

EXHIBIT NO. _____

BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the Application Seeking)	
Approval of Ohio Power Company's)	
Proposal to Enter Into Renewable Energy)	Case No. 18-1392-EL-RDR
Purchase Agreements for Inclusion in the)	
Renewable Generation Rider)	

In the Matter of the Application of Ohio)	Case No. 18-1393-EL-ATA
Power Company to Amend its Tariffs)	

DIRECT TESTIMONY OF
WILLIAM A. ALLEN
ON BEHALF OF
OHIO POWER COMPANY

Filed: September 27, 2018

INDEX TO DIRECT TESTIMONY OF
WILLIAM A. ALLEN

PERSONAL DATA.....	1
PURPOSE OF TESTIMONY.....	3
BACKGROUND INFORMATION LEADING TO THIS FILING	4
BENEFITS OF THE PROPOSED REPAS	6
THE RENEWABLE GENERATION RIDER	10
COST TO A UTILITY IN CONTRACTING RENEWABLE ENERGY PURCHASE AGREEMENTS.....	14
CUSTOMER BILL IMPACTS.....	17

BEFORE
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ON BEHALF OF
OHIO POWER COMPANY

1 **PERSONAL DATA**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is William A. Allen, and my business address is 1 Riverside Plaza, Columbus,
4 Ohio 43215.

5 **Q. BY WHOM ARE YOU EMPLOYED AND WHAT IS YOUR POSITION?**

6 A. I am employed by the American Electric Power Service Corporation (AEPSC) as
7 Managing Director of Regulatory Case Management. AEPSC supplies engineering,
8 regulatory, financing, accounting, and planning and advisory services to the electric
9 operating companies of the American Electric Power System, one of which is Ohio
10 Power Company ("AEP Ohio" or "the Company").

11 **Q. WOULD YOU PLEASE DESCRIBE YOUR EDUCATIONAL AND**
12 **PROFESSIONAL BACKGROUND?**

13 A. Yes. I received a Bachelor of Science in Nuclear Engineering degree from the University
14 of Cincinnati in 1996 and a Master of Business Administration degree from the Ohio
15 State University in 2004.

16 I was employed by AEPSC beginning in 1992 as a Co-op Engineer in the Nuclear
17 Fuels, Safety and Analysis department and upon completing my degree in 1996 was hired
18 on a permanent basis in the Nuclear Fuel section of the same department. In January
19 1997, the Nuclear Fuel section became a part of Indiana Michigan Power Company

1 (I&M) due to a corporate restructuring. In 1999, I transferred to the Business Planning
2 section of the Nuclear Generation Group as a Financial Analyst. In 2000, I transferred
3 back to AEPSC into the Regulatory Pricing and Analysis section as a Regulatory
4 Consultant. In 2003, I transferred into the Corporate Financial Forecasting department as
5 a Senior Financial Analyst. In 2007, I was promoted to the position of Director of
6 Operating Company Forecasts. In that role, I was primarily responsible for the
7 supervision of the financial forecasting and analysis of the AEP System's operating
8 companies, including AEP Ohio. In 2010, I transferred to the Regulatory Services
9 Department as Director of Regulatory Case Management. I was named to my current
10 position in January 2013.

11 **Q. WHAT ARE YOUR RESPONSIBILITIES AS MANAGING DIRECTOR OF**
12 **REGULATORY CASE MANAGEMENT?**

13 A. I am primarily responsible for the supervision, oversight, and preparation of major filings
14 with state utility commissions.

15 **Q. HAVE YOU PREVIOUSLY SUBMITTED TESTIMONY IN ANY REGULATORY**
16 **PROCEEDINGS?**

17 A. Yes. I have previously testified before the Public Utilities Commission of Ohio
18 ("Commission") on behalf of AEP Ohio. I have also submitted testimony or testified
19 before the Michigan Public Service Commission, the Indiana Utility Regulatory
20 Commission, the Kentucky Public Service Commission, the West Virginia Public Service
21 Commission, and the Virginia State Corporation Commission on behalf of various other
22 electric operating companies of the American Electric Power system.

1 **Q. DID YOU FILE TESTIMONY IN CASE NO. 18-501-EL-FOR ON SEPTEMBER**
2 **19, 2018?**

3 A. Yes. My testimony filed on September 19, 2018 supported the need for renewable
4 generation in Ohio, discussed the recovery mechanism for new renewable projects
5 proposed by the Company, and addressed the critical importance of timely placing
6 renewable energy projects in service in order to capture the full value of various tax
7 credits.

8 **Q. ARE YOU SPONSORING ANY EXHIBITS WITH YOUR TESTIMONY?**

9 A. Yes, I am sponsoring the following exhibits:

- 10 • Exhibit WAA- 1 – Calculation of the Renewable Generation Rider (RGR)
11 Credit/(Charge)
- 12 • Exhibit WAA-2 – Customer Bill Impacts

13 **PURPOSE OF TESTIMONY**

14 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

15 A. The purpose of my testimony is to 1) provide the background information leading the
16 Company to make this filing; 2) define and support the benefits in Ohio of the specific
17 Renewable Energy Purchase Agreements (REPA) proposed in this case; 3) discuss the
18 requirements associated with the RGR, including the reasonable arrangement option and
19 the availability of Renewable Energy Certificates (RECs); 4) address the costs incurred
20 by the Company when entering into a REPA and recovery of those costs; and 5) identify
21 the customer bill impacts and rate design.

1 **BACKGROUND INFORMATION LEADING TO THIS FILING**

2 **Q. PLEASE DESCRIBE THE COMPANY’S COMMITMENT IN THE JOINT**
3 **STIPULATION AND RECOMMENDATION (“STIPULATION”) IN CASE NOS.**
4 **14-1693-EL-RDR, ET AL., REGARDING RENEWABLE GENERATION.**

5 A. In the Stipulation in Case Nos. 14-1693-EL-RDR et.al. (the “14-1693 Case”), the
6 Company and its affiliates committed to pursue the development of at least 900 MW of
7 renewable energy projects in Ohio, including at least 400 MW of solar and 500 MW of
8 wind, subject to AEP Ohio receiving full cost recovery.¹ Individual projects to comprise
9 the 900 MW are to be proposed over a four-year period following adoption of the
10 Stipulation; the Commission approved the Stipulation on March 31, 2016.

11 **Q. DID THE COMMISSION PRE-APPROVE THE RENEWABLE PROJECTS IN**
12 **THE 14-1693 CASE?**

13 A. No. The Commission noted that proposals to develop renewable resources pursuant to
14 the Stipulation would be subject to Commission review in future proceedings and that the
15 Commission was not predetermining the outcome of those future proceedings in the 14-
16 1693-EL-RDR Case.² Further, in the Opinion and Order for Case Nos. 16-1852-EL-SSO,
17 *et al.* (“*ESP IV Order*”), the Commission approved a recovery mechanism for the
18 renewable projects, the Renewable Generation Rider, and once again noted that the
19 Company will need to file separate EL-RDR proceedings to propose specific renewable

¹ Joint Stipulation and Recommendation, Case Nos. 14-1693-EL-RDR et. al., Section III. I.

² 14-1693 Case, Opinion and Order, at 84.

1 projects after demonstrating the need for each proposed facility and to satisfy all of the
2 other criteria in R.C. 4928.143(B)(2)(c).³

3 Rule 4901:5-5-06(B) of the Ohio Administrative Code requires that a Long Term
4 Forecast Report (LTFR) filing include an integrated resource plan (IRP) if a company
5 intends to file for a future nonbypassable surcharge under the provisions of Section
6 4928.143(B)(2)(c) of the Ohio Revised Code. Further, Rule 4901:5-1-04(A)(2) and
7 (B)(1) require that a hearing be conducted in years in which an IRP is submitted and that
8 a full forecast report be submitted in any year in which a hearing is granted. The
9 Company filed its LTFR on April 16, 2018 in docket No. 18-501-EL-FOR and amended
10 the LTFR to include the IRP on September 19, 2018 in Case No. 18-501-EL-FOR
11 (“Amended LTFR”). As set forth in the Amended LTFR case and this RDR case, AEP
12 Ohio is seeking the consolidation of both cases.

13 **Q. IS THE COMPANY SEEKING A FINDING OF PRUDENCE FOR SPECIFIC**
14 **RENEWABLE PROJECTS IN THIS FILING?**

15 A. Yes. The Company is proposing two specific solar project REPAs in this case and
16 requests that the Commission find it prudent for AEP Ohio to enter into the solar REPAs.
17 AEP Ohio plans to move forward with the solar projects if: 1) the Commission makes a
18 finding of need in the Amended LTFR case; 2) the Commission finds in this RDR case
19 that it would be prudent for AEP Ohio to enter into the two solar REPAs; and 3) the
20 Commission approves a nonbypassable charge for the life of the solar REPAs as
21 proposed by the Company in this filing. Company witnesses Williams and Karrasch
22 provide the details of the proposed REPAs.

³ Opinion and Order Case Nos. 16-1852-EL-SSO, et al., at ¶227.

1 **BENEFITS OF THE PROPOSED REPAs**

2 **Q. WHAT ARE THE RELEVANT CONSIDERATIONS WHEN EVALUATING A**
3 **REPA?**

4 A. Economic benefits, including the price of the REPA, need to be considered. This
5 includes not only the low cost of the energy, as demonstrated by Company witness
6 Torpey, but also the effect of the REPA as a financial hedge to other market products. In
7 addition to the economic benefits, there are several other considerations: 1) customers'
8 expectation for continued growth in renewable energy; 2) the economic impact brought to
9 Ohio by the renewable energy production facilities contracted through the REPAs, which
10 Company witnesses Buser and LaFayette address in detail; 3) fuel diversity; 4) the
11 continued innovation brought on by renewable projects, which Company witness
12 Williams discusses; and 5) Ohio being a net importer of energy for the past several years,
13 with a continuing trend in this direction.

14 **Q. PLEASE FURTHER ADDRESS THE ECONOMIC BENEFITS OF THE**
15 **PROPOSED REPAs.**

16 A. While the attractive pricing of the proposed REPAs when compared to other market
17 products is an economic benefit, there are other economic benefits to be considered. In
18 deciding the prudence of these REPAs, the Commission should consider: the economic
19 impact to the localities where the facilities will be located, as discussed by Company
20 witnesses Drs. Buser and LaFayette; the "off the shelf" availability of renewable energy
21 for subscription through a reasonable arrangement contract; and, the creation of an
22 inventory of RECs available to all customer classes through a Green Tariff offering as
23 discussed by Company witness Williams.

1 **Q. ARE THERE NON-PRICE BENEFITS OF THE PROPOSED REPAs?**

2 A. Yes. The Stipulation in the 14-1693 Case established certain preferences regarding the
3 renewable energy projects. One preference was that the proposed solar projects that are
4 substantially located in AEP Ohio's service territory in Appalachian Ohio. Both the
5 Willowbrook and Highland solar facilities, as discussed by Company witness Karrasch,
6 will be located in Highland county, which is part of that region.⁴ While the Highland
7 REPA reflects a higher, yet still competitive, price than the Willowbrook REPA, the
8 incremental price difference is exceeded by the incremental economic benefit associated
9 with the Highland solar project. The Highland REPA also includes an annual jobs
10 commitment with pricing reductions to enforce the commitment throughout the term of
11 the REPA. Company witness Williams further describes the jobs benefits to the state of
12 Ohio.

13 **Q. YOU STATE THERE IS AN EXPRESSED NEED BY CUSTOMERS FOR**
14 **CLEAN, RENEWABLE ENERGY. PLEASE EXPLAIN THIS STATEMENT.**

15 A. It is common to see announcements that major U.S. corporations are planning on
16 powering their businesses, manufacturing plants, data centers, or other corporate
17 locations with renewable energy. In Ohio alone, IKEA, Gap Inc., Nestlé, Schneider
18 Electric, Campbell Soup Company, Whirlpool Corporation, United Technologies

⁴ Appalachian Ohio means those Ohio counties identified by the Appalachian Regional Commission as being within the Appalachian Region of Ohio (<https://www.arc.gov/counties>): Adams, Ashtabula, Athens, Belmont, Brown, Carroll, Clermont, Columbiana, Coshocton, Gallia, Guernsey, Harrison, Highland, Hocking, Holmes, Jackson, Jefferson, Lawrence, Mahoning, Meigs, Monroe, Morgan, Muskingum, Noble, Perry, Pike, Ross, Scioto, Trumbull, Tuscarawas, Vinton, and Washington. AEP Ohio's service territory includes all Appalachian Ohio counties except Ashtabula, Trumbull, Mahoning and Clermont counties.

1 Corporation, Owens Corning, and others have made public announcements fully
2 supporting renewable energy.

3 **Q. HAVE AEP OHIO CUSTOMERS EXPRESSED THIS SAME DESIRE FOR**
4 **RENEWABLE ENERGY?**

5 A. Yes, as discussed in my direct testimony in the Amended LTFR case, the Company has
6 validated, through research conducted by Navigant Consulting, that AEP Ohio customers
7 consider it important to make greater use of renewable generation. The survey results
8 and research clearly demonstrate that AEP Ohio customers have a need for renewable
9 energy resources, even if there are additional costs in securing the clean energy. Notably,
10 as supported in the testimony of Company witness Torpey, the proposed REPAs are
11 expected to provide a cost savings to our customers. These factors taken together fully
12 support a finding of need for these specific resources.

13 **Q. HAS THE COMMISSION INDICATED THAT AN INCREASE IN RENEWABLE**
14 **GENERATION IS BENEFICIAL TO THE STATE OF OHIO?**

15 A. Yes. The Commission indicated in the 14-1693 Case that “renewable energy plays an
16 integral role in promoting a reliable and cost-effective grid” and “enhance[s] the diversity
17 of available generation options” to “offset the price volatility impact that any single fuel
18 source may have on electric rates.”⁵ And although there is currently no federal regulation
19 of carbon dioxide emissions from coal-fired power-plants, the Commission did recognize
20 in the *ESP IV Order* that investment in renewable generation will afford the state
21 flexibility in complying with any future environmental requirements, by providing

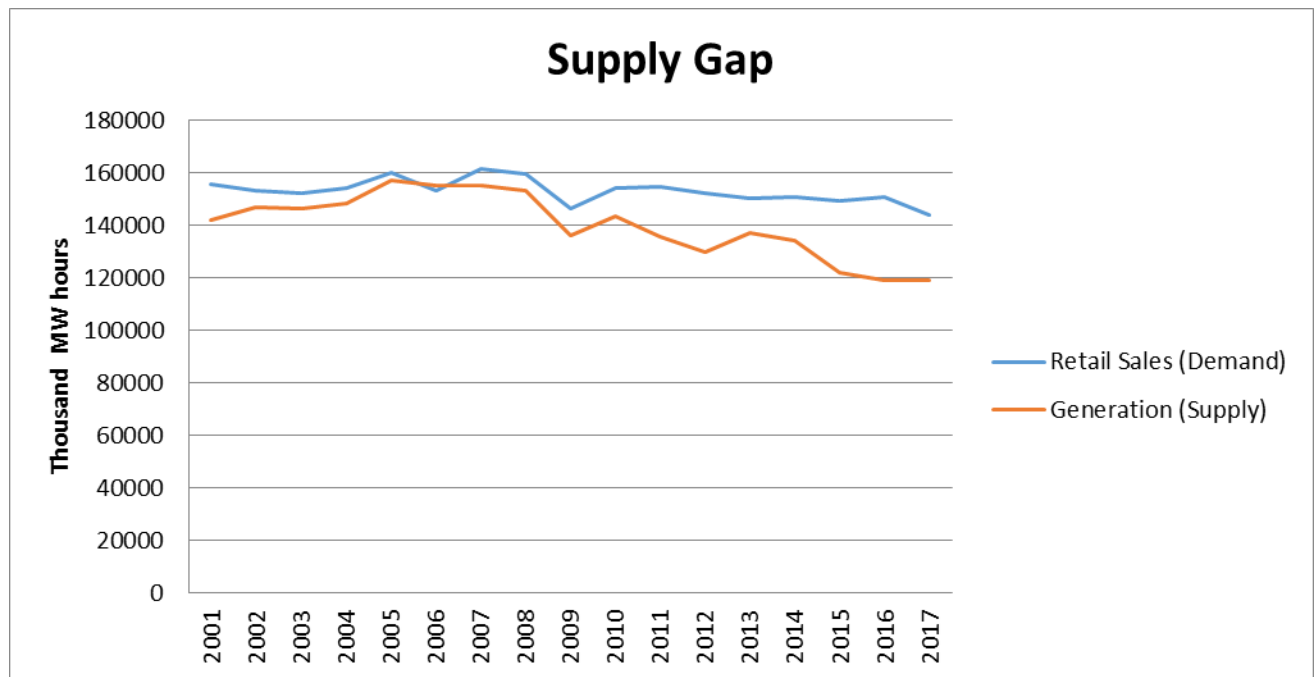
⁵ 14-1693 Case, Opinion and Order at 82-83.

greater fuel source diversity. In-state renewable generation projects will lead to reduced carbon emissions in Ohio.

Q. IS OHIO A NET IMPORTER OF ENERGY?

A. Yes. For years, the state of Ohio has failed to produce enough electricity within the state to meet the usage demand in the state. With the exception of one year, from 2001 through 2017, Ohio has not supplied enough energy to meet demand. The gap between supply and demand continues to widen as demonstrated in Figure 1, and with a recent announcement from other Ohio utilities, more coal and nuclear plants will be retired and this gap will become even larger. Ohio depends on the production of energy in other states to be brought in to meet the needs of its citizens, businesses, and industry.

Figure 1: Ohio Supply Gap⁶



⁶ Data based on U.S. Energy Information Administration Annual Retail Sales of Electricity, Ohio, All Sectors and Annual Net Generation, Ohio, All Sectors

1 **Q. WHAT ARE THE BENEFITS FOR OHIO CUSTOMERS IN MEETING ITS**
2 **ENERGY NEEDS WITH IN-STATE RESOURCES?**

3 A. There are several benefits that go along with meeting Ohio's energy needs with resources
4 located in the State of Ohio. In-state resources provide local economic development
5 benefits to the communities where they are located as well as the surrounding region and
6 State as a whole. Having in-state renewable resources to serve Ohio customers also
7 makes Ohio more attractive to certain businesses that may have corporate sustainability
8 goals. When Ohio's energy dollars are reinvested in the state through locally produced
9 energy the multiplier effect of economic development is increased to the benefit of our
10 customers and communities. These solar projects, both located in Ohio, provide the
11 positive impacts addressed above. Details on the potential economic impact to the state
12 are further addressed by Company witnesses Drs. Buser and LaFayette.

13 **THE RENEWABLE GENERATION RIDER**

14 **Q. PLEASE EXPLAIN THE RENEWABLE GENERATION RIDER.**

15 A. The Commission approved the non-bypassable RGR in the *ESP IV Order*. The RGR was
16 established to track the net direct benefits or costs associated with the energy produced by
17 the renewable energy projects to be proposed as part of the 900 MW of renewable energy
18 to be brought forward based on the 14-1693 Case. Except for the reasonable arrangement
19 option (described below), the net cost or benefit of the rider will be determined by
20 offsetting the REPA price plus the debt equivalency cost less the PJM market revenues
21 (supplemented by any capacity performance credit or assessment) received for the
22 REPAs output and the revenues received from customer participation in the Green Power

1 Tariff. This filing brings forward the 400 MW solar energy commitment, which the
2 Commission had directed be pursued first.

3 **Q. HAVE YOU PROVIDED AN EXHIBIT THAT DETAILS HOW THE REVENUES**
4 **AND EXPENSES ASSOCIATED WITH THE REPAs WILL BE NETTED TO**
5 **DEVELOP THE ULTIMATE CREDIT OR CHARGE THAT WILL BE**
6 **INCLUDED IN CUSTOMER BILLS?**

7 A. Yes. Exhibit WAA-1 provides a detailed calculation of how the RGR Rider net credit or
8 charge will be developed.

9 **Q. PLEASE EXPLAIN WHY THE COMPANY IS PROPOSING RECOVERY OF**
10 **ANY CAPACITY PERFORMANCE ASSESSMENT INCURRED IN**
11 **CONNECTION WITH THE REPAs.**

12 A. It would be unfair and counterproductive for the Company to bear additional risk of
13 capacity performance assessments in order to yield additional capacity revenues to
14 benefit customers through the RGR. This is especially true for an intermittent resource
15 like a solar facility. The Company cannot control production of the solar facility in the
16 same manner as a fossil generation plant and, therefore, cannot control whether the solar
17 facility is operating when the peak load occurs throughout the PJM system. Under this
18 approach, the Company would also flow any capacity performance credits through the
19 RGR. If the Commission does not want to allow recovery of capacity performance
20 assessments for the REPAs, then it should acknowledge that the solar facilities are not
21 expected to produce capacity revenues. Conversely, granting the Company's request for
22 recovery of any capacity performance assessment not caused by the Company's

1 mismanagement will encourage the Company to prudently optimize capacity revenues
2 that will flow through the RGR as a credit.

3 **Q. WHAT ARE THE OTHER REQUIREMENTS OF THE RGR AS SET FORTH IN**
4 **THE *ESP IV ORDER*?**

5 A. First and foremost, the Company is required to demonstrate need for each of the proposed
6 renewable projects and satisfy all of the other criteria in R.C. 4928.143(B)(2)(c). In
7 addition, in the Joint Stipulation adopted in the *ESP IV Order*, the Company committed
8 to the Commission-ordered conditions of the 14-1693 Case Stipulation. Specifically,
9 costs associated with the RGR will be updated quarterly and rates will be automatically
10 approved 30 days after the filing unless suspended. As with the 14-1693 Case
11 Stipulation, all costs in the RGR will be subject to an annual audit for prudence. In
12 addition, as part of approving the RGR placeholder rider in the *ESP IV Order*, the
13 Commission has already approved the rate design. As agreed to in the *ESP IV*
14 Stipulation, the rate design will be a uniform per kWh charge or credit for all monthly
15 consumption up to 833,000 kWh per customer account for the life of each RGR project.⁷

16 **Q. DO THE PROPOSED REPAs FURTHER ADDRESS THE CRITERIA IN**
17 **R.C.4928.143(B)(2)(C) OF THE ESP STATUTE REQUIRING THE PROPOSED**
18 **GENERATING PLANT TO BE COMPETITIVELY SOURCED AND OWNED**
19 **OR OPERATED BY THE ELECTRIC DISTRIBUTION UTILITY?**

20 A. Yes, it is my understanding that the proposed REPAs do meet the criteria as specified in
21 the statute. As supported by Company witness Bradley, the two solar REPAs were

⁷ 14-1693 Case Stipulation The project life refers to the recovery life of the project that shall be determined by the Commission as part of each project's individual case filing.

competitively bid and independently evaluated. AEP Ohio will also be the operator of the solar facilities. AEP Ohio will operate the solar facilities in the PJM markets as the Market Participant. As the Market Participant, AEP Ohio will offer the renewable energy into PJM and dispatch the plants. The seller will perform maintenance activities on behalf of AEP Ohio, as provided in the REPAs.

Q. PLEASE DESCRIBE THE REASONABLE ARRANGEMENT OPTION INCLUDED IN THE RGR.

A. If a renewable project is owned by an AEP affiliate or other non-affiliate entity and operated by AEP Ohio through a long-term agreement, the Company may propose that some or all of the project's output be purchased through a bilateral contract with a retail customer, conditioned upon approval by the Commission as a reasonable arrangement under R.C. 4905.31. In that circumstance, a portion of the REPAs could first be used to serve the reasonable arrangement customer's load; the remainder of the REPA output would flow through the RGR as discussed above.

Q. HOW ARE THE RECS ASSOCIATED WITH THE REPAs TREATED IN THE RGR?

A. The RECS will either be retained and retired by the Company or retired on behalf of specific customers that purchase the RECS to meet their individual renewable energy goals. The RECs will be made available by subscription to all customer classes through the proposed Green Power Tariff as discussed in the testimony of Company witness Williams. Revenues received as a result of REC purchases by individual customers will be used as an additional offset to costs included in the RGR.

1 **COST TO A UTILITY IN CONTRACTING RENEWABLE ENERGY PURCHASE**

2 **AGREEMENTS**

3 **Q. CURRENTLY, DO REPAs PROVIDE EARNINGS FOR AEP OHIO?**

4 A. No, even though AEP Ohio would support the REPA through its balance sheet and its
5 ability to contract with the renewable developer, and would undertake associated
6 financial and regulatory risks, there would not be any earnings provided to AEP Ohio
7 related to its existing REPAs. Costs associated with a REPA are simply passed on to
8 customers without a margin for AEP Ohio. When a utility builds a generating asset, or
9 purchases an asset, it is able to put it in rate base and earn a return on the asset based
10 upon the equity that finances and supports the investment. As discussed by Company
11 witness Fetter, not only has no such earnings opportunity existed for a REPA, the
12 incremental debt equivalency costs serves as a negative drag on the Company's balance
13 sheet. This is the case with the Company's current REPAs (Fowler Ridge, Timber Road,
14 and Wyandot Solar), but it is not acceptable to AEP Ohio to continue that approach for
15 the proposed REPAs.

16 **Q. IS THERE AN ALTERNATIVE APPROACH THAT WOULD RECOGNIZE THE**
17 **COSTS AND RISKS BORNE BY A UTILITY LIKE AEP OHIO ENTERING**
18 **INTO A REPA TO SUPPORT THE NEEDS OF ITS CUSTOMERS?**

19 A. Yes. When a utility like AEP Ohio enters into a REPA, it incurs costs beyond the
20 payment to the renewable developer and takes on additional risk. When AEP Ohio enters
21 into a REPA for the benefit of its customers, any recovery mechanism should provide for
22 recovery of those additional costs to ensure that the Company is fully compensated for all
23 costs associated with entering into the REPA. Entering into a REPA is making a long-

1 term commitment to make payments to the renewable developer under the terms of the
2 REPA. As discussed by Company witness Fetter, rating agencies like S&P consider
3 REPAs when they evaluate the financial risks to bond holders. To reflect these risks,
4 S&P imputes a debt equivalency associated with the REPA. In order to maintain the debt
5 to equity ratio that existed prior to entering into the REPA, additional equity is required at
6 either the utility or parent company level. This additional equity comes with a debt
7 equivalency cost. Any recovery mechanism should provide for recovery of this cost.

8 **Q. HOW IS THE COMPANY PROPOSING TO CAPTURE THESE ADDITIONAL**
9 **COSTS AND RISKS?**

10 A. The Company is proposing to include this cost component as an element of the RDR
11 calculation. Specifically, the Company is seeking a debt equivalency cost to be added to
12 each REPA. This amount is \$4.30 million annually for the Highland Solar REPA and
13 \$1.36 million annually for the Willowbrook Solar REPA.

14 **Q. PLEASE EXPLAIN HOW THIS ADDITIONAL AMOUNT WAS CALCULATED.**

15 A. The additional cost of the utility carrying the REPA is calculated in three steps. First the
16 debt equivalency value is determined, next the cost of equity to rebalance the Company's
17 capital structure is calculated, and finally the levelized revenue requirement associated
18 with this equity is calculated. The debt equivalency value is calculated as the present
19 value of the capacity payment, discounted at the utility's average cost of debt, and
20 multiplied by a risk factor. The risk factor is intended to reflect the probability that
21 REPA costs will be fully recovered in rates and varies depending on state-specific
22 regulatory or legislative cost-recovery mechanisms. For the proposed REPAs, the
23 implied capacity payment is estimated to be 74% of the total REPA payment, based upon

1 U.S. Energy Information Administration (EIA) data, to reflect the portion of the price that
2 supports the developers' recovery of their capital investment.⁸ Since the RGR has
3 characteristics that are similar to a purchase power adjustment rider, a risk factor of 25%
4 has been used in the calculation. The cost of equity is simply calculated by multiplying
5 the approved return on equity by the equity required to rebalance the capital structure of
6 the Company and then grossing this value up using a gross revenue conversion factor to
7 reflect the additional taxes that will be incurred. Both the debt equivalency value and the
8 cost of equity change over the term of the REPA. Based on the structure of the REPAs
9 included in this filing, these values decline over time due to the flat per-kilowatt hour
10 rates included in the REPAs. The levelized revenue requirement associated with the
11 equity is calculated by first determining the net present value (NPV) of the annual equity
12 cost, using the Company's weighted average cost of capital, and then determining a
13 levelized revenue requirement that has the same NPV. After combining the net
14 wholesale benefits calculated by Company witness Torpey with the debt equivalency
15 costs for the proposed REPAs there are over \$200 million (nominal value) in projected
16 customer savings over the life of the projects.

17 **Q. IS THERE A REASON THAT DEBT EQUIVALENCY COSTS ARE NOT**
18 **INCLUDED IN THE CONTRACT PRICE OF THE REPAs?**

19 A. Yes. The REPA cannot include the debt equivalency cost because the REPA price
20 actually includes savings associated with the REPA being entered into with a credit
21 worthy entity like the Company, which means that portion of the cost was effectively

⁸ EIA Independent Statics and Analysis: Levelized Cost and Levelized Avoided Cost of New Generation Resources in the Annual Energy Outlook 2018, March 2018

1 transferred to AEP Ohio. The long-term nature of the REPA between the renewable
2 developer and the Company allows the developer to obtain lower cost financing. This
3 lower cost financing comes in the form of a thinner equity layer and lower interest rate
4 debt. This is possible because bond holders are able to rely on the credit worthiness of
5 the REPA counter-party, in this case the Company, to ensure repayment of the funds they
6 have provided to the renewable developer. The debt equivalency cost represents the
7 transfer of risk from the renewable developer to the Company and needs to be recovered
8 through retail rates rather than through the wholesale REPA.

9 Another way to look at debt equivalency cost is to consider an alternative scenario
10 where the renewable developer does not have a long-term REPA with a credit worthy
11 entity like the Company. Let's consider a scenario in which the REPA is for an initial 5-
12 year term with an option for the Company to renew the REPA for 3 additional 5-year
13 terms at the same price as the initial term. In that scenario, the renewable developer
14 would need to finance a large portion of the project with equity financing and the
15 remainder with higher interest rate debt. This increased financing cost would result in an
16 increased price for the REPA. On the other hand, since the commitment on the part of
17 the Company would be shorter, the debt equivalency cost would be lower.

18 **CUSTOMER BILL IMPACTS**

19 **Q. WERE THE RATE IMPACTS FOR EACH CUSTOMER CLASS CALCULATED**
20 **FOR THE RGR WHEN INCLUDING THESE PROPOSED REPAS?**

21 A. Yes, based on the previously-approved rate design as discussed above, the projected per
22 kWh credit or charge for each of the twenty years of the REPAs will be as indicated
23 below.

Table 1: Price per kWh (up to 833,000) Base Scenario

2021	\$ 0.0002781		2031	\$ (0.000441)
2022	\$ 0.0002597		2032	\$ (0.000506)
2023	\$ 0.0002114		2033	\$ (0.000559)
2024	\$ 0.0001685		2034	\$ (0.000613)
2025	\$ 0.0001235		2035	\$ (0.000689)
2026	\$ 0.0000885		2036	\$ (0.000737)
2027	\$ 0.0000582		2037	\$ (0.000794)
2028	\$ (0.0002273)		2038	\$ (0.000899)
2029	\$ (0.0002796)		2039	\$ (0.000916)
2030	\$ (0.0003771)		2040	\$ (0.000994)

Typical bill scenarios are reflected in Exhibit WAA-2. For a typical residential customer using 1,000 kWh, the projected charge in 2020¹ would be \$0.28 per month. To the extent that customers participate in the Green Power Tariff, any revenues received under this tariff would be attributed as revenue in the RGR calculation as indicated in Exhibit WAA-1. Participation in the Green Power Tariff only provides additional benefits to customers.

Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?

A. Yes.

Calculation of Renewable Generation Rider Credit/(Charge)

<u>Line</u>	<u>Description</u>	<u>Amount</u>
1	Capacity Revenues (offset by capacity performance credit or assessment)	\$
2	Energy Revenues	\$
3	Ancillary Service Revenues	\$
4	Green Tariff Revenues	\$_____
5=1+2+3+4	Total Revenues	\$
6	REPA Cost	\$
7	Debt Equivalency Costs	\$_____
8=6+7	Total Expenses	\$
9=5-8	Net RGR Credit/(Charge)	\$_____

**Ohio Power Company
Typical Bill Comparison
Base Scenario
Ohio Power Rate Zone**

<u>Tariff</u>	<u>kWh</u>	<u>KW</u>	<u>Current</u>	<u>Proposed</u>	<u>Difference</u>	<u>Difference</u>
Residential	100		\$24.47	\$24.49	\$0.02	0.1%
	250		\$42.44	\$42.51	\$0.07	0.2%
	500		\$72.41	\$72.55	\$0.14	0.2%
	750		\$102.33	\$102.54	\$0.21	0.2%
	1,000		\$132.31	\$132.59	\$0.28	0.2%
	1,500		\$192.24	\$192.65	\$0.41	0.2%
	2,000		\$252.13	\$252.69	\$0.56	0.2%
GS-1 Secondary	375	3	\$58.61	\$58.71	\$0.10	0.2%
	1,000	3	\$113.69	\$113.97	\$0.28	0.3%
	750	6	\$91.67	\$91.88	\$0.21	0.2%
	2,000	6	\$201.85	\$202.41	\$0.56	0.3%
GS-2	1,500	12	\$289.17	\$289.58	\$0.41	0.1%
	4,000	12	\$467.97	\$469.08	\$1.11	0.2%
	6,000	30	\$828.13	\$829.80	\$1.67	0.2%
	10,000	30	\$1,113.90	\$1,116.68	\$2.78	0.3%
	10,000	40	\$1,234.60	\$1,237.38	\$2.78	0.2%
	14,000	40	\$1,520.39	\$1,524.28	\$3.89	0.3%
	12,500	50	\$1,533.93	\$1,537.41	\$3.48	0.2%
	18,000	50	\$1,925.18	\$1,930.18	\$5.00	0.3%
	15,000	75	\$2,014.27	\$2,018.44	\$4.17	0.2%
	30,000	100	\$3,379.27	\$3,387.62	\$8.35	0.3%
	36,000	100	\$3,804.58	\$3,814.59	\$10.01	0.3%
	30,000	150	\$3,982.78	\$3,991.13	\$8.35	0.2%
	60,000	300	\$7,919.80	\$7,936.48	\$16.68	0.2%
	90,000	300	\$10,046.35	\$10,071.38	\$25.03	0.3%
	100,000	500	\$13,169.18	\$13,196.99	\$27.81	0.2%
	150,000	500	\$16,713.41	\$16,755.13	\$41.72	0.3%
	180,000	500	\$18,839.93	\$18,889.99	\$50.06	0.3%

**Ohio Power Company
Typical Bill Comparison
Base Scenario
Ohio Power Rate Zone**

<u>Tariff</u>	<u>kWh</u>	<u>KW</u>	<u>Current</u>	<u>Proposed</u>	<u>Difference</u>	<u>Difference</u>
GS-3 Secondary	18,000	50	\$1,925.18	\$1,930.18	\$5.00	0.3%
	30,000	75	\$3,077.54	\$3,085.89	\$8.35	0.3%
	50,000	75	\$4,495.24	\$4,509.15	\$13.91	0.3%
	36,000	100	\$3,804.58	\$3,814.59	\$10.01	0.3%
	30,000	150	\$3,982.78	\$3,991.13	\$8.35	0.2%
	60,000	150	\$6,109.32	\$6,126.00	\$16.68	0.3%
	100,000	150	\$8,944.71	\$8,972.52	\$27.81	0.3%
	120,000	300	\$12,172.89	\$12,206.26	\$33.37	0.3%
	150,000	300	\$14,299.42	\$14,341.14	\$41.72	0.3%
	200,000	300	\$17,843.65	\$17,899.27	\$55.62	0.3%
	180,000	500	\$18,839.93	\$18,889.99	\$50.06	0.3%
	200,000	500	\$20,257.64	\$20,313.26	\$55.62	0.3%
	325,000	500	\$29,118.21	\$29,208.59	\$90.38	0.3%
GS-2 Primary	200,000	1,000	\$25,586.93	\$25,642.55	\$55.62	0.2%
	300,000	1,000	\$32,410.29	\$32,493.72	\$83.43	0.3%
GS-3 Primary	360,000	1,000	\$36,504.30	\$36,604.41	\$100.11	0.3%
	400,000	1,000	\$39,233.65	\$39,344.89	\$111.24	0.3%
	650,000	1,000	\$56,292.04	\$56,472.81	\$180.77	0.3%
GS-2 Subtransmission						
	1,500,000	5,000	\$132,234.52	\$132,466.18	\$231.66	0.2%
GS-3 Subtransmission	2,500,000	5,000	\$194,730.42	\$194,962.08	\$231.66	0.1%
	3,250,000	5,000	\$241,602.35	\$241,834.01	\$231.66	0.1%
GS-4 Subtransmission	3,000,000	10,000	\$255,578.37	\$255,810.03	\$231.66	0.1%
	5,000,000	10,000	\$380,570.17	\$380,801.83	\$231.66	0.1%
	6,500,000	10,000	\$474,314.02	\$474,545.68	\$231.66	0.1%
	10,000,000	20,000	\$752,249.67	\$752,481.33	\$231.66	0.0%
	13,000,000	20,000	\$939,737.37	\$939,969.03	\$231.66	0.0%
GS-4 Transmission	25,000,000	50,000	\$1,867,288.17	\$1,867,519.83	\$231.66	0.0%
	32,500,000	50,000	\$2,336,007.42	\$2,336,239.08	\$231.66	0.0%

* Typical bills assume 100% Power Factor

Ohio Power Company
Typical Bill Comparison
Base Scenario
Columbus Southern Power Rate Zone

<u>Tariff</u>	<u>kWh</u>	<u>KW</u>	<u>Current</u>	<u>Proposed</u>	<u>Difference</u>	<u>Difference</u>
<u>Residential</u>						
RR1 Annual	100		\$23.82	\$23.85	\$0.03	0.1%
	250		\$40.81	\$40.88	\$0.07	0.2%
	500		\$69.16	\$69.29	\$0.13	0.2%
RR Annual	750		\$97.46	\$97.67	\$0.21	0.2%
	1,000		\$125.82	\$126.10	\$0.28	0.2%
	1,500		\$182.49	\$182.90	\$0.41	0.2%
	2,000		\$239.13	\$239.69	\$0.56	0.2%
GS-1	375	3	53.27	53.38	\$0.11	0.2%
	1,000	3	115.99	116.27	\$0.28	0.2%
	750	6	90.90	91.11	\$0.21	0.2%
	2,000	6	216.36	216.92	\$0.56	0.3%
GS-2 Secondary	1,500	12	\$256.76	\$257.17	\$0.41	0.2%
	4,000	12	\$419.31	\$420.42	\$1.11	0.3%
	6,000	30	\$763.06	\$764.73	\$1.67	0.2%
	10,000	30	\$1,022.82	\$1,025.60	\$2.78	0.3%
	10,000	40	\$1,141.63	\$1,144.41	\$2.78	0.2%
	14,000	40	\$1,401.40	\$1,405.30	\$3.90	0.3%
	12,500	50	\$1,422.82	\$1,426.29	\$3.47	0.2%
	18,000	50	\$1,778.29	\$1,783.29	\$5.00	0.3%
	15,000	75	\$1,882.19	\$1,886.37	\$4.18	0.2%
	30,000	150	\$3,739.00	\$3,747.34	\$8.34	0.2%
	60,000	300	\$7,452.65	\$7,469.33	\$16.68	0.2%
	100,000	500	\$12,404.19	\$12,432.00	\$27.81	0.2%
GS-2 Primary	100,000	1,000	\$17,312.96	\$17,340.77	\$27.81	0.2%
GS-3 Secondary	30,000	75	\$2,847.90	\$2,856.24	\$8.34	0.3%
	50,000	75	\$4,135.52	\$4,149.43	\$13.91	0.3%
	30,000	100	\$3,144.93	\$3,153.27	\$8.34	0.3%
	36,000	100	\$3,531.21	\$3,541.22	\$10.01	0.3%
	60,000	150	\$5,670.41	\$5,687.09	\$16.68	0.3%

Ohio Power Company
Typical Bill Comparison
Base Scenario
Columbus Southern Power Rate Zone

<u>Tariff</u>	<u>kWh</u>	<u>KW</u>	<u>Current</u>	<u>Proposed</u>	<u>Difference</u>	<u>Difference</u>
	100,000	150	\$8,245.63	\$8,273.44	\$27.81	0.3%
	90,000	300	\$9,384.08	\$9,409.11	\$25.03	0.3%
	120,000	300	\$11,315.49	\$11,348.86	\$33.37	0.3%
	150,000	300	\$13,246.90	\$13,288.62	\$41.72	0.3%
	200,000	300	\$16,465.91	\$16,521.53	\$55.62	0.3%
	150,000	500	\$15,623.21	\$15,664.93	\$41.72	0.3%
	180,000	500	\$17,554.61	\$17,604.67	\$50.06	0.3%
	200,000	500	\$18,842.23	\$18,897.85	\$55.62	0.3%
	325,000	500	\$26,889.77	\$26,980.15	\$90.38	0.3%
GS-3 Primary	300,000	1,000	\$29,711.24	\$29,794.67	\$83.43	0.3%
	360,000	1,000	\$33,430.73	\$33,530.84	\$100.11	0.3%
	400,000	1,000	\$35,910.38	\$36,021.62	\$111.24	0.3%
	650,000	1,000	\$51,408.22	\$51,588.99	\$180.77	0.4%
GS-4	1,500,000	5,000	\$124,547.21	\$124,778.87	\$231.66	0.2%
	2,500,000	5,000	\$181,914.01	\$182,145.67	\$231.66	0.1%
	3,250,000	5,000	\$224,939.11	\$225,170.77	\$231.66	0.1%
	3,000,000	10,000	\$240,197.41	\$240,429.07	\$231.66	0.1%
	5,000,000	10,000	\$354,931.01	\$355,162.67	\$231.66	0.1%
	6,500,000	10,000	\$440,981.21	\$441,212.87	\$231.66	0.1%
	6,000,000	20,000	\$471,495.17	\$471,726.83	\$231.66	0.1%
	10,000,000	20,000	\$700,962.37	\$701,194.03	\$231.66	0.0%
	13,000,000	20,000	\$873,065.41	\$873,297.07	\$231.66	0.0%
	15,000,000	50,000	\$1,165,399.01	\$1,165,630.67	\$231.66	0.0%
	25,000,000	50,000	\$1,739,067.01	\$1,739,298.67	\$231.66	0.0%
	32,500,000	50,000	\$2,169,318.01	\$2,169,549.67	\$231.66	0.0%

* Typical bills assume 100% Power Factor

CERTIFICATE OF SERVICE

I hereby certify that a service copy of the foregoing was sent by, or on behalf of, the undersigned counsel to the following parties of record this 27th day of September, 2018, via electronic transmission.

/s/ Steven T. Nourse

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Summary: Testimony of William A. Allen electronically filed by Mr. Steven T Nourse on behalf of Ohio Power Company

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Case No(s). 18-1392-EL-RDR, 18-1393-EL-ATA

Summary: Testimony Direct Testimony of William A. Allen originally electronically filed by Mr. Steven T Nourse on behalf of Ohio Power Company. electronically filed by Docketing Staff on behalf of Docketing