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EXECUTIVE SUMMARY

Natural Gas Procurement, Hedging, and Regulatory Cost Recovery

An Integrated Analysis of Supply Contracts, Pipeline Dependence, and Natural Gas Cost Dynamics within Duke Energy's System

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Natural Gas Procurement, Hedging, and Regulatory Cost Recovery at Duke Energy

This paper examines how Duke Energy procures, transports, hedges, and recovers the cost of natural gas used for electric generation. Using publicly available sources - including SEC filings (Form 10-K and 10-Q), FERC Index of Customers data, and EIA Form 923 plant-level fuel data - the analysis traces both the physical flow of gas and the financial flow of payments from upstream production to combustion at Duke's power plants.

Growing Reliance on Natural Gas: From 2017 to 2024, Duke Energy Carolinas (DEC) and Duke Energy Progress (DEP) increased combined natural gas purchases by approximately 70%. Duke's 2025 planning proposal projects gas to reach nearly 50% of the system energy mix by 2034. This rising dependence heightens exposure to fuel-price volatility, pipeline constraints, and regional basis premiums.

Contract Structure and Delivered Cost: Duke's gas procurement is built on layered supply (fixed-price, index-based, and percentage-of-burn), transportation (primarily firm capacity on Transco Zones 4 and 5). Delivered cost includes the commodity price plus pipeline reservation and usage charges and persistent Zone 5 basis premiums. Because the Carolinas are a constrained downstream market, Duke consistently with rare exception pays above Henry Hub.

Basis Premium and Peer Comparison: EIA Form 923 data show Duke's delivered fuel costs averaged roughly 10–12% higher than peer utilities in the Southeast over 2017–2024. Duke's basis premiums exhibit greater volatility than peers, with occasional sharp spikes during periods of pipeline congestion and winter demand. These structural regional premiums materially affect customer bills.

Supplier Concentration: Procurement is concentrated among a small group of core suppliers - Pacific Summit, Sequent, Twin Eagle, BP, and Shell Energy NA - accounting for a large portion of purchased volume and total transactions from 2017-2024. Reliance on high-volume suppliers at moderately elevated average prices indicates reliance on stable commercial relationships rather than frequent spot-market arbitrage.

Hedging Performance: Duke uses financial swaps, futures, forwards, and options to reduce fuel-price volatility, with gains and losses deferred through regulatory mechanisms rather than flowing directly to earnings. Results have been mixed: 2021–2022 hedges generated notable customer benefits during price spikes, while long-dated positions in 2012–2017 produced net costs due to forecast error. The current strategy favors shorter hedge horizons to limit structural risk. Hedging stabilizes bills but does not eliminate regional basis exposure.

LNG and Infrastructure Risk: While DEC and DEP do not own or use Liquified Natural Gas (LNG) or underground storage, Duke's affiliate Piedmont Natural Gas owns LNG and underground storage assets. DEC and DEP's consideration in current proposals to introduce LNG storage assets into its electricity portfolio and operation, as well as the creation of higher premium Enhanced Firm Transportation (EFT) service would each introduce additional capital and utilization risk, particularly if costs are fully recoverable through fuel clauses.

Regulatory Implications: Because DEC and DEP recover 100% of fuel costs through fuel-adjustment mechanisms, planning and procurement decisions directly translate into customer rates. The analysis identifies key transparency gaps in hedge structures, transportation utilization, and displacement practices. As Duke's generation portfolio becomes more gas-dependent, the interaction between contract design, basis premiums, and regulatory recovery mechanisms becomes increasingly central to ratepayer exposure and system risk.

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