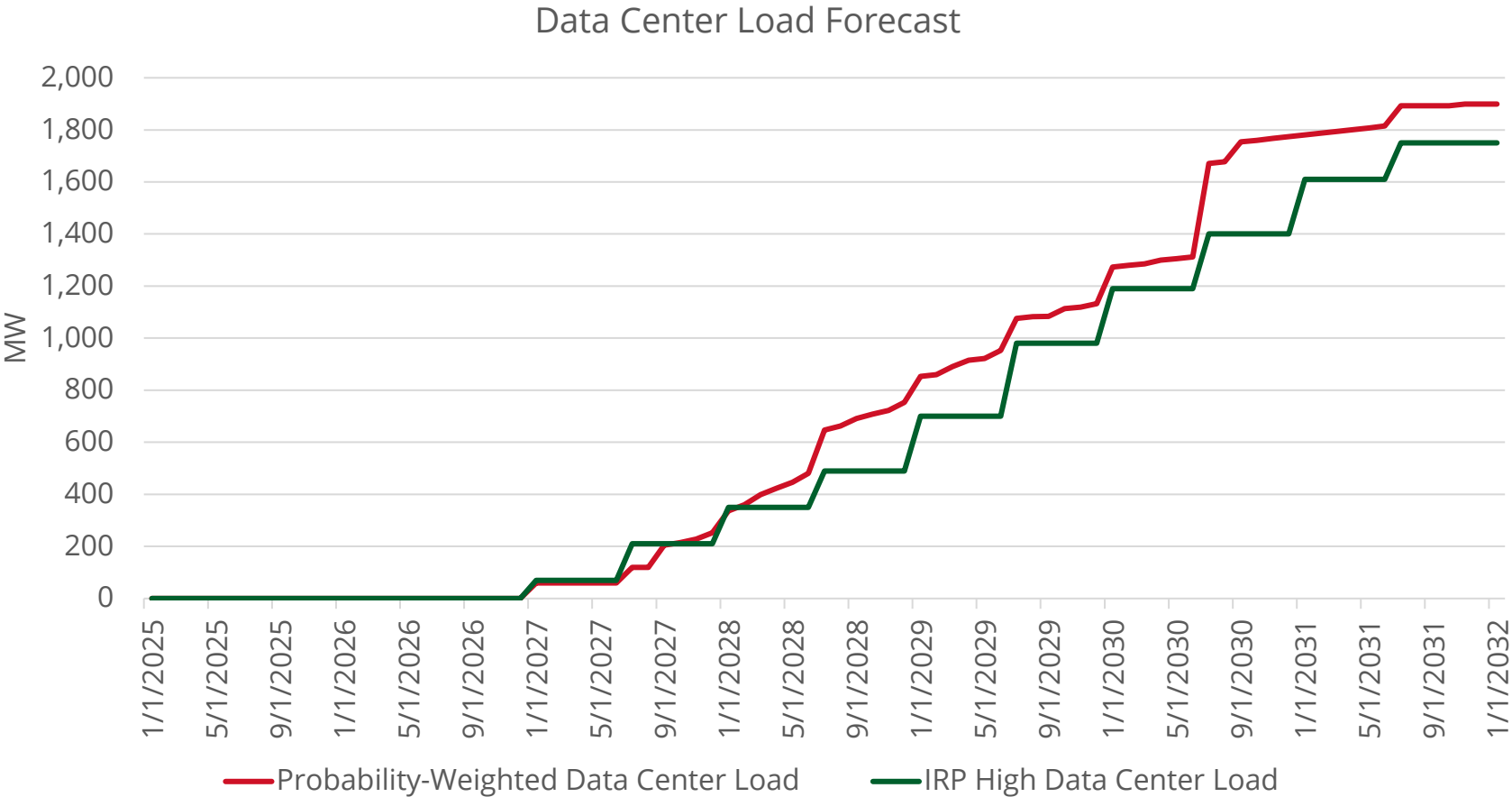
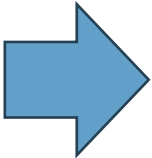
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- Cane Run BESS is important option to support load growth and efficiently use existing resources
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- Short-term Mill Creek 2 life extension may help support near-term load growth
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Data Center Load Forecasting



Companies evaluated economic development activity to determine the 2024 IRP's High economic development load forecast was most reasonable for the 2025 CPCN

Sales Phase	Probability of Completion
Imminent	80%
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Technical Presentation on Resource Assessment and Modeling



Resource planning models serve different purposes

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Resource Planning Model

- Evaluates thousands of resource plans for one load scenario at a time to determine which one is least-cost.
- All resource plans must satisfy various constraints (e.g., reserve requirements).

PROSYM

Detailed Production Cost Model

- Computes hourly production costs for one resource plan and load scenario at a time.

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Resource Adequacy Model

- Computes LOLE for one portfolio at a time over a range of weather scenarios and unit availability scenarios.

Financial Model

Excel Workbook

- Combines fixed resource costs from PLEXOS with detailed production costs from PROSYM to compute the present value of revenue requirements for resource plans.

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Develop Model Inputs

- Weather Year Load Forecasts
- Resource Operating Characteristics
- Renewable Generation Profiles
- Commodity Prices
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- Available Transmission Capacity

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- CPCN Load Forecast Scenarios
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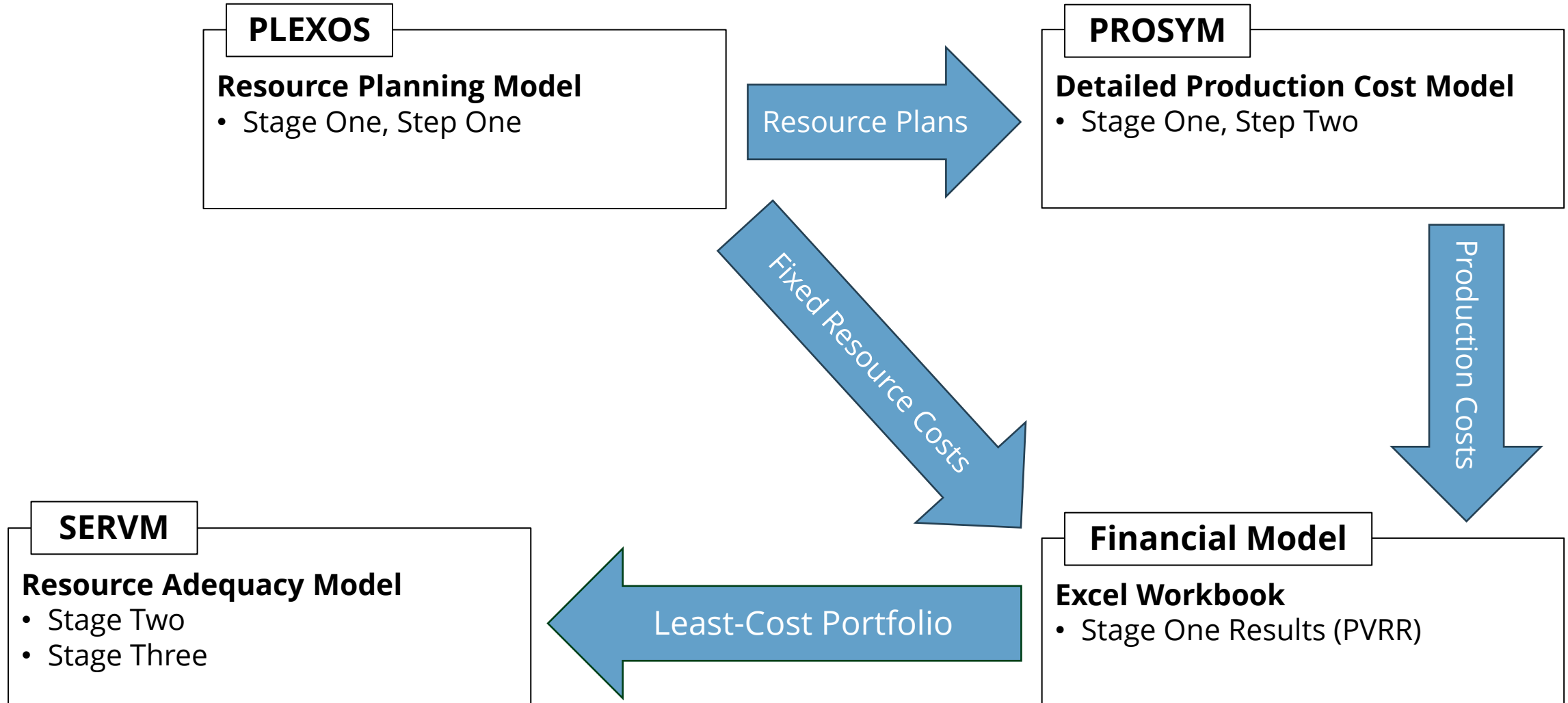
Resource Planning Model

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Detailed Production Cost Model

- Reserve Requirements
- Capacity contributions

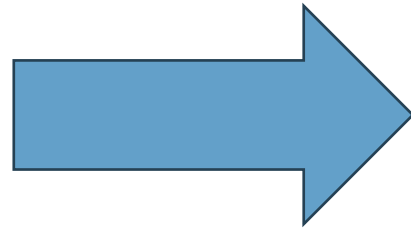
Resource Assessment Process Overview



Stage Two analysis is necessary because the levels of reserves needed for reliable service can vary with changes in load and resource mix

Stage One: Least-Cost Portfolio Additions

Load Scenario with 1,750 MW of Data Center Load
Brown 12
Mill Creek 6
400 MW Cane Run BESS
200 MW Ghent BESS
Ghent 2 SCR
Dispatchable DSM



Stage Two: Assessing Resource Adequacy

BESS in Portfolio (MW)	LOLE (days in 10 years)
600 MW	0.62
500 MW	0.67
400 MW	1.07
300 MW	1.25

- With Brown 12 and Mill Creek 6, LOLE is approximately 1 day in 10 years with 400 MW of BESS.

Companies updated their resource assessment to account for trade tariff and tax incentive risk and the possibility of extending the life of Mill Creek 2

- Trade Tariff and Tax Incentive Scenarios
 - 40% ITC for BESS
 - 40% ITC for BESS + 30% Tariff
 - Full Repeal of ITC and PTC
- Mill Creek 2 Life Extension Costs
 - Short-term extension
 - \$72 million
 - Long-term extension
 - Direct Capital Costs: \$214 million
 - Indirect Capital Costs: \$294 million
 - Total: \$508 million
- Non-Quantified Costs and Risks
 - Environmental Permitting Risk
 - Future Environmental Regulation Risk
 - Landfill Capacity Constraints
 - Lost Efficiencies
 - Detrimental Effects on Ability to Serve New Load
 - Mill Creek 6 Gas Transport Risk

Stage One Results: Modeling Mill Creek 2 Life Extension as a Resource Planning Alternative; PSC 3-8(b)

Trade Tariff and Tax Incentive Scenario	Data Center Load in Load Forecast				
	1,470 MW	1,610 MW	1,750 MW (2025 CPCN)	1,890 MW	2,030 MW
40% ITC for BESS	Retire MC2; Add GH2 SCR; Brown 12; Mill Creek 6; 225 MW 4hr BESS*	Retire MC2; Add GH2 SCR; Brown 12; Mill Creek 6; 425 MW 4hr BESS*	Retire MC2; Add GH2 SCR; Brown 12; Mill Creek 6; 525 MW 4hr BESS*	Retire MC2; Add GH2 SCR; Brown 12; Mill Creek 6; 725 MW 4hr BESS*	Retire MC2; Add GH2 SCR; Brown 12; Mill Creek 6; 925 MW 4hr BESS*; 100 MW CSR
40% ITC for BESS + 30% Tariff OR Full Repeal of ITC	Retire MC2; Add GH2 SCR; Brown 12; Mill Creek 6; 1 SCCT	Retire MC2; Add GH2 SCR; Brown 12; Mill Creek 6; 1 SCCT; 120 MW Solar	Retire MC2; Add GH2 SCR; Brown 12; Mill Creek 6; 2 SCCT; 100 MW CSR	Retire MC2; Add GH2 SCR; Brown 12; Mill Creek 6; Green River 5; 120 MW Solar	Retire MC2; Add GH2 SCR; Brown 12; Mill Creek 6; Green River 5; 1 SCCT

* Brown BESS (125 MW) was modeled as a selectable resource in this analysis. In these load scenarios, the BESS MWs includes Brown BESS.

Approving CPCNs will ensure Companies have options to support economic development and manage risks for customers

- With a 40% ITC for BESS and no tariffs, the Companies' recommendation is unchanged.
 - Mill Creek 2 is retired in all scenarios.
 - All scenarios include Brown 12, Mill Creek 6, Ghent 2 SCR, and between 225 and 925 MW of BESS (including Brown BESS).
 - A short-term Mill Creek 2 life extension is not warranted as a means of deferring the BESS resources.
- With a 30% tariff or full repeal of the ITC and PTC, BESS is no longer least-cost.

- Without BESS, the Companies' ability to support economic development growth is limited.

Portfolio	Load Growth (MW)	LOLE (Days in 10 Years)
[1]: Today's Portfolio + Mill Creek 5 + Mercer Solar – Mill Creek 2 – Small-Frame CTs	250	0.94
[1] + Mill Creek 2	500	1.08
[1] + Mill Creek 2 + Brown 12	1,000	0.89
[1] + Brown 12 + Mill Creek 6	1,350	1.05

2025 Environmental Compliance Plan Project



2025 Environmental Compliance Plan

- Project 45 – GH 2 SCR is the only project included in the application.

KENTUCKY UTILITIES COMPANY
2025 ENVIRONMENTAL COMPLIANCE PLAN (CASE NO. 2025-00105)

Project	Air Pollutant or Waste/By-Product To Be Controlled	Pollution Control Facility	Generating Station	Environmental Regulation*	Environmental Permit*	Scheduled Completion Year	Estimated Projected Capital Cost (in millions)
45	NOx	Selective Catalytic Reduction (SCR)	Ghent	Federal Clean Air Act as Amended (CAAA) and 2015 National Ambient Air Quality Standards for Ozone (2015 Ozone NAAQS)	Title V-23-016 Permit	2028	\$152.3
Total							\$152.3

*Sponsored by Witness Imber|

Change in Circumstances from 2006 ECR Application to 2025 ECR Application



Why KU Proposed Ghent 2 SCR in Case No. 2006-00206

- In Case No. 2000-00112, Commission approved seven SCRs for Companies “as needed” to comply with 1997 NOx SIP Call
 - Ozone season requirement only; no annual NOx restrictions
 - SCRs approved for Ghent 1, 3, and 4, Mill Creek 3 and 4, Trimble County 1, and Brown 3
- March 2005: EPA finalized Clean Air Interstate Rule (CAIR)
 - Created annual NOx limits and allowances for first time; replaced existing ozone season allowance program under NOx SIP Call
 - Ozone NAAQS standard at the time was 80 ppb
- KU’s 2006 analysis showed Ghent 2 SCR was least-cost based on \$95 million cost estimate for 2009 installation and anticipated high NOx allowance prices
 - Analysis included possible Brown 3 SCR as alternative means of compliance; concluded a Brown 3 SCR in 2013 would likely be cost-effective after 2009 Ghent 2 SCR
- Commission approved Ghent 2 SCR in December 2006

2007 Update in Case No. 2006-00206

- Informal Conference held on October 18, 2007 to present update on analysis
- Motion filed on October 25, 2007 to reopen Case No. 2006-00206 to present update detail analysis and report on the Ghent 2 SCR
- Recommendation made not to pursue Ghent 2 SCR
 - Cost estimate for 2009 installation increased to \$115 million (21% increase)
 - NOx allowance price projections decreased 35%
 - Ghent 2 SCR became unfavorable by \$30 million PVRR
- Commission approved removing Ghent 2 SCR from ECR plan in Order issued February 29, 2008

Ghent 2 SCR Economics Changed, Making It Uneconomical till Now

- Between October 2007 and 2023:
 - Commission approved Brown 3 SCR in 2009 to comply with consent decree
 - Companies complied through over-control at SCR-equipped units and limited allowance purchases (none after 2014)
 - Diminishing margin for compliance through over-control due to tightening Ozone NAAQS constraint over time (80 ppb to 70 ppb) and related reductions in allowances
- 2023 Good Neighbor Plan required additional NOx reductions
 - GNP no longer applies to Kentucky, but EPA will have to drive 2015 Ozone NAAQS compliance
 - Ghent 2 year-round availability will support reliable, lowest reasonable cost service
- Delaying Ghent 2 SCR from 2009 to 2028 saved customers \$273 million PVRR
 - Reference response to PSC 3-24.

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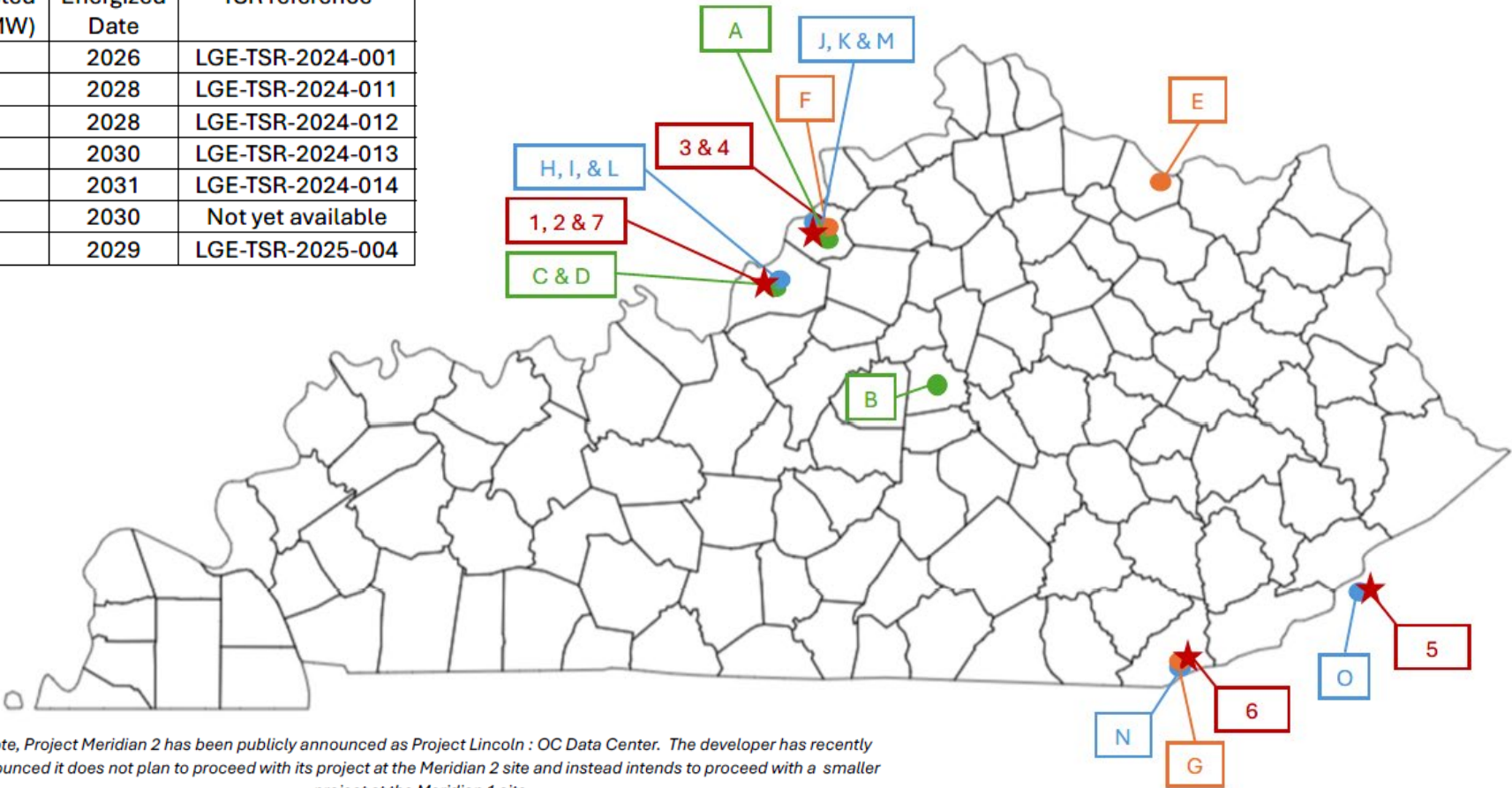
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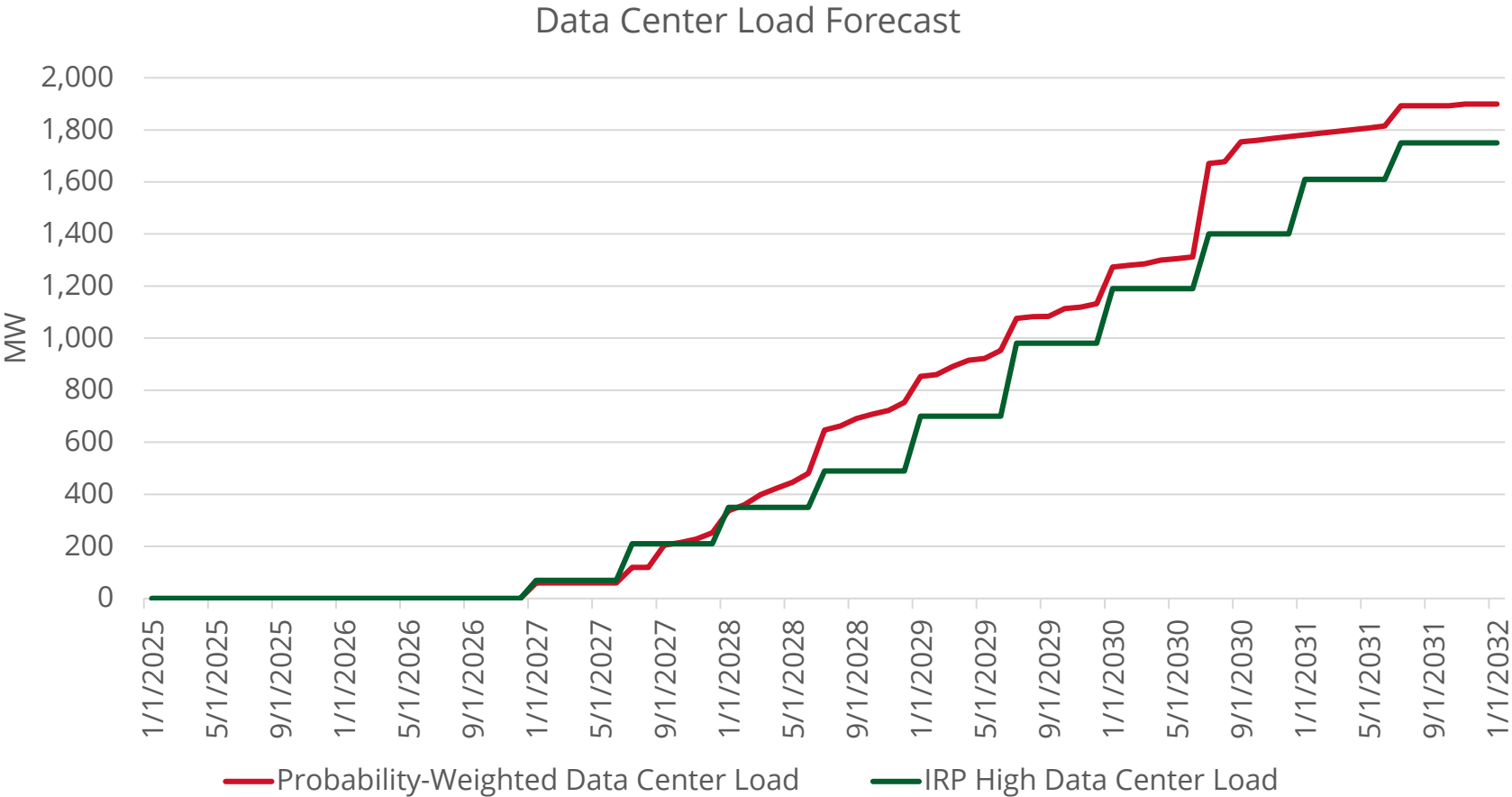
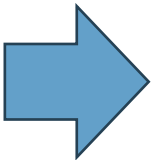
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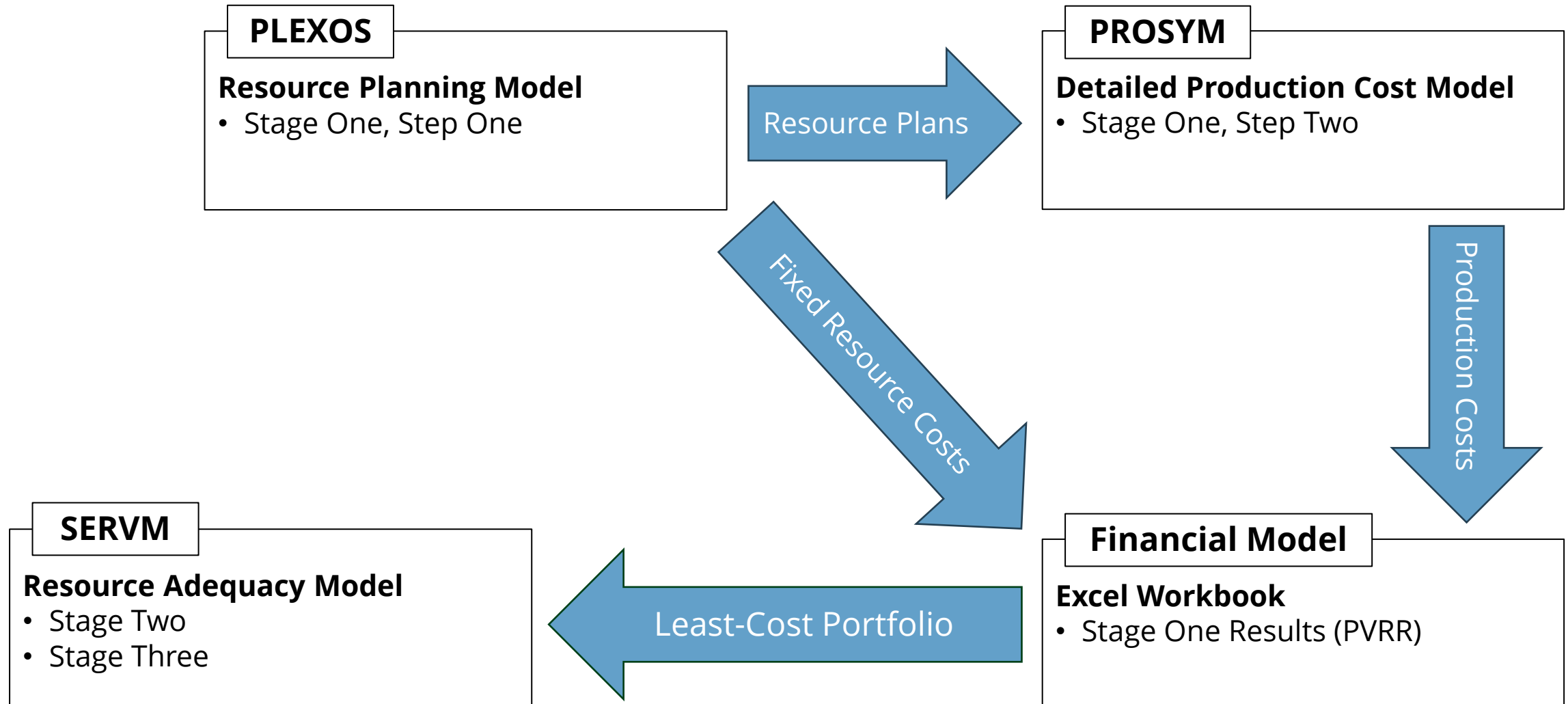
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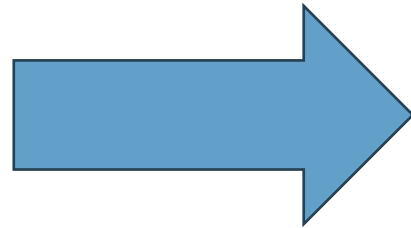
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Stage Two: Assessing Resource Adequacy

BESS in Portfolio (MW)	LOLE (days in 10 years)
600 MW	0.62
500 MW	0.67
400 MW	1.07
300 MW	1.25

- With Brown 12 and Mill Creek 6, LOLE is approximately 1 day in 10 years with 400 MW of BESS.

Companies updated their resource assessment to account for trade tariff and tax incentive risk and the possibility of extending the life of Mill Creek 2

- Trade Tariff and Tax Incentive Scenarios
 - 40% ITC for BESS
 - 40% ITC for BESS + 30% Tariff
 - Full Repeal of ITC and PTC
- Mill Creek 2 Life Extension Costs
 - Short-term extension
 - \$72 million
 - Long-term extension
 - Direct Capital Costs: \$214 million
 - Indirect Capital Costs: \$294 million
 - Total: \$508 million
- Non-Quantified Costs and Risks
 - Environmental Permitting Risk
 - Future Environmental Regulation Risk
 - Landfill Capacity Constraints
 - Lost Efficiencies
 - Detrimental Effects on Ability to Serve New Load
 - Mill Creek 6 Gas Transport Risk

Stage One Results: Modeling Mill Creek 2 Life Extension as a Resource Planning Alternative; PSC 3-8(b)

Trade Tariff and Tax Incentive Scenario	Data Center Load in Load Forecast				
	1,470 MW	1,610 MW	1,750 MW (2025 CPCN)	1,890 MW	2,030 MW
40% ITC for BESS	Retire MC2; Add GH2 SCR; Brown 12; Mill Creek 6; 225 MW 4hr BESS*	Retire MC2; Add GH2 SCR; Brown 12; Mill Creek 6; 425 MW 4hr BESS*	Retire MC2; Add GH2 SCR; Brown 12; Mill Creek 6; 525 MW 4hr BESS*	Retire MC2; Add GH2 SCR; Brown 12; Mill Creek 6; 725 MW 4hr BESS*	Retire MC2; Add GH2 SCR; Brown 12; Mill Creek 6; 925 MW 4hr BESS*; 100 MW CSR
40% ITC for BESS + 30% Tariff OR Full Repeal of ITC	Retire MC2; Add GH2 SCR; Brown 12; Mill Creek 6; 1 SCCT	Retire MC2; Add GH2 SCR; Brown 12; Mill Creek 6; 1 SCCT; 120 MW Solar	Retire MC2; Add GH2 SCR; Brown 12; Mill Creek 6; 2 SCCT; 100 MW CSR	Retire MC2; Add GH2 SCR; Brown 12; Mill Creek 6; Green River 5; 120 MW Solar	Retire MC2; Add GH2 SCR; Brown 12; Mill Creek 6; Green River 5; 1 SCCT

* Brown BESS (125 MW) was modeled as a selectable resource in this analysis. In these load scenarios, the BESS MWs includes Brown BESS.

Approving CPCNs will ensure Companies have options to support economic development and manage risks for customers

- With a 40% ITC for BESS and no tariffs, the Companies' recommendation is unchanged.
 - Mill Creek 2 is retired in all scenarios.
 - All scenarios include Brown 12, Mill Creek 6, Ghent 2 SCR, and between 225 and 925 MW of BESS (including Brown BESS).
 - A short-term Mill Creek 2 life extension is not warranted as a means of deferring the BESS resources.
- With a 30% tariff or full repeal of the ITC and PTC, BESS is no longer least-cost.

- Without BESS, the Companies' ability to support economic development growth is limited.

Portfolio	Load Growth (MW)	LOLE (Days in 10 Years)
[1]: Today's Portfolio + Mill Creek 5 + Mercer Solar – Mill Creek 2 – Small-Frame CTs	250	0.94
[1] + Mill Creek 2	500	1.08
[1] + Mill Creek 2 + Brown 12	1,000	0.89
[1] + Brown 12 + Mill Creek 6	1,350	1.05

2025 Environmental Compliance Plan Project



2025 Environmental Compliance Plan

- Project 45 – GH 2 SCR is the only project included in the application.

KENTUCKY UTILITIES COMPANY
2025 ENVIRONMENTAL COMPLIANCE PLAN (CASE NO. 2025-00105)

Project	Air Pollutant or Waste/By-Product To Be Controlled	Pollution Control Facility	Generating Station	Environmental Regulation*	Environmental Permit*	Scheduled Completion Year	Estimated Projected Capital Cost (in millions)
45	NOx	Selective Catalytic Reduction (SCR)	Ghent	Federal Clean Air Act as Amended (CAAA) and 2015 National Ambient Air Quality Standards for Ozone (2015 Ozone NAAQS)	Title V-23-016 Permit	2028	\$152.3
Total							\$152.3

*Sponsored by Witness Imber|

Change in Circumstances from 2006 ECR Application to 2025 ECR Application



Why KU Proposed Ghent 2 SCR in Case No. 2006-00206

- In Case No. 2000-00112, Commission approved seven SCRs for Companies “as needed” to comply with 1997 NOx SIP Call
 - Ozone season requirement only; no annual NOx restrictions
 - SCRs approved for Ghent 1, 3, and 4, Mill Creek 3 and 4, Trimble County 1, and Brown 3
- March 2005: EPA finalized Clean Air Interstate Rule (CAIR)
 - Created annual NOx limits and allowances for first time; replaced existing ozone season allowance program under NOx SIP Call
 - Ozone NAAQS standard at the time was 80 ppb
- KU’s 2006 analysis showed Ghent 2 SCR was least-cost based on \$95 million cost estimate for 2009 installation and anticipated high NOx allowance prices
 - Analysis included possible Brown 3 SCR as alternative means of compliance; concluded a Brown 3 SCR in 2013 would likely be cost-effective after 2009 Ghent 2 SCR
- Commission approved Ghent 2 SCR in December 2006

2007 Update in Case No. 2006-00206

- Informal Conference held on October 18, 2007 to present update on analysis
- Motion filed on October 25, 2007 to reopen Case No. 2006-00206 to present update detail analysis and report on the Ghent 2 SCR
- Recommendation made not to pursue Ghent 2 SCR
 - Cost estimate for 2009 installation increased to \$115 million (21% increase)
 - NOx allowance price projections decreased 35%
 - Ghent 2 SCR became unfavorable by \$30 million PVRR
- Commission approved removing Ghent 2 SCR from ECR plan in Order issued February 29, 2008

Ghent 2 SCR Economics Changed, Making It Uneconomical till Now

- Between October 2007 and 2023:
 - Commission approved Brown 3 SCR in 2009 to comply with consent decree
 - Companies complied through over-control at SCR-equipped units and limited allowance purchases (none after 2014)
 - Diminishing margin for compliance through over-control due to tightening Ozone NAAQS constraint over time (80 ppb to 70 ppb) and related reductions in allowances
- 2023 Good Neighbor Plan required additional NOx reductions
 - GNP no longer applies to Kentucky, but EPA will have to drive 2015 Ozone NAAQS compliance
 - Ghent 2 year-round availability will support reliable, lowest reasonable cost service
- Delaying Ghent 2 SCR from 2009 to 2028 saved customers \$273 million PVRR
 - Reference response to PSC 3-24.

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