

TESTIMONY OF WENBIN (MICHAEL) CHEN
MANAGER, MIDWEST TRADING
DUKE ENERGY BUSINESS SERVICES LLC
ON BEHALF OF

DUKE ENERGY INDIANA, LLC

CAUSE NO. 38707-FAC 125 BEFORE THE
INDIANA UTILITY REGULATORY COMMISSION

IURC
PETITIONER'S

EXHIBIT NO. 3

DATE 9-17-20

REPORTER AT

I. INTRODUCTION

1 Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

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

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

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

8 Q. PLEASE STATE YOUR EDUCATIONAL AND PROFESSIONAL

9 BACKGROUND.

10 A. I received a Bachelor's degree in Economics from Shanghai Maritime University
11 and a Master's degree in Business Administration from The Ohio State
12 University. I also hold the Chartered Financial Analyst ("CFA") designation
13 conferred by the CFA Institute and I am a Financial Risk Manager ("FRM")
14 certified by the Global Association of Risk Professionals.

15 I was employed by China Merchants Group in Hong Kong and later its
16 affiliate Transocean Grabbulk Pool Ltd in Singapore from 1993 to 2000. During

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1 these seven years I held various positions in marketing, operations, and bulk
2 carrier chartering. In 2002, I joined Cinergy Services, Inc. (a predecessor of Duke
3 Energy Business Services LLC) as a Portfolio Analyst and have worked in the
4 Fuels & Systems Optimization group since then. I assumed my current position
5 on January 1, 2014.

6 **Q. WHAT ARE YOUR DUTIES AND RESPONSIBILITIES AS MANAGER,**
7 **POWER TRADING MIDWEST?**

8 A. I am responsible for power and natural gas hedging programs for Duke Energy
9 Indiana and Duke Energy Kentucky. The primary goal of the hedging programs
10 is to reduce impact of energy market price volatility to the Company's load and
11 generation portfolio. I also manage capacity positions, Financial Transmission
12 Rights ("FTR") positions, load forecast, demand bids submission, and financial
13 scheduling for the two companies.

14 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**
15 **PROCEEDING?**

16 A. I will update the Company's gas and power hedging activities that have been
17 described in previous FAC proceedings.

18 **II. REALIZED NATIVE NATURAL GAS HEDGING RESULTS**

19 **Q. DO YOU BELIEVE THAT IT IS REASONABLE FOR THE COMPANY**
20 **TO ENTER INTO HEDGES AGAINST GAS PRICES?**

21 A. Yes, I do.

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1 **Q. PLEASE EXPLAIN WHY YOU BELIEVE THAT SUCH ACTIONS ARE**
2 **REASONABLE.**

3 A. Duke Energy Indiana continues to rely on natural gas as fuel for the Company's
4 gas generation plants and natural gas prices have historically been volatile. From
5 March 2006 through May 2020, prompt month Henry Hub natural gas prices have
6 settled between \$1.55 and \$13.58 per Mmbtu. The lowest settlement price of
7 \$1.55/Mmbtu in this wide range happened during this FAC reconciliation period
8 on April 2, 2020, when COVID-19 pandemic related lockdowns and other
9 restriction measures significantly reduced demand for natural gas. As of July 10,
10 2020, prompt month natural gas contract settled at \$1.82/Mmbtu, close to the low
11 end of its historical price range. Furthermore, because Duke Energy Indiana's
12 natural gas demand is somewhat linked to weather, the Company is further
13 exposed to such fluctuations in natural gas prices. The natural gas market is
14 highly visible and liquid and there are a number of hedging tools available to help
15 protect against such price fluctuations. In my opinion, it only makes sense for the
16 Company to take advantage of these tools.

17 **Q. HAS THE COMPANY COMPLETED ANY GAS HEDGING**
18 **TRANSACTIONS SINCE THE LAST UPDATE TO THE COMMISSION**
19 **IN THE FAC124 PROCEEDING?**

20 A. Yes. The Company used hedging tools available on InterContinental Exchange
21 ("ICE") and purchased hedges based on forecasted forward expected native gas
22 burns for the period from April 2020 through October 2020. As discussed in

1 FAC108 testimony, in addition to Henry Hub future contracts that the Company
2 always used as a hedging tool, DEI made an improvement to gas hedging strategy
3 and started using two new types of financial future contracts since 2015 to convert
4 Henry Hub hedging trades to a hedging position that settles at Chicago Citygate
5 daily gas index. This improvement was inspired by significant price separation
6 between Henry Hub and Chicago Citygate gas price that occurred in the winters
7 of 2014 and 2015, due to increasing production of shale gas in the Midwest. The
8 cost of natural gas the Company pays for its gas generation units now moves more
9 closely with Chicago Citygate daily gas index and sometimes disconnects from
10 Henry Hub price.

11 **Q. WHAT WERE THE RESULTS OF THE GAS HEDGING APPLICABLE**
12 **TO THE RECONCILIATION PERIOD FOR THIS FAC PROCEEDING?**

13 A. Natural gas purchases made to hedge March 2020, April 2020, and May 2020
14 native gas burn realized a loss of \$149,200. These gas hedges were purchased
15 prior to spring outage season to reduce volatility and lock in certainty of price
16 following the Duke Energy Indiana hedge plan. During this FAC reconciliation
17 period, market price for gas realized lower values than the hedged prices,
18 attributable to lower power generation demand and lower gas heating demand
19 caused by the COVID-19 pandemic.

Realized Native Natural Gas Hedging Results

Mar 2020	Apr 2020	May 2020
(\$142,803)	91,798	(98,195)

Low spot gas prices made the company's gas generation plants more economic to generate power and increased expected native gas burn. As with our past practice, the Company will evaluate gas burn needs regularly and may purchase gas hedges as needed and when it is prudent to do so.

III. REALIZED NATIVE POWER HEDGING RESULTS

Q. DOES THE COMPANY CONDUCT OTHER HEDGING ACTIVITIES?

A. Yes, Duke Energy Indiana also hedges the costs of purchased power. Power prices have been volatile since the beginning of the Midcontinent Independent System Operator, Inc. ("MISO") energy markets in April of 2005. Through the end of May 2020, the average peak daily Indiana Hub Day Ahead LMP was \$43.13. For the same period, average daily Indiana Hub Real Time LMP was \$41.98/MWH. However, there was a wide range of prices. Day Ahead daily price settled between \$17.83 and \$398.63 while Real Time price went from as low as \$15.57/MWH to as high as \$298.68/MWH. It's worth noting that both the lowest daily Day Ahead and Real Time prices occurred in this FAC reporting period. There were 63 days where Day Ahead daily price exceeded \$100/MWH and 73 days in the same period that we experienced daily Real Time peak power prices higher than \$100/MWH. Moreover, we observed hourly Indiana Hub, and

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1 CIN Hub before 1/1/2012, Day Ahead or Real Time LMP over \$100/MWH in
2 most months since April of 2005, with the highest LMP at \$1,966.29/MWH and
3 the lowest at negative \$242.96/MWH. To help hedge against this volatility, if the
4 position warrants, the Company enters into forward power purchase contracts that
5 are financially settled on a specific future date at MISO Indiana Hub Day-Ahead
6 or Real Time LMPs.¹ The applicable LMPs on the settlement date for these
7 contracts may be higher or lower than the price the Company paid for the forward
8 contract and the Company will either pay or be refunded the difference.

9 **Q. WHAT PRICE DOES THE COMPANY PAY FOR THESE POWER**
10 **CONTRACTS?**

11 A. The Company paid the then current market price for the March 2020 on-peak
12 monthly forward contracts in the amount of \$28.60/MWH. In addition, the
13 Company paid the then market prices between \$19.50/MWH and \$34/MWH to
14 hedge portfolio imbalances in short-term daily and weekly markets.

15 **Q. HOW IS IT DETERMINED WHETHER TO ENTER INTO FORWARD**
16 **POWER HEDGING TRANSACTIONS?**

17 A. When entering into these transactions, Duke Energy Indiana measures the
18 purchase price for the forward power purchase contract against the expected cost
19 of operating the incremental Company generation units needed to meet the
20 forecasted load. For example, if our forecasted native load would require the

¹ Since the onset of MISO energy markets, almost all bi-lateral contracts have been “financial” rather than “physical” contracts.

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1 Company to operate a gas turbine peaking plant at a cost of \$100/MWH and we
2 could purchase a forward power purchase contract at a cost of \$80/MWH, Duke
3 Energy Indiana would make that purchase, essentially fixing a price for purchased
4 power at a cost lower than the expected cost of operating our own generation.

5 The Company never makes a forward power purchase unless the cost of such
6 purchase is less than the cost of running the incremental generating unit needed to
7 meet the forecasted load.

8 If, on the settlement date, the LMP is higher than the forward contract
9 price, the Company would be credited the difference from the counterparty. On
10 the other hand, if the LMP is lower than the forward contract price, the Company
11 would have to pay the difference to the counterparty. The actual purchase of
12 power or dispatch of units to serve native load would still be done on an economic
13 basis.

14 **Q. WHEN DID THE COMPANY BEGIN THIS HEDGING PROGRAM?**

15 A. Duke Energy Indiana started making such purchases for January 2006, and made
16 forward power purchases for each month of 2006, and have generally continued
17 that practice to the present.²

18 **Q. WHAT WERE THE RESULTS FOR MARCH THROUGH MAY 2020?**

² As noted later in my testimony, Duke Energy Indiana's power hedging practices subsequent to the effectiveness of a settlement with the Indiana Office of Utility Consumer Counselor and the Commission's Order on June 25, 2008, in Cause No. 38707-FAC68-S1 are consistent with such settlement and Commission Order.

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1 A. The final realized value of the native power hedges for this period was \$455,954
2 negative, resulting from forward monthly transactions, intra-month transactions,
3 as well as any MISO virtual trades. The negative result is primarily attributable to
4 COVID-19 pandemic impact on load as well as mild weather, which drove natural
5 gas price into a sustained downward trend and reached the lowest level in the last
6 twenty years. Power prices followed the gas price lower in these months. As a
7 result, the hedges purchased to mitigate native exposure realized a loss.

8 **Realized Native Power Hedging Results**

Mar 2020	Apr 2020	May 2020
(\$469,717)	\$27,412	(\$13,649)

9
10 As noted in the pre-filed testimony of Ms. Suzanne E. Sieferman, the net realized
11 results for the reconciliation period from the power hedging activity exclusive of
12 MISO virtual trades, and including prior period adjustments, was a loss of
13 \$473,519.

14 Including net realized results from native natural gas hedging results
15 mentioned above, total cost to the customers for this FAC filing is \$622,719.

16 **Q. HAVE THERE BEEN ANY CHANGES WITH REGARDS TO HEDGING**
17 **PRACTICES THROUGH MISO?**

18 A. No. Duke Energy Indiana did not make changes to the Company's hedging
19 practices. As mentioned in the FAC 100 filing, the Company restarted using
20 virtual trades as a hedging tool for expected forced outages in the Real-Time

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1 market because of heightened LMP price volatility caused by gas supply issues
2 and extremely cold weather experienced in the past winter.

3 **Q. CAN YOU EXPLAIN THE MISO VIRTUAL TRADES MENTIONED**
4 **ABOVE?**

5 A. Yes. As a MISO market participant, the Company must offer all available
6 generation to the MISO Day-Ahead energy market. If a generation unit clears the
7 Day-Ahead market, it receives a financially binding award to sell energy to MISO
8 at Day-Ahead LMP. If the unit becomes unavailable in the MISO Real-Time
9 market, it is then obligated to buy back energy it sold in the Day-Ahead market,
10 but at the Real-Time hourly LMP price. In such case, the unit is exposed to the
11 price risk between Day-Ahead LMP and Real-Time LMP. In order to mitigate
12 this risk, when there is a valid concern that a generation unit could become
13 unavailable in the Real-Time market, virtual trades can be used to buy back all or
14 a portion of energy it sold at the Day-Ahead LMP and at the same time, sell the
15 unit's energy output in the Real-Time market at Real-Time LMP. By doing so,
16 the unit is no longer subject to the difference between Day-Ahead LMP and Real-
17 Time LMP.

18 A virtual transaction itself has two legs. Based on the way the Company
19 uses virtual trades as a hedging tool, the first leg is to buy back a unit's Day-
20 Ahead energy sale to MISO, and the second leg is to sell the same amount of
21 energy to the MISO Real-Time market. Therefore, the above-mentioned hedging
22 strategy has 3 transactions:

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1 a) Sell unit energy to MISO at Day-Ahead LMP

2 b) Buy unit energy back from MISO at Day-Ahead LMP

3 c) Sell unit energy to MISO at Real-Time LMP

4 The transactions in b) and c) are a virtual trade. Since a) and b) offset each other,
5 the end result is c), *i.e.*, sell unit energy to MISO at Real-Time LMP.

6 **Q. IS THE COMPANY CONTINUING ITS POWER HEDGING**
7 **PRACTICES?**

8 A. Yes. Duke Energy Indiana made monthly native load forward power hedges for
9 June 2020 during this reconciliation period to hedge price volatility in summer
10 high demand season. In addition, the Company made intra-month native
11 purchases and sales in June 2020 and July 2020 to hedge changes in forecasted
12 load, changes in economic generation, and forced outages. In any event, the
13 Company's methodology for making purchases has remained consistent. If the
14 forward purchase price of power is less than the cost of running the incremental
15 generating units required to meet the forecasted load, then Duke Energy Indiana
16 may purchase a forward power hedge. Of course, forward power prices, gas
17 prices, emission allowance prices, weather conditions, expected load, and
18 availability of generating units, among other factors, are constantly changing. As
19 conditions change, the Company would evaluate these conditions and adapt.
20 Using sophisticated computer analysis, Duke Energy Indiana constantly assess the
21 Company's forward power positions on a monthly, daily and even intra-day basis.

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1 The goal is to maintain forward power hedges only in an amount necessary to
2 economically cover our forecasted load.

3 **Q. HOW DID THE COMMISSION'S JUNE 25, 2008 ORDER IN CAUSE**
4 **NO. 38707 FAC68-S1 AFFECT THE COMPANY'S CURRENT HEDGING**
5 **METHODOLOGY?**

6 A. The Company's hedging methodology is consistent with the Settlement
7 Agreement with the OUCC and the Commission order. Accordingly, beginning
8 on August 1, 2008, Duke Energy Indiana has not utilized its flat hedging
9 methodology. Rather, Duke Energy Indiana will hedge up to approximately flat
10 minus 150 MW on a forward, monthly and intra-month basis, and up to
11 approximately flat on a Day Ahead/Real-Time basis. This methodology will
12 leave the Company with at least approximately 150 MW of expected load
13 unhedged on a forward forecasted basis.

14 **Q. HAS THE COMPANY MADE ANY RECENT CHANGES TO ITS POWER**
15 **HEDGING PLANS?**

16 A. No.

17 **Q. DO YOU BELIEVE THE COMPANY'S GAS AND POWER HEDGING**
18 **PRACTICES ARE REASONABLE?**

19 A. Yes, I do. The Company never speculates on future prices, but rather uses a
20 sophisticated model to determine when it is economic to purchase and sell on a
21 forward basis. The practice is economic at the time the decision is made and
22 reduces volatility because Duke Energy Indiana is transacting in a less volatile

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1 forward market, as opposed to more volatile spot markets (*i.e.*, the MISO day
2 ahead and real-time markets).

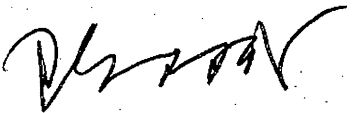
3 Just as an electric reserve margin reduces risk that capacity may not be
4 available when it is needed, Duke Energy Indiana believes its power hedging
5 practice benefits customers by reducing customers' risk of paying potentially
6 higher spot market prices. Further, as stated above, our practices going forward
7 will be consistent with the Commission Order in Cause No. 38707 FAC68-S1.

8 **Q. DOES THIS CONCLUDE YOUR PREFILED DIRECT TESTIMONY?**

9 **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: 
Wenbin (Michael) Chen

Dated: 07/31/2020