



City of Columbia

701 East Broadway, Columbia, Missouri 65201

Department Source: City Utilities - Water and Light

To: City Council

From: City Manager & Staff

Council Meeting Date: September 15, 2025

Re: Report: Electric Integrated Resource Plan (IRP)

Executive Summary

This report discusses the need to engage The Energy Authority, Inc. (TEA) to provide a comprehensive econometric assessment in the form of a twenty (20) year Integrated Resource Plan (IRP). The results of the study will be utilized by City Staff to help make decisions regarding meeting the short- and long-term energy and capacity needs for Columbia to continue to serve the citizens with safe and reliable energy services in the most cost-effective manner possible.

Discussion

In the next few years, Columbia has existing power purchase agreements (PPAs) that expire and generation assets that are expected to retire (Sikeston). Additionally, our own generation assets, the Municipal Power Plant and Columbia Energy Center, are aging and becoming less efficient and costly to maintain. In 2027, Columbia will be unable to meet its capacity planning reserve margin requirement in the planning resource auction without purchases from the auction. Auction prices in the last few years have gone from \$10 per MW-day to more than \$700 per MW-day in some seasons. The capacity market is significantly different than what was evaluated and projected in the 2022 Integrated Electric Resource Plan, particularly with capacity accreditation for renewable assets. The Electric Utility is facing significant increased financial risks due to market volatility and lack of electric generation in our zone, MISO Zone 5. The results of an IRP will be utilized to help City staff make decisions on how to meet Columbia's future capacity and energy obligations in the most cost-effective manner in conjunction with the values of the customers.

Columbia Water and Light (CWLD) is a member of the Midcontinent Independent System Operator (MISO) and as such is required to obtain electric generation capacity in excess of our estimated peak load plus a reserve margin. This ensures that Columbia has enough power generation and other resources to meet forecasted electricity demand both locally and in the MISO system. This is especially important during peak periods to prevent power outages. MISO utilizes the annual Planning Resource Auction (PRA) to evaluate system wide capacity. All MISO members are required to participate in the auction. During this auction each member utility has to nominate generation assets to cover its planning reserve margin requirement (PRMR) through any combination of the following options:

- Columbia's own internal generation assets (Columbia Energy Center, Municipal Power Plant, etc.)
- Purchase capacity from another generating facility that has excess capacity through a power purchase agreement (PPA) (Sikeston, Iatan, Prairie State, etc.)
- Purchase capacity in the market or through MISO



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CWLD utilizes a combination of its own generation and PPAs to cover its planning reserve margin requirement in the planning resource auction. The last option, purchasing capacity in the market, carries a large financial risk due to the volatility of the results each year. Recent auctions have sent significant price signals to MISO Zone 5 members, including CWLD, that indicate additional generation resources are needed in our area.

A 20-year IRP will provide a comprehensive econometric load forecast, analysis of CWLD's assets, demographics and consumption patterns. Based on the analysis, TEA can project portfolio options that include cost and a discussion of the relative risk of each respective option and work with Columbia to recommend portfolios that strive to achieve minimal levels of risk relative to cost. Utility staff will engage with the public at the beginning and end of this process to ensure the final plan reflects the values and interests of the Electric Utility customers. Values to be considered with the customer engagement will consider value, cost, renewables, reliability and ownership.

Columbia will request a report covering a base case and up to six (6) portfolios consistent with Columbia's strategic objectives. This report will provide a list recommending the "best fit" from the scenarios for Columbia to utilize in making short- and long-term decisions regarding meeting Columbia's energy and capacity obligations. TEA is the CWLD Market Participant in the MISO market to engage in the electricity markets for buying and selling energy, capacity and financial transmission for all of CWLD activities. TEA currently performs the yearly load forecast and have all of the CWLD data for capacity and energy. TEA is especially suited to perform an Integrated Resource Plan for the Electric Utility.

This item will be discussed with a final recommendation from the Water and Light Advisory Board at their September 10, 2025 meeting. Previously, at the January 15, 2025 Water and Light Advisory Board meeting, Board Member Gregg Coffin provided a Capacity Study Recommendation to the board meeting, attached. Additionally, Missouri Public Utility Alliance (MPUA) presented to the board on March 12, 2025 about MISO Zone 5 Capacity, presentation attached. TEA also provided a presentation to the board and interested Council Members at a special meeting May 8, 2025, where the capacity auction results were discussed. At the May 14, 2025 Water and Light Advisory Board meeting, the staff and board further discussed Columbia's future capacity concerns. From these discussions, it is necessary that Columbia needs to move forward quickly with updating a long term plan for capacity and energy. An Integrated Resource Plan will provide a path forward to purchase, contract or build the necessary capacity and energy to meet Columbia's needs in the most cost effective way that also considers the values of the customers.

Fiscal Impact

Short-Term Impact: \$175,000

Long-Term Impact: None

Strategic & Comprehensive Plan Impact



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Strategic Plan Impacts:

Primary Impact: Reliable and Sustainable Infrastructure, Secondary Impact: Not Applicable, Tertiary Impact: Not Applicable

Comprehensive Plan Impacts:

Primary Impact: Not Applicable, Secondary Impact: Not applicable, Tertiary Impact: Not Applicable

Legislative History

Date	Action
N/A	N/A

Suggested Council Action

Direct staff to move forward with an agreement for The Energy Authority, Inc to develop an Electric Integrated Resource Plan for the Electric Utility.