

STATE OF INDIANA

INDIANA UTILITY REGULATORY COMMISSION

PETITION OF DUKE ENERGY INDIANA, LLC)
PURSUANT TO IND. CODE §§ 8-1-2-42.7 AND)
8-1-2-61, FOR (1) AUTHORITY TO MODIFY)
ITS RATES AND CHARGES FOR ELECTRIC)
UTILITY SERVICE THROUGH A STEP-IN OF)
NEW RATES AND CHARGES USING A)
FORECASTED TEST PERIOD; (2) APPROVAL)
OF NEW SCHEDULES OF RATES AND)
CHARGES, GENERAL RULES AND)
REGULATIONS, AND RIDERS; (3))
APPROVAL OF A FEDERAL MANDATE)
CERTIFICATE UNDER IND. CODE § 8-1-8.4-1;)
(4) APPROVAL OF REVISED ELECTRIC)
DEPRECIATION RATES APPLICABLE TO)
ITS ELECTRIC PLANT IN SERVICE; (5))
APPROVAL OF NECESSARY AND)
APPROPRIATE ACCOUNTING DEFERRAL)
RELIEF; AND (6) APPROVAL OF A)
REVENUE DECOUPLING MECHANISM FOR)
CERTAIN CUSTOMER CLASSES)

CAUSE NO. 45253

VERIFIED DIRECT TESTIMONY
OF
DONALD L. SCHNEIDER, JR.

On Behalf of Petitioner,
DUKE ENERGY INDIANA, LLC

Petitioner's Exhibit 28

July 2, 2019

DUKE ENERGY INDIANA 2019 BASE RATE CASE
DIRECT TESTIMONY OF DONALD L. SCHNEIDER, JR.

**DIRECT TESTIMONY OF DONALD L. SCHNEIDER, JR.
GENERAL MANAGER, ADVANCED METERING INFRASTRUCTURE
("AMI") PROGRAM MANAGEMENT
DUKE ENERGY BUSINESS SERVICES, LLC
ON BEHALF OF DUKE ENERGY INDIANA, LLC
BEFORE THE INDIANA UTILITY REGULATORY COMMISSION**

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I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is Donald L. Schneider, Jr., and my business address is 400 South Tryon Street, Charlotte, North Carolina.

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

A. I am employed by Duke Energy Business Services, LLC ("DEBS"), as General Manager, Advanced Metering Infrastructure ("AMI") Program Management. DEBS provides various administrative and other services to Duke Energy Indiana, LLC ("Duke Energy Indiana" or the "Company") and other affiliated companies of Duke Energy Corporation ("Duke Energy").

Q. PLEASE DESCRIBE YOUR RESPONSIBILITIES AS GENERAL MANAGER, ADVANCED METERING INFRASTRUCTURE ("AMI") PROGRAM MANAGEMENT.

A. My duties and responsibilities include managing the project execution of all AMI or "smart meter" related projects for all Duke Energy jurisdictions, including Duke Energy Indiana. I am also responsible for reporting and mapping related to AMI, as well as system integrations and upgrades involved in the control of AMI communication networks.

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1 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL**
2 **BACKGROUND.**

3 A. I received a Bachelor of Science of Degree in Electrical Engineering from the
4 University of Evansville in 1986. Upon graduation, I was employed by Duke
5 Energy Indiana (then known as Public Service Indiana) as an electrical engineer.
6 Throughout my career with Duke Energy, I have held various positions of
7 increasing responsibility in the areas of engineering and operations, including
8 distribution planning, distribution design, field operations, and capital budgets.
9 Prior to my current position with the Company, I was General Manager, Midwest
10 Premise Services, responsible for managing all of Duke Energy's Midwest
11 premise service and meter reading departments. In 2008, prior to the Duke
12 Energy/Progress Energy merger, I was promoted to a position responsible for
13 managing the project execution for all Grid Modernization projects in the field,
14 including both AMI and Distribution Automation devices, for all legacy Duke
15 Energy jurisdictions. In 2012, following the Duke Energy/Progress Energy
16 merger, I was named to my current position.

17 **Q. ARE YOU A REGISTERED PROFESSIONAL ENGINEER LICENSED IN**
18 **THE STATE OF INDIANA?**

19 A. Yes. I have been registered as a professional engineer with the State Board of
20 Registration for Professional Engineers in the State of Indiana since 1995.

21 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS**
22 **PROCEEDING?**

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1 A. The purpose of my testimony is to discuss the history of AMI in Indiana and to
2 describe the Company's progress in deploying AMI technology across its Indiana
3 service territory. I also highlight how AMI technology provides customers with
4 greater convenience, control, and transparency over their energy usage.

5 **II. AMI IMPLEMENTATION**

6 **Q. WHAT IS AMI?**

7 A. AMI refers to a comprehensive metering solution – including meters,
8 communication devices, communication networks, and back office systems –
9 used to create two-way communications between customer meters and the utility.
10 It is an overall metering solution, as opposed to just a new type of meter, that
11 allows for remote meter reading, eliminating walk-by and/or drive-by meter
12 reading. An AMI system consists of an advanced meter, a Field Area Network
13 (“FAN”), and back-office systems that manage and maintain data collected from
14 the meters. AMI meters - often referred to as “smart meters” - are digital
15 electricity meters that have advanced features and capabilities beyond traditional
16 electricity meters. Some of the advanced features include the capability for two-
17 way communications, interval usage measurement, tamper detection, voltage and
18 reactive power measurement, and net metering capability. This Duke Energy
19 standard AMI system utilizes a radio frequency (“RF”) mesh architecture for the
20 FAN, this allows the meters within the mesh network to establish an optimized
21 RF communication path to a collection point through other meters or, in some
22 cases, through network range extenders.

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1 **Q. HAS THE COMPANY PRESENTED INFORMATION TO THE**
2 **COMMISSION ON AMI BEFORE?**

3 A. Yes. In 2015, Duke Energy Indiana requested that AMI be included as an eligible
4 project under the TDISC Statute (Ind. Code ch. 8-1-39) in Cause No. 44720
5 (hereinafter the "TDISC Docket"). As part of the Settlement Agreement in that
6 case dated March 7, 2016 and approved by this Commission on June 29, 2016
7 (hereinafter the "TDISC Settlement"), AMI was removed from recovery under the
8 TDISC Statute, and approved for deferral recovery.

9 **Q. PLEASE DESCRIBE THE STATUS OF IMPLEMENTATION OF AMI**
10 **ACROSS THE DUKE ENERGY INDIANA SYSTEM.**

11 A. Duke Energy Indiana began deployment of AMI in 2016. As of May 31, 2019,
12 Duke Energy Indiana has installed approximately 692,000 smart meters and the
13 Company is expected to continue deployment through the end of 2019. See
14 Petitioner's Exhibit 28-A (DLS) for an update on the deployment schedule. As
15 described below, the Company has begun to offer new customer services and
16 programs enabled by smart meters.

17 **Q. DOES THE COMPANY CURRENTLY OFFER AN ALTERNATIVE**
18 **SOLUTION FOR CUSTOMERS WHO DO NOT WISH TO HAVE A**
19 **SMART METER?**

20 A. Yes. The Commission approved the Advanced Meter Opt-Out Tariff, on June 13,
21 2018 in Cause No. 44963 (hereinafter the "Opt-Out Program"), which addresses
22 the customers who have objected to the installation of a smart meter. The

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1 Company began enrolling customers in the opt-out program in the fourth quarter
2 of 2018, after the completion of necessary IT system changes. Duke Energy
3 Indiana has been reaching out to the customers who objected to a smart meter
4 installation, and has enrolled 839 customers in the opt-out program through the
5 end of May 2019.

6 **Q. HAS THE COMPANY OFFERED ANY OTHER METER READING**
7 **OPTIONS IN THE PAST?**

8 A. Yes. Prior to the deployment of AMI, Duke Energy Indiana offered a residential
9 “EZ-Read” option for customers who had meters that were difficult to access or
10 read. Due to the implementation of AMI technology, this option is no longer
11 needed and is now closed to new participants. In accordance with the Stipulation
12 and Settlement Agreement filed on March 8, 2018 in Cause No. 44963 and
13 approved by this Commission in an Order dated June 13, 2018, customers on the
14 “EZ Read” option could “continue on the program unless and until Duke Energy
15 Indiana receives a final order in its next base rate case that therein ends the self-
16 read program.”

17 **Q. IS THE COMPANY SEEKING TO END THE “EZ-READ” OPTION AS**
18 **PART OF THIS PROCEEDING?**

19 A. No. The Company is not seeking to end the self-read program for current
20 participants; however, the Company is not accepting new participants. The
21 Company may seek to end the self-read program for current participants in a
22 future proceeding.

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1 **Q. IS THE COMPANY SEEKING ANY CHANGES IN THE ADVANCED**
2 **METER OPT-OUT TARIFF IN THIS PROCEEDING?**

3 A. No. The Advanced Meter Opt-Out Tariff is relatively new and the ultimate
4 charges were the result of a Settlement Agreement in Cause No. 44963. Sheet
5 No. 59, Advanced Meter Opt-Out was attached to the direct testimony of Duke
6 Energy Indiana witness Mr. Roger Flick, as part of Petitioner's Exhibit 9-A
7 (RAF) and 9-B (RAF). It reflects the same \$75 dollar one-time fee and a \$17.50
8 monthly fee to cover meter reading and other costs associated with the opt-out
9 choice.

10 **III. AMI DIRECTLY PROVIDED AND ENABLED**
11 **CUSTOMER BENEFITS**

12 **Q. DOES THE IMPLEMENTATION OF AMI DELIVER BENEFITS TO THE**
13 **COMPANY'S CUSTOMERS?**

14 A. Yes. The AMI technology is customer-focused; it directly provides and also
15 enables greater convenience, control and transparency over a customer's energy
16 consumption.

17 **Q. HOW DOES AMI DELIVER THE BENEFIT OF CONVENIENCE TO**
18 **CUSTOMERS?**

19 A. With remote disconnect/reconnect capability, AMI technology directly provides
20 customers the convenience of not needing to schedule a technician to visit their
21 premise when they request their electric service be disconnected or reconnected.
22 Likewise, customers who become eligible for disconnection for non-payment will
23 have power restored more quickly through the remote reconnect capability than

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1 they would if Duke Energy Indiana had to send a technician on site. Additionally,
2 customers benefit from the greater convenience provided by the capability for
3 Duke Energy Indiana to perform regular meter reads and off-cycle meter reads
4 remotely, avoiding customer appointments in some cases.

5 The AMI technology also enables customer convenience through Pick
6 Your Due Date. This optional program allows eligible customers to select their
7 desired billing due date as any date from the 1st to the 31st of the month, better
8 aligning customers' needs and giving them the convenience to choose the day of
9 the month they want to pay their bill. There are about 3,600 customers enrolled in
10 the Pick Your Due Date program.

11 **Q. ARE THERE BENEFITS DELIVERED BY AMI THAT GIVE**
12 **CUSTOMERS MORE CONTROL OVER THEIR ENERGY USAGE?**

13 A. Yes. Usage Alerts is another program enabled by the AMI technology. The
14 Usage Alerts program provides eligible customers with an alert at the midpoint of
15 their billing cycle showing their accumulated charges and a forecast of their
16 month-end bill. Through Usage Alerts, customers can customize their experience
17 by choosing to receive threshold alerts that notify them when their charges are
18 approaching/exceeding their monthly budget. Customers have the option to
19 further set and change their alert preferences in the usage alert management tool
20 and set a budgeted dollar amount and change their alert channel to text message.
21 There are currently about 319,000 Duke Energy Indiana customers enrolled in
22 Usage Alerts, of the approximately 692,000 customers with smart meters.

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1 **Q. HOW DOES AMI DELIVER THE BENEFIT OF INCREASED**
2 **TRANSPARENCY AND COMMUNICATION WITH CUSTOMERS?**

3 A. The AMI technology directly provides customers having a smart meter access to
4 view and download detailed information about their hourly and daily usage
5 patterns through the Duke Energy customer portal, allowing them to closely
6 monitor their usage so they can make more informed choices regarding how they
7 use energy, and potentially change their energy usage behaviors to help reduce
8 energy costs.

9 Additionally, AMI is being integrated into the Company's efforts to
10 increase communications with customers about outages and restoration timelines
11 after a storm.

12 **Q. YOU MENTIONED THE COMPANY IS UTILIZING AMI DURING**
13 **STORM OUTAGES AND RESTORATION. HOW SO?**

14 A. Duke Energy Indiana has the capability to interrogate individual smart meters to
15 determine if customers have power. During the damage assessment phase of a
16 storm, mass meter interrogation capability allows the Company to have a better
17 view of where outages are located on the system. This functionality helps reduce
18 the assessment time, thus reducing outage durations for customers.

19 During the power restoration phase of a storm, the capability of mass
20 meter interrogation enables the Company to determine whether power has been
21 restored to each meter before leaving an area.

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1 Lastly, during the cleanup phase of a storm, the capability of interrogating
2 individual meters can tell the Company when a customer's power has already
3 been restored, saving a truck roll to confirm power has been restored. Since
4 enabling this functionality in May of 2018, the Company has successfully
5 interrogated more than 8,000 meters and avoided the need to send a truck to
6 determine whether power had been restored to those locations.

7 **Q. DID THE COMPANY CONSIDER ANY ENERGY EFFICIENCY /**
8 **DEMAND RESPONSE PROGRAMS LEVERAGING SMART**
9 **THERMOSTATS AND CUSTOMER ENGAGEMENT PLATFORMS IN**
10 **ACCORDANCE WITH THE TDISC SETTLEMENT?**

11 A. Yes. In accordance with the TDISC Settlement, the Company presented
12 information regarding these potential programs at its quarterly Energy Efficiency
13 Oversight Board ("OSB") meeting in the first quarter of 2018 and invited the
14 Environmental Defense Fund ("EDF") to attend the meeting as well as future
15 OSB meetings. While no specific new programs have been offered to customers
16 to date, the Company is actively working with a vendor to bring a new
17 enhancement to its Power Manager demand response program to Indiana
18 customers.

19 The "Bring Your Own Thermostat" enhancement, which should be ready
20 to market to customers in 2020, will allow customers to leverage a smart
21 thermostat to participate in demand response events. The Company believes that

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1 the availability of this program enhancement will enhance the economics around
2 customer utilization of smart thermostats and lead to greater customer adoption.

3 The Company also presented to the OSB an enhancement to its residential
4 “My Home Energy Report” Program that would allow customers to have real-
5 time access to interval usage data via a smart meter usage app. Unfortunately,
6 due to the costs associated with the technology required to provide the real time
7 access, the enhancement is not projected to be cost effective at this time. The
8 Company continues to investigate this enhancement and potential lower cost
9 methods to provide access to the information and will make its OSB aware of any
10 progress toward bringing the enhancement to customers.

11 **IV. AMI DEPLOYMENT COSTS**

12 **Q. ARE COSTS FOR THE AMI IMPLEMENTATION INCLUDED IN THIS**
13 **RATE CASE?**

14 A. Yes. The Company is seeking recovery of deferred amounts for the AMI rollout,
15 including carrying costs, as calculated in accordance with the TDSIC Settlement
16 Agreement, over a 10 year period as discussed in testimony of Duke Energy
17 Indiana witness Ms. Diana Douglas.

18 **Q. HOW DO THE AMI TECHNOLOGY DEPLOYMENT COSTS RELATE**
19 **TO THE COMPANY'S COST BENEFIT ANALYSIS?**

20 A. AMI technology deployment costs are currently projected to be \$146 million,
21 which is less than the Company's estimated cost of \$190.58 million presented in

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1 the TDISC proceeding. The projected AMI technology deployment costs are
2 further described in Confidential Petitioner's Exhibit 28-B (DLS).

3 **Q. WHAT IS DRIVING THE REDUCTION IN DEPLOYMENT COSTS?**

4 A. The majority of the project cost reduction is related to the actual meter and
5 communications equipment hardware. As Duke Energy began AMI meter
6 deployments in other jurisdictions, this triggered meter volume reductions with
7 our supplier Itron. By 2018, the lowest tier price point had been triggered.
8 Additionally, the project was able to arrange direct shipments for the majority of
9 the meters directly to the installation vendor warehouses, eliminating the extra
10 Duke Energy warehouse stores loading charges. The initial Deployment Cost
11 estimate assumed no tier price material reduction, and full stores loading charges.
12 The strength of the Communication Network deployed also eliminated the need
13 for the mesh "Range Extenders" that were initially planned, further reducing the
14 material costs and field installation labor costs.

15 The active AMI deployment in other jurisdictions allowed many back
16 office and support resources to be shared across projects, reducing labor costs.
17 Efficiencies were gained as the systems were upgraded eliminating other
18 forecasted labor needs, such as increased billing support and additional field
19 mitigation resources.

20 **Q. HAS THE COMPANY AVOIDED ANY COSTS RELATED TO THE**
21 **DEPLOYMENT OF AMI?**

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1 A. Yes. For example, the Company has avoided costs it otherwise would have
2 incurred related to rolling a truck for monthly meter reading, off-cycle meter
3 reading, and reconnections. In accordance with the Settlement Agreement dated
4 March 7, 2016 and approved by this Commission on June 29, 2016 in Cause No.
5 44720 the Company has retained all savings and costs avoided associated with the
6 AMI project in between rate cases. However, these cost savings are baked into
7 our test period forecast and all savings will be passed directly onto customers,
8 upon the effective date of rates approved by the Commission in this proceeding.

9 **V. CONCLUSION**

10 **Q. WERE PETITIONER'S EXHIBIT 28-A (DLS) AND CONFIDENTIAL**
11 **PETITIONER'S EXHIBIT 28-B (DLS) PREPARED BY YOU OR UNDER**
12 **YOUR DIRECTION?**

13 A. Yes, they were.

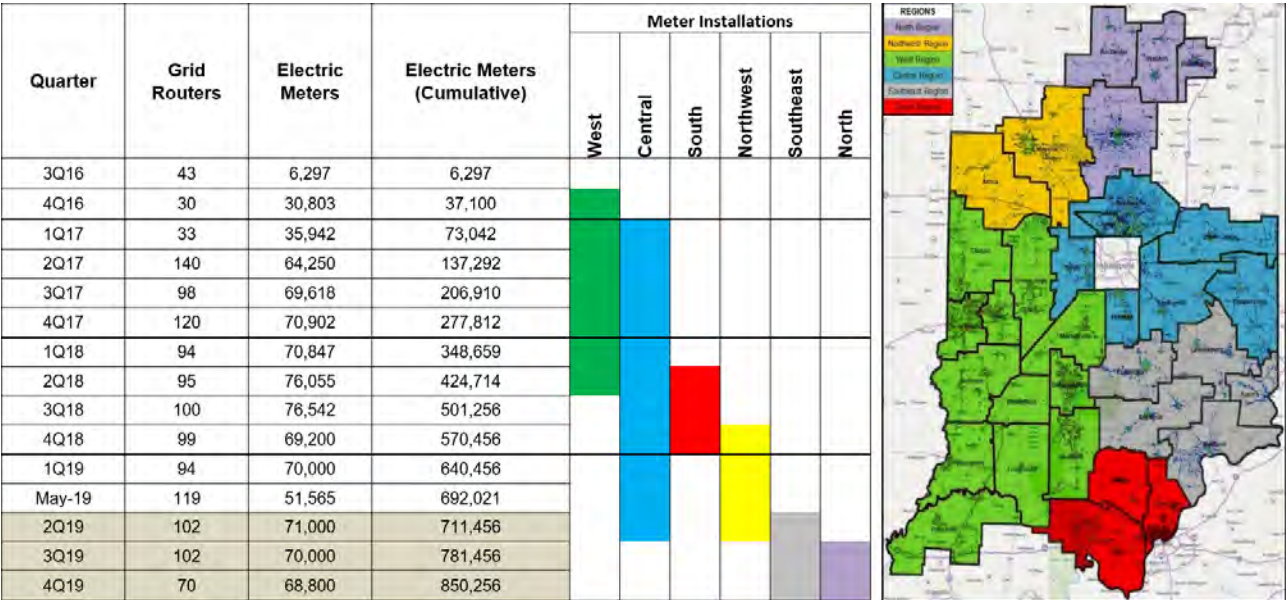
14 **Q. DOES THIS CONCLUDE YOUR PREFILED DIRECT TESTIMONY?**

15 A. Yes, it does.



AMI Deployment Map and Projected Schedule

As of May 31, 2019, the AMI Deployment in Indiana is approximately 81% complete with 692,021 electric meters installed. The deployment is expected to continue through the end of 2019. The chart below shows the status of the deployment by region as well as the projected deployment schedule.



PETITIONER'S EXHIBIT 28-B (DLS) IS CONFIDENTIAL

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: Donald L. Schneider, Jr. Dated: 7/2/2019