2026 Strategic Planning Framework

Based on December 2025 Board Discussion
Executive Director: Eric King

Introduction

This framework emerged from the Commission's December 2025 board meeting where commissioners representing utilities, coal producers, natural gas suppliers, regulators, and other stakeholders engaged in substantive discussion about Kentucky's electricity planning needs. After reviewing the Commission's energy inventory dashboard, the conversation turned to what questions must be answered to inform electricity policy.

A clear organizing principle emerged: Kentucky's electricity planning challenges fall into three interconnected areas that one commissioner summarized as "supply, demand, transmission." This framework organizes the Commission's 2026 work around those three pillars, addressing the concerns and questions raised during the December meeting.

The Commission has intentionally chosen to focus this initial planning effort on Kentucky's electrical system. While Kentucky's broader energy complex includes transportation fuels, heating fuels, and other energy sources, this work plan addresses electricity generation, transmission, and delivery. Future Commission work may expand to examine the broader energy system.

Kentucky's Energy Context

Kentucky's energy competitive advantage has historically been built on abundant, low-cost coal resources. Beginning in the 1970s energy crisis, the Commonwealth leveraged this advantage to attract and retain manufacturing, creating an energy value chain that provides employment, tax revenue, and economic stability.

Today, Kentucky's generation portfolio is evolving, and the December meeting reflected this transition. Utilities are making substantial capital investments in natural gas generation to meet projected demand growth. East Kentucky Power Cooperative is developing the Rice combined cycle unit, Louisville Gas and Electric and Kentucky Utilities have approval for three large-scale natural gas units, and Big Rivers is advancing projects for its territory. At the same time, coal generation continues to provide significant baseload capacity.

Several commissioners raised concerns about federal policies affecting fossil fuel generation, noting that regulatory pressures impact both coal and natural gas infrastructure decisions. The regulatory environment and its impact on the energy complex must be part of Kentucky's planning analysis.

The Commission's role is providing independent analysis of Kentucky's entire energy complex that informs General Assembly decision-making while complementing the planning work of utilities and the PSC.

Pillar One: Demand

Demand forecasting is the foundational driver of all other electricity planning decisions. One commissioner framed the central question: "we need to figure out what are the ranges of our electricity demand scenarios that we need to be thinking about as a state."

Planning Issues

Speed of New Demand vs. Generation Development

The December meeting surfaced a critical mismatch: data centers can achieve commercial operation in 18-24 months while combined cycle natural gas generation requires 5-7 years from planning to operation. This timing disparity creates significant planning challenges that Kentucky must address through robust demand forecasting across multiple time horizons.

Different Demand Types and Characteristics

Different customer classes present distinct load characteristics. Data centers provide steady baseload demand while traditional manufacturing varies seasonally. There are big differences between data center load and appliance manufacturing or other traditional industrial customers. The Commission must account for the differences in load profiles in our assessment of generation portfolios needed to demand projections.

Load Data Gap

The current energy inventory focuses on supply-side resources but lacks comprehensive demand-side data. Load profiles and growth projections are not uniformly available across all utility service territories. Several commissioners requested that utilities provide load information and profiles to complete Kentucky's energy picture. This data collection will be a priority for early 2026 work.

Economic Development Coordination

The conversation linked demand forecasting directly to Kentucky's economic development goals. As one commissioner put it, "we can't have economic development if we don't have available and affordable electricity." Understanding what industries Kentucky seeks to attract and what their electricity requirements are must inform demand scenarios.

Commission Work Plan Response

The Commission will develop comprehensive demand projections with 5-year, 10-year, 15-year, and 20-year scenarios. This work will coordinate with utilities, the Cabinet for Economic Development, and major industrial customers to understand both existing load growth and potential new demand from data centers and other energy-intensive development. A Demand Forecasting Committee will define specific analytical questions and direct technical analysis.

Pillar Two: Primary Energy Supply

The December conversation on primary energy supply addressed fuel availability and production capacity. One commissioner summarized the central question: "what is our ability to meet that demand?" This requires assessment of Kentucky's fuel supply sources and production infrastructure.

Planning Issues

Coal Supply Chain and Production Capacity

Coal-fired generation continues to provide significant capacity in Kentucky's portfolio. The December meeting included questions about ensuring the coal supply chain remains viable to support continuing coal generation. Kentucky historically has depended on coal generation to deliver low-cost and reliable electric power.

Issues requiring assessment include:

- Coal production capacity and reserves available to serve Kentucky generation
- Coal transportation infrastructure including rail, barge, and truck capacity
- Economic factors affecting coal producer investment decisions
- How to ensure coal producers and transporters continue to develop reserves and pursue operations required to support Kentucky's coal-fired generating fleet

Natural Gas Supply

Commissioners raised concerns about natural gas fuel supply given the substantial gas generation under development. The December discussion emphasized that "all of our future generation that is dispatchable, reliable, is combined cycle natural gas." With this significant reliance on natural gas generation, understanding fuel availability is critical to Kentucky's energy security.

Specific supply concerns include:

- In-state Kentucky natural gas production capacity and trends
- Regional natural gas production in Appalachian and other nearby basins
- U.S. natural gas production trends and adequacy relative to growing domestic demand
- Impact of LNG export growth on domestic natural gas supply and pricing
- Firm fuel supply agreements and whether utilities have secured adequate long-term supply

Resource Adequacy Assessment

Utilities are building significant new capacity, but the overarching concern remains whether Kentucky's generation fleet can meet projected demand under various growth scenarios. Commissioners emphasized the need to understand this across different planning horizons - 5, 10, 15, or 20 years out. The Commission's baseline generation adequacy assessment presented in December showed potential capacity shortfalls by 2030 under certain demand scenarios.

Other Generation Sources

Secretary Goodman raised that much of the conversation had focused on coal and natural gas but noted Kentucky should also consider petroleum. Commissioner Andrews expanded this to include transport fuels and alternative fuels given Kentucky's production capabilities in these areas. Nuclear came up in the context of long-term planning though commissioners acknowledged extended development timelines limit near-term applicability. Renewable generation and battery storage were noted as complementing dispatchable resources where economically viable. Kentucky has existing hydroelectric facilities and potential for additional hydropower development that warrants evaluation alongside other generation options. Integration of intermittent renewable generation raises questions about impacts on distributed transmission infrastructure that the Commission will need to address.

Regulatory Environment

The December meeting surfaced concerns about federal regulatory uncertainty, particularly regarding Clean Air Act interpretation between administrations. This regulatory instability

affecting fossil fuel generation can delay or prevent needed generation development. Commissioners described a "whipsaw, back and forth" between administrations that creates uncertainty for multi-billion dollar generation investments. The conversation included whether Kentucky should develop recommendations for federal legislative reform to provide greater regulatory certainty.

Commission Work Plan Response

The Commission will conduct comprehensive assessment of fuel supply capabilities across all sources. This includes evaluating coal supply chain viability, natural gas production and supply trends (including LNG export impacts), and other fuel sources that may serve Kentucky generation. A Supply Assessment Committee will coordinate with coal producers, natural gas suppliers, and utilities to gather necessary data and define analytical requirements. The Commission will also assess generation adequacy under different demand scenarios and evaluate the economic implications of various generation portfolio paths for Kentucky.

Pillar Three: Transmission Infrastructure

The December conversation emphasized that transmission infrastructure is essential to delivering both generation and fuel to where they are needed. One board member put it bluntly: "you can't talk about speed of new generation without talking about speed of transmission." This pillar addresses both electricity transmission and natural gas pipeline infrastructure as parallel delivery systems that must be adequate to support Kentucky's energy needs.

Planning Issues

Electric Transmission as System Constraint

Commissioners identified electric transmission infrastructure as potentially the limiting factor in serving new load, particularly for data centers requiring 500 MW to 1,000 MW of capacity. This is "a massive problem right now" and transmission planning must proceed in parallel with both generation development and demand growth.

Natural Gas Pipeline Infrastructure

Commissioners raised immediate concerns about natural gas pipeline infrastructure given the substantial gas generation under development. The December discussion emphasized that "all of our future generation that is dispatchable, reliable, is combined cycle natural gas." The critical question: does the gas transmission system exist that can deliver fuel to existing and emergent gas-fired plants, and is it sufficiently resilient?
Specific pipeline infrastructure concerns include:

- Interstate and intrastate pipeline capacity relative to projected natural gas generation demand
- Whether Kentucky may be at capacity on some interstate pipelines and pipelines within Kentucky
- Firm pipeline capacity agreements and whether utilities have secured adequate firm transmission capacity
- On-site storage capabilities at generating facilities
- Equipment procurement timelines which may require up to seven years for some natural gas infrastructure
- Electric Transmission Infrastructure Mapping

Commissioners requested that the energy inventory dashboard be enhanced to include electric transmission infrastructure showing major transmission lines and substations. Some transmission data may be considered critical infrastructure requiring appropriate security clearance for access. The PSC may have access to federal databases that EPIC should explore.

Regional Transmission Operator Coordination

The conversation touched on the need to understand risks associated with Regional Transmission Operators (MISO and PJM) that could impact Kentucky. The Commission's analysis should address how the operation and planning of the energy systems managed by RTOs affect the Commonwealth.

Commission Work Plan Response

The Commission will assess both electric transmission and natural gas pipeline infrastructure capacity, including existing and future projected margins, and identify constraints that could limit generation dispatch or customer service. This parallel assessment recognizes that both delivery systems must be adequate to support Kentucky's energy reliability. The work will coordinate closely with utilities, pipeline operators, and RTOs to understand infrastructure development timelines and requirements. A Transmission Infrastructure Committee will direct this analysis and ensure it aligns with generation and demand planning work.

Implementation Approach

Committee Structure

The December meeting supported a committee-driven approach where stakeholders actively define analytical questions rather than simply reviewing staff work. The Commission will establish three working committees corresponding to the three pillars:
Demand Forecasting Committee - addressing load projections, economic development coordination, and data collection from utilities

Primary Energy Supply Assessment Committee - addressing coal supply chain, natural gas supply (including LNG export impacts), resource adequacy, operational reliability, and technology evaluation

Transmission Infrastructure Committee - addressing electric transmission capacity and natural gas pipeline infrastructure, development timelines, and RTO coordination

Each committee will comprise board members, utility representatives, energy producers, and relevant stakeholders. Committees will define specific questions to be answered, establish what modeling and data are necessary, and provide ongoing direction to technical staff.

Analytical Capabilities

Committee work will build on the energy inventory and modeling infrastructure developed by the Commission's technical team at the University of Kentucky Center for Applied Energy Research. However, the Commission faces an important strategic decision about acquiring additional modeling capabilities needed for sophisticated scenario analysis, capacity adequacy assessment, and economic impact modeling.

Three approaches merit consideration: developing models internally through UK, partnering with federal laboratories (Oak Ridge, Argonne, NLR, Pacific Northwest), or procuring commercial platforms used by utilities and RTOs. Each approach offers different advantages in terms of cost, timeline, and stakeholder familiarity.

Internal development provides maximum customization for Kentucky-specific analysis. Federal laboratory partnerships offer access to cutting-edge capabilities and independent validation from nationally recognized entities. Commercial platforms provide industry-standard methodologies that utilities and stakeholders readily accept.

The executive committee will need to weigh these options considering which analytical questions require modeling that stakeholders will view as particularly authoritative, what budget is available, and how to balance near-term analytical needs with long-term institutional capacity building. The executive committee will bring a recommendation to the full board early in 2026.

Immediate Data Collection Priorities

The December meeting identified several immediate data needs:

- Load data and profiles from utilities (currently not uniformly available)
- Natural gas production and supply data including LNG export impacts
- Natural gas pipeline infrastructure mapping and capacity data
- Firm capacity agreements for both fuel supply and pipeline transmission
- Coal production capacity and transportation infrastructure
- Electric transmission infrastructure data

The Commission will work with utilities, coal producers, natural gas suppliers, pipeline operators, and other stakeholders to collect this information. Commissioners expressed willingness to facilitate data access and several offered specific assistance.

Relationship to Utility Planning and PSC Processes

The December conversation made clear the Commission's work should complement, not duplicate or supersede, utility planning and PSC regulatory processes. Utilities retain primary responsibility for generation planning. The Commission provides independent statewide analysis that assesses Kentucky's energy complex holistically across utility territories, informing General Assembly policy decisions. The Commission will coordinate closely with utilities and the PSC to ensure its work supports rather than conflicts with established planning and regulatory processes.

Conclusion

This framework emerged from substantive board conversation in December 2025. It reflects the concerns, questions, and priorities raised by commissioners representing diverse perspectives on Kentucky's energy future. The three-pillar structure provides an organizing principle that ensures comprehensive analysis while allowing focused attention on specific issues.

Kentucky's energy reliability and economic competitiveness depend on adequate supply from all sources that can economically serve the Commonwealth. Coal generation continues providing

significant capacity. Natural gas generation is expanding rapidly to meet projected demand growth. Nuclear, renewable, and storage technologies warrant evaluation for their potential roles.

The Commission's role is providing factual analysis that informs policy decisions without prejudging which generation sources or strategies Kentucky should pursue. By engaging stakeholders through working committees and conducting comprehensive assessment across all three pillars, the Commission will provide Kentucky policymakers with the information necessary to make informed decisions about the Commonwealth's energy future.
Success depends on continued collaboration with utilities, coal producers, natural gas suppliers, pipeline operators, regulators, and all stakeholders who participated in the December meeting – and beyond – who are committed to supporting this planning effort.