REBUTTAL TESTIMONY OF WENBIN (MICHAEL) CHEN
MANAGER, MIDWEST TRADING
DUKE ENERGY BUSINESS SERVICES LLC
ON BEHALF OF
DUKE ENERGY INDIANA, LLC
CAUSE NO. 38707-FAC 132 BEFORE THE
INDIANA UTILITY REGULATORY COMMISSION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Wenbin (Michael) Chen, and my business address is 526 South Church Street, Charlotte, North Carolina 28202.

Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?

A. I am employed as Manager, Midwest Trading, by Duke Energy Business Services LLC, a service company subsidiary of Duke Energy Corporation and a non-utility affiliate of Duke Energy Indiana, LLC ("Duke Energy Indiana" or "Company").

Q. ARE YOU THE SAME WENBIN (MICHAEL) CHEN WHO SPONSORED DIRECT TESTIMONY IN THIS PROCEEDING?

A. Yes.

Q. WHAT IS THE PURPOSE OF YOUR REBUTTAL TESTIMONY IN THIS PROCEEDING?

A. The purpose of my rebuttal testimony is to respond to the testimony filed by Messrs. Eckert and Guerrettaz on behalf of the Indiana Office of Utility Consumer counselor ("OUCC") related to Duke Energy Indiana's gas and power hedging practices. In addition, I will respond to a few statements in the Motion

for Subdocket filed by the OUCC and Industrial Group related to potential changes to the Company's hedging practices going forward.

Q. MR. CHEN, HAVE YOU READ THE TESTIMONY OF MESSRS. ECKERT AND GUERRETTAZ?

A. Yes, I have.

Q. MR. GUERRETTAZ RECOMMENDS THAT THE COMPANY PROVIDE TESTIMONY REGARDING ITS HEDGING RESULTS AND ALSO WHETHER THERE HAVE BEEN CHANGES TO ITS HEDGING IN RECENT YEARS. CAN YOU PLEASE START BY PROVIDING AN OVERVIEW OF DUKE ENERGY INDIANA'S HEDGING PRACTICES?

A. Yes, I can. I will start by discussing Cause No. 38707-FAC 68S1, which was a previous subdocket before the Commission regarding the Company's hedging practices. That subdocket was resolved by the Commission approving a settlement agreement between Duke Energy Indiana and the OUCC with the following terms:

The first main provision of the Settlement Agreement was that the Company would no longer hedge to a flat position (meaning that enough hedges were put into place that the Company's expected load would be completely covered). Beginning August 1, 2008 and continuing until permanent hedging protocols are approved by the Commission, Duke Energy Indiana will not utilize its flat hedging methodology. Instead, the Company will hedge up to approximately flat minus 150 MW on a forward, monthy and intra-month basis.

The Company's testimony explained that the 150 MW that was to be left unhedged was to be "purchased on the open spot market at competitive prices." Cause No. 38707-FAC 68S1 Order at 5. Duke Energy Indiana's witness also explained that "although the strategy exposes the customers to price fluctuations (potentially increases), that strategy also enables Duke Energy Indiana to take advantage of market price decreases" and "is consistent with the Commission's promotion of hedging in volatile, fluctuating markets, while at the same time permitting customers to receive the potential benefit should spot market prices decline." Id.

The parties also agreed to hold "annual discussions regarding hedging methodology and parameters and prospective hedging plans." In addition, Duke Energy Indiana agreed to fund an auditor for the OUCC to review its hedging practice for four years.

In approving this Settlement Agreement, the Commission noted that "the hedging methodology is consistent with the Commission's often-stated principle that hind-sight review should not be used when reviewing hedging activities." Order at 8.

Q. HAS THE COMPANY CONTINUED TO FOLLOW THE PRINCIPLES OF THE FAC 68S1 SETTLEMENT AGREEMENT?

A. Yes, the Company has followed the same general principles it agreed to in the Settlement Agreement.

Early in 2013, the Company extended its hedging horizon for both native and non-native power hedging programs to current month plus six months based on recommendations by a hedging consultant retained by the OUCC. It was current month plus three months before the change. This change was outlined in Cause No. 38707-FAC 99 and approved by the Commission.

Q. CAN YOU PLEASE PROVIDE ADDITIONAL DETAILS ON THE COMPANY'S HEDGING PROGRAM?

A. Yes. In addition to the parameters agreed to in FAC 68S1, there are also internal Duke Energy corporate risk limits and guidelines that the Company follows in its hedging program. The Duke Energy corporate risk limits and guidelines incorporate the general principles agreed to by Duke Energy Indiana in prior FAC proceedings: 1) the Company may sell and purchase power within the current month plus the six succeeding months in order to balance generation supply with requirements for native load and nonnative load; and 2) the Company may purchase on a forward basis to hedge the position but must leave at least 150 MW on a forward, monthly and intra-month basis unhedged.

In addition, the risk limits allow for the sale of excess in-the-money generation to flatten the overall portfolio position, the purchase of physical power on an as-needed basis to cover a short, but no physical sales are allowed without Duke Energy Global Risk Management approval. Furthermore, the policy provides that native positions should be managed to stay within certain limits: for

peak periods -1000 MW to +500 MW for native load, and for off peak periods - 1,500 MW to +500 MW.

Regarding capacity, Duke Energy Indiana may hedge its positions on a rolling current year plus three-year basis. In addition, speculative trading and wash trades[1] are expressly prohibited.

There are also set parameters for buying and selling natural gas, coal and emission allowances in the Duke Energy regulated electric risk limits that have been approved by senior management.

Q. DOES DUKE ENERGY INDIANA FOLLOW THESE GUIDELINES AND LIMITS?

A. Yes, Duke Energy Indiana strictly follows both the Commission-approved and the Duke Energy corporate parameters and risk limits for purchases, sales, and hedging activities.

Q. WHY DOES DUKE ENERGY INDIANA ENGAGE IN HEDGING FOR BOTH NATURAL GAS AND POWER PURCHASES?

A. Generally speaking, the Company will place hedges to mitigate price volatility exposure and to increase price certainty for customers – by reducing customers' exposure to price volatility, we are also reducing rate volatility. It is important to keep in mind that hedging, by definition, is not done to reduce overall costs or rates, rather the goal is to mitigate price risk and reduce customers' cost volatility.

[1] A "wash trade" is a form of market manipulation in which an investor simultaneously sells and buys the same financial instruments to create misleading, artificial activity in the marketplace.

The forward hedges for December 2021 were reasonable and economic at the time they were entered into. Though they did not reduce customers' cost in that month due to extremely mild weather, they did reduce exposure to volatility by assuring the Company (and our customers) of a fixed price for wholesale energy for the volumes hedged. Notably, even though reducing overall costs is not the purpose of engaging in hedging, Duke Energy Indiana's hedging practices in other time periods have reduced overall costs as well as price volatility, and customers have been the recipients of that lower volatility and lower overall costs.

As part of the hedging decision criteria for position management, hedging transactions are only considered when the model analytics demonstrate transactions are economic at the time. Equally important, hedges are executed only to get to a balanced position (while leaving at least 150 MW unhedged) - that is, we never speculate on prices; we are mitigating price risk for our committed load by entering into transactions that are economic given our energy position and that are projected to cap our energy price risk for the power hedged.

Q. HOW RELIANT IS DUKE ENERGY INDIANA ON THE WHOLESALE POWER MARKETS?

A. As the Commission knows, the Company has made summer reliability purchases for a number of years and has always made "economic" purchases when power could be purchased for less than the cost of the next increment of on-system generation. Even with the Company's generally low-cost on-system resources, we purchased approximately 10.4 million MWHs of energy in 2021 or

approximately 35% of our native load needs from MISO to serve our native load requirements, at a cost of approximately $442 million. However, our annual purchased power volumes and costs will vary year-by-year.

As the testimonies of Messrs. Daniel and Swez explain, starting in 2021, our utilization of the wholesale market was somewhat higher than normal, given the challenges that Duke Energy Indiana began to face with the coal supply chain. As a reference, from 2015 through 2020, approximately 20% of native customers' load needs were served by purchased power from MISO. Because of this additional utilization and forecasted position based on our modeling, it was prudent to purchase hedges for December 2021, to mitigate our customers' added exposure to wholesale power markets.

Q. CAN YOU PLEASE DESCRIBE IN MORE DETAIL THE DECEMBER 2021 HEDGES YOU MENTIONED ABOVE?

A. Yes. Again, as the testimonies of Messrs. Daniel and Swez explain, in order to preserve coal for the winter period of high demand, the Company implemented a price adder to its MISO offers, which made some of the Company's generation units uneconomic to produce energy at the prevailing market prices at that time. As a result, native customers were forecasted to buy substantially more purchased power from MISO market in December 2021. In order to hedge our customers' increased exposure to market price volatility, the Company purchased in the forward market a larger than normal amount of financial hedges for December, a total 1,475MWs of on-peak monthly hedge contracts and 1,350MWs of off-peak

monthly hedge contracts. As a comparison, the Company did not purchase any monthly hedges for December 2020 because sufficient economic generation was expected to be available for customers' load.

While our customers were protected from the possibility of price spikes in the month, the actual weather was unseasonably mild in the Company's service area in December 2021, and was the second warmest on record since 1923. This mild weather drastically reduced actual demand for heating and power generation, which resulted in lower daily power and natural gas prices than what the Company paid for the hedges in the forward market. Much lower-than-expected consumption of natural gas in December 2021 also changed the market's expectation of storage balance at the end of winter 2022.

In December 2021, the actual MISO Day-ahead LMP turned out to be much lower than the forward market prices before the month started, averaging approximately $49.40/MWH for on-peak hours and approximately $39.31/MWH for off-peak hours, approximately $20/MWH below the Company's hedged prices, for a net cost to the Company of $22,063,830.

Q. PLEASE DESCRIBE HOW THESE FINANCIAL ENERGY PRICE HEDGE CONTRACTS WORK.

A. A financial hedge contract is simply a "contract for differences." A contract for difference is a contract between two parties, Buyer and Seller, stipulating that Seller will pay to Buyer the difference between the current price of an asset or commodity and its market price at time of settlement. (Or vice versa, if the

difference is negative, then Buyer pays to Seller.) In the case of wholesale energy, Seller (who does not necessarily own any underlying assets to produce physical energy) enters into a contract with Buyer (in this case, Duke Energy Indiana), agreeing to pay Buyer the differential between the fixed contract price (equivalent to the market price of power at the time the contract was entered into), and the market settlement price (i.e., the Day-Ahead or Real-Time MISO LMP price as specified in the contracts) of power at the time the contract is settled. If the fixed contract price is higher than the LMP price, then Buyer pays the differential. If the fixed contract price is lower than the spot LMP price, then Seller pays Buyer the differential.

In calendar year 2021, some of Duke Energy Indiana's forward energy price hedge transactions settled above the spot MISO LMP price, some settled below the spot MISO LMP price, with a net overall cost to Duke Energy Indiana of approximately $8 million (retail jurisdictional portion). Including results from natural gas hedging activities, Duke Energy Indiana's customers realized a net overall gain of $12.47 million for calendar year 2021.

Q. THE TESTIMONY OF MR. GUERRETTAZ STATED THAT "THE DOLLAR IMPACT OF THE [COMPANY'S] HEDGING PROGRAM HAS HAD SIGNIFICANT SWINGS" RECENTLY. CAN YOU PLEASE ADDRESS THIS?

A. Yes. Both stronger power and gas prices and big weather swings in 2021 contributed to higher volatility in hedging results. In comparison, calendar year

2019 saw average monthly on-peak price at day-ahead MISO Indiana Hub at $31.21/MWH with a range between $26.53/MWH and $38.65/MWH. For calendar year 2020, the average was $26.73/MWH and the range was between $22.04/MWH and $32.59/MWH. For calendar year 2021, average price jumped to $48.78/MWH and the price range expanded to between $26.52/MWH and $82.68/MWH.

Natural gas prices exhibited similar volatility with the 2021 average settlement price at Chicago Citygate at $5.19/Mmbtu, more than double from $2.41/Mmbtu in 2019 and $1.88/Mmbtu in 2020. Calendar year 2021 also saw monthly prices as low as $2.47/Mmbtu and as high as $22.75/Mmbtu. These larger swings in market prices led to the larger swings in hedging results.

Q. WHY, IN YOUR OPINION, WERE THESE TRANSACTIONS REASONABLE AND ADVISABLE AT THE TIME THEY WERE ENTERED INTO?

A. Each of these transactions, in terms of price, were projected to be less expensive than producing the energy by committing uneconomic incremental generation units on our own system. And, each of these transactions, in terms of volume, was projected to be needed to economically meet our native load customers' energy requirements. All of these transactions were made at arms' length and were made at prevailing market prices at the time of the transaction.

Q. IS THE COMPANY CONSIDERING REVIEWING ITS HEDGING PROGRAM AS A RESULT OF THE INCREASES IN ENERGY PRICES SEEN RECENTLY IN MISO?

A. Yes, we are open to reviewing our hedging program – especially with our hindsight knowledge of the recent unprecedented increases in energy prices. The Company continues to be willing to meet with the OUCC and our industrial customers to discuss any going forward changes to its hedging program – and, should the Commission believe it's warranted, is also willing to engage a third-party consultant to review Duke Energy Indiana's current program and potentially offer suggestions or modifications going forward. Duke Energy Indiana is willing to sit down with the OUCC, the Commission Staff, and our industrial customers, and discuss the price volatility risks we face, the price risk tolerances of our customers, and the appropriate objectives for Duke Energy Indiana's hedging strategy.

Q. DOES THIS CONCLUDE YOUR REBUTTAL TESTIMONY?

A. Yes, it does.

VERIFICATION

I hereby verify under the penalties of perjury that the foregoing representations are true to the best of my knowledge, information and belief.

Signed: _____ Dated: June 9, 2022

Wenbin (Michael) Chen