**BEFORE THE**
**PUBLIC UTILITIES COMMISSION OF OHIO**

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| **In the Matter of the Application Seeking Approval of Ohio Power Company's Proposal to Enter into an Affiliate Power Purchase Agreement for Inclusion in the Power Purchase Agreement Rider** | **)** | **Case No. 14-1693-EL-RDR** |
| **In the Matter of the Application of Ohio Power Company for Approval of Certain Accounting Authority** | **)** | **Case No. 14-1694-EL-AAM** |

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# DIRECT TESTIMONY

# OF

# JONATHAN A. LESSER, PH.D.

# ON BEHALF OF

# INDUSTRIAL ENERGY USERS-OHIO

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Frank P. Darr (Reg. No. 0025469)
(Counsel of Record)
Samuel C. Randazzo (Reg. No. 0016386)
McNees Wallace & Nurick LLC
21 E. State Street, 17th Floor
Columbus, OH 43215
Telephone: 614-469-8000
Fax: 614-469-4653
fdarr@mwncmh.com
sam@mwncmh.com

**September 11, 2015** **Attorneys for Industrial Energy Users-Ohio**

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## I. INTRODUCTION, PURPOSE AND SUMMARY OF CONCLUSIONS

**Q1. PLEASE STATE YOUR NAME, TITLE, AND BUSINESS ADDRESS.**

A1. My name is Jonathan A. Lesser. I am President of Continental Economics, Inc., an economic consulting firm that provides litigation, valuation, and strategic services to law firms, industry, and government agencies. My business address is 6 Real Place, Sandia Park, NM 87047.

**Q2. PLEASE DESCRIBE YOUR PROFESSIONAL QUALIFICATIONS, EMPLOYMENT EXPERIENCE, AND EDUCATIONAL BACKGROUND.**

A2. I am an economist with substantial experience in market analysis in the energy industry. I have over 30 years of experience in the energy industry working with utilities, consumer groups, competitive power producers and marketers, and government entities. I have provided expert testimony before numerous state utility commissions, as well as before the Federal Energy Regulatory Commission ("FERC"), state legislative committees, the Congress of the United States, and international venues.

Before founding Continental Economics, I was a Partner in the Energy Practice with the consulting firm Bates White, LLC. Prior to that, I was the Director of Regulated Planning for the Vermont Department of Public Service. Previously, I was employed as a Senior Managing Economist at Navigant Consulting. Prior to that, I was the Manager, Economic Analysis, for Green Mountain Power Corporation. I also spent seven years as an Energy Policy Specialist with the Washington State Energy Office, and I worked for Idaho Power Corporation and the Pacific Northwest Utilities Conference Committee (an electric industry trade group), where I specialized in electric load and price forecasting.

I earned MA and PhD degrees in economics from the University of Washington and a BS, with honors, in mathematics and economics from the University of New Mexico. My doctoral fields of specialization were applied microeconomics, econometrics and statistics, and industrial organization and antitrust. I am the coauthor of three textbooks, including *Environmental Economics and Policy* (1997), *Fundamentals of Energy Regulation* (2007, 2nd ed. 2013), and *Principles of Utility Corporate Finance* (2011), as well as numerous academic and trade press publications. I am currently serving a three-year term as one of the Energy Bar Association "Deans" for educational programs that are designed to familiarize new attorneys with key energy issues. I have attached a copy of my curriculum vitae as Exhibit JAL-1.

**Q3. ARE YOU A MEMBER OF ANY PROFESSIONAL ORGANIZATIONS?**

A3. Yes. I am a member of the Energy Bar Association.

**Q4. ON WHOSE BEHALF ARE YOU TESTIFYING?**

A4. I am testifying on behalf of the Industrial Energy Users-Ohio ("IEU").

**Q5. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THE PUBLIC UTILITIES COMMISSION OF OHIO ("PUCO")?**

A5. Yes. I have testified in numerous cases before the PUCO, which are also listed in Exhibit JAL-1.

**Q6. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

A6. My testimony addresses the nonbypassable rider AEP Ohio wishes to levy on all customers to reflect the net costs of its Draft Power Purchase and Sale Agreement ("Draft PPA Agreement") with its corporate affiliate, AEP Generation Resources ("AEPGR"). AEP Ohio also intends to incorporate its 19.93% ownership-related output entitlement to generating units operated by Ohio Valley Electric Corporation ("OVEC") into the nonbypassable rider.

Although the Draft PPA Agreement itself is a wholesale transaction, under AEP Ohio's proposal, the above-market costs or below-market benefits of the proposed PPA would be incorporated by AEP Ohio into a nonbypassable retail electric rate rider using a "contract for differences" approach. This contract for differences approach will be based on the difference between two wholesale revenue streams associated with the sale of the energy, capacity, and ancillary services provided by the generating units covered under the Draft PPA Agreement and AEP Ohio's entitlement to the OVEC generating units.

One revenue stream will be based on the realized revenues from the sale of energy, capacity, and ancillary services from these nine generating units, based on PJM Interconnection, L.L.C. ("PJM") wholesale market prices. The other revenue stream will be based on a pre-defined formula to recover an accounting cost-based revenue requirement which includes an adjustable return on equity. This latter revenue stream is known generally as a "formula rate." The difference between these two revenue streams will be reconciled through the nonbypassable rider that AEP Ohio seeks authority to impose on all ultimate customers receiving electric distribution service from it.

The practical effect of this structure will cause the electric distribution customers of AEP Ohio to underwrite AEP Ohio's obligations under the wholesale Draft PPA Agreement. Specifically, regardless of the output of the generating plants or the generation supplier preferences of AEP Ohio's distribution customers, those customers will underwrite AEP Ohio's obligation to reimburse AEPGR for 100% of the accounting costs of the included generating units, including a return on equity. Furthermore, as explained below, AEP Ohio's proposal does not guarantee that these same electric distribution customers will not pay more for their generation supply than the guaranteed wholesale formula-based price.

Previously, in Case Nos. 13-2385-EL-SSO and 13-2386-EL-AAM, AEP Ohio sought authorization of a nonbypassable rider. That rider was based solely on the ownership-related output entitlement to generating units operated by OVEC. In its decision modifying and approving an electric security plan ("ESP") beginning June 1, 2015, the PUCO approved the rider with a zero dollar charge, having determined that the record reflected that the rider could result in a net cost to customers with little offsetting benefit from the rider's intended purpose as a hedge against market volatility.[1] In its Amended Application in this proceeding, which was filed May 15, 2015,[2] AEP Ohio seeks the PUCO's approval to apply this same contract for differences approach guaranteeing

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[1] *In the Matter of the Application of Ohio Power Company for Authority to Establish a Standard Service Offer Pursuant to R.C. 4928.143, in the Form of an Electric Security Plan*, Case Nos. 13-2385-EL-SSO, *et al.*, Opinion and Order at 24 (February 25, 2015) ("ESP III Order").

[2] Amended Application at 1 (May 15, 2015).

payment of the full accounting costs of AEP Ohio's OVEC entitlement and to the nine generating units included under the Draft PPA Agreement.

My testimony responds to four AEP Ohio witnesses. These include: (1) Mr. Pablo Vegas, who discusses industry trends which he indicates require AEP Ohio to establish the proposed nonbypassable rider;[3] (2) Mr. Toby Thomas, who discusses expectations about the economic viability of the generating units covered by the proposed PPA;[4] (3) Dr. Kelly D. Pearce, who discusses AEP Ohio's claimed stability benefits to retail customers of the PPA Rider;[5] and (4) Mr. William Allen, who discusses the economic benefits which AEP Ohio attributes to the proposed nonbypassable rider.[6]

**Q7. CAN YOU SUMMARIZE YOUR CONCLUSIONS AND RECOMMENDATIONS IN THIS PROCEEDING?**

A7. Yes. My conclusions and recommendations are as follows:

1. <u>The PUCO should reject AEP Ohio's Amended Application outright</u>. Under AEP Ohio's proposal, ultimate customers receiving distribution service from AEP Ohio will bear <u>all</u> of the operating and financial risks of the AEPGR generating units included under the Draft PPA Agreement and the nonbypassable charge, despite having no ability whatsoever to manage those risks. Such a risk allocation is both economically inefficient and inequitable because risk should be borne by those best able to manage it. Because AEP Ohio's proposed nonbypassable rider allocates

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3 Direct Testimony of Pablo Vegas in Support of AEP Ohio's Amended Application (May 15, 2015) ("Vegas Direct").

4 Direct Testimony of Toby Thomas in Support of AEP Ohio's Amended Application (May 15, 2015) ("Thomas Direct").

5 Direct Testimony of Kelly D. Pearce in Support of AEP Ohio's Amended Application (May 15, 2015) ("Pearce Direct").

6 Direct Testimony of William Allen in Support of AEP Ohio's Amended Application (May 15, 2015) ("Allen Direct").

all of the operational and financial risks of the PPA generating units to customers, it creates what economists call a “moral hazard.” A moral hazard creates economic inefficiency.

2. The Draft PPA Agreement and nonbypassable rider will adversely impact the competitiveness of the PJM wholesale capacity and energy markets. Because the Draft PPA Agreement and nonbypassable rider create a moral hazard by transferring operating and financial risk from AEPGR to AEP Ohio distribution customers, AEPGR will be able to undercut other competitive generation suppliers that must bear such risks themselves. Moreover, the PJM wholesale competitive capacity and energy markets will be affected adversely because the subsidized AEPGR units will artificially increase market supplies, depressing market prices, and harming other generators that do not have the minimum wholesale revenue guarantees that AEP Ohio seeks for the nine affiliated generating units under the Draft PPA Agreement. Ironically, AEP Ohio witness Vegas complains about PJM market flaws,[7] while failing to acknowledge that the proposed PPA and nonbypassable rider is itself a market distortion. Furthermore, given the integrated nature of the multi-state PJM market, the majority of any “benefits” of the proposed PPA and nonbypassable rider will be realized by customers outside Ohio, even though AEP Ohio’s proposal places 100% of the financial and operating risk on the electric distribution customers of AEP Ohio.

3. The Draft PPA Agreement and nonbypassable rider will adversely impact retail electric competition in Ohio. The transfer of the financial and operational risk of the PPA generating units to AEP Ohio’s distribution customers will reduce AEPGR’s overall risk relative to other competitive generation suppliers who wish to sell power to competitive retail electric service (“CRES”) providers or participate in the competitive bidding

[7] Vegas Direct at 21, line 16 to 22, line 15.

process for the supply of generation service for standard service offer ("SSO") customers, thus providing a unfair competitive advantage to AEPGR.

4. AEP Ohio witnesses provide no evidence of the alleged price hedging "benefits" of the Draft PPA Agreement and nonbypassable rider. AEP Ohio witness Pearce's estimates of the "volatility reduction benefits of the PPA"[8] are based on unsubstantiated PJM energy market price forecasts, wrongly assume there is no difference in AEP Ohio customer electricity demand under his 5% higher load growth and 5% lower load growth scenarios, do not reflect what AEP Ohio distribution customers pay for electricity, and do not even measure volatility. Moreover, Dr. Pearce presents "apples and oranges" comparisons between what AEP Ohio consumers will pay for electricity with and without the nonbypassable rider and ignores the price volatility induced by the nonbypassable rider itself. AEP Ohio witness Allen does not provide any evidence that less costly "volatility reduction benefits" cannot be obtained by AEP Ohio distribution customers directly through long-term contracts provided by CRES providers or through the laddered SSO auction products, as the PUCO itself recognized in its ESP III Order.[9]

5. AEP Ohio witnesses ignore the increased output volatility risk that AEP Ohio distribution customers will be exposed to as a result of the wholesale agreements between AEP Ohio and its affiliate and OVEC and related operation of the Draft PPA Agreement and nonbypassable rider. Specifically, AEP Ohio's distribution customers will bear all of the financial and operational risk associated with scheduled and forced outages, as well as operating restrictions arising from compliance with environmental regulations, such as the U.S. Environmental Protection Agency's ("EPA") Clean Power Plan ("CPP"). If the generating plants under the PPA do not

8 Pearce Direct at 16, Table II.

9 ESP III Order at 24.

run, AEP Ohio distribution customers must still pay the nonbypassable rider charge based on the formula rate, despite the lack of any revenues from sales into the PJM wholesale markets, plus pay capacity prices driven by PJM's capacity performance product, which is supposed to make generating plant owners responsible for performing in accordance with their reliability-related commitments. Furthermore, because the nonbypassable rider is "self-reconciling," AEP Ohio's distribution customers also will be exposed to the volatility created whenever the nonbypassable rider over-recovers or under-recovers the "revenue requirement" produced by the wholesale pricing formula that AEP Ohio has proposed.

6. If, contrary to my recommendation, the PUCO does not reject AEP Ohio's Amended Application outright, then I recommend the PUCO: (i) recalculate the rider to provide AEP Ohio distribution customers with a portion of AEP Ohio's forecasted benefits immediately; and (ii) prevent AEP Ohio from transferring the operational and financial risks to its distribution customers. This can be accomplished as follows:

a. The PUCO can refuse to involve itself in approving the proposed wholesale Draft PPA Agreement between AEPGR and AEP Ohio. Such wholesale agreements fall under the jurisdiction of FERC. Moreover, the PUCO should make clear that, if AEP Ohio enters into the Draft PPA Agreement or any other wholesale PPA with AEPGR, then AEP Ohio: (i) assumes all business and financial risk associated with such agreements, and (ii) is prohibited from transferring any or all of that risk to AEP Ohio distribution customers.

b. If AEP Ohio nevertheless decides to enter into the Draft PPA Agreement and wishes to share immediately the benefits it attributes to the agreement with AEP Ohio distribution customers, then the PUCO can allow AEP Ohio to seek approval of the nonbypassable rider, provided the rider is a credit only, and never a charge. The PUCO can initially task stakeholders with developing the details of how such a sharing will operate.

c. In the event AEP Ohio is unwilling to share immediately the benefits it attributes to the Draft PPA Agreement with AEPGR with its distribution customers, I recommend the PUCO maintain the current PPA Rider at zero and allow the Rider to expire at the end of the term of the current ESP.

## II. DESCRIPTION OF THE PROPOSED PPA AND NONBYPASSABLE RIDER

### A. <u>General Description of the Terms of the PPA and Nonbypassable Rider</u>

**Q8. CAN YOU BRIEFLY DESCRIBE THE DRAFT PPA AGREEMENT BETWEEN AEPGR AND AEP OHIO?**

A8. Yes. Under the Draft PPA Agreement, AEP Ohio, an electric distribution utility ("EDU"), will receive entitlement to all of the power output (capacity, energy and ancillary services) associated with coal-fired generating plants included under the Draft PPA Agreement.[10] AEP Ohio will then offer that wholesale entitlement into the PJM market. In turn, AEP Ohio will pay AEPGR an amount based on a formula rate.[11]

**Q9. CAN YOU SUMMARIZE THE COSTS INCLUDED IN THIS FORMULA RATE?**

A9. Yes. The wholesale pricing structure is set forth in Article V of the Draft PPA Agreement, which was provided previously by AEP Ohio as IEU RPD-1-002, Supplemental Attachment 1 (attached as Exhibit JAL-2). As stated

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[10] Pearce Direct, Exhibit KDP-1, at 1: "Generation Facilities."

[11] *Id*. at 2: "Buyer Payments."

in Sections 5.1 of the Draft PPA Agreement, AEP Ohio will pay AEPGR a monthly payment consisting of the components defined in Sections 5.2 – 5.7:

- (5.2) Fuel Payment. Section 1.1 of the Draft PPA Agreement defines "fuel costs" broadly, including all fixed and variable fuel-related costs (e.g., transport, storage, inventory, etc.), including the costs of all fuel hedges, and also including the costs related to emissions allowances.

- (5.3) O&M Payment. This includes all fixed and variable Operations and Maintenance ("O&M") costs, including a portion of retirement costs.

- (5.4) Depreciation Payment. This equals the depreciation expense incurred by AEPGR during the month, with depreciation rates subject to change every five years. There is no indication that any changes to these depreciation rates will be subject to regulatory review. The depreciation payment also includes any net book value when a generating plant is retired from commercial operation.

- (5.5) Capacity Payment. For each calendar month, this will consist of the net book value of the generating plants times AEPGR's weighted average cost of capital ("WACC"). Section 1.1 defines the debt and equity percentages for calculating AEPGR's WACC as 50% each. AEPGR's cost of debt will start at 4.73% and then be adjusted each year based on AEPGR's actual weighted average cost of debt. AEPGR's return on equity is defined as the Moody's average long-term corporate bond yield for Baa-rated securities, plus 6.5% (650 basis points). The return on equity is also subject to a defined range of 8.9% to 15.9%.

- (5.6) Tax Reimbursement Payment. The tax payment includes all taxes (except those included with the other payments). Furthermore, as set forth in Section 9.3 of the Draft PPA Agreement, AEP Ohio will be responsible for all changes in tax payments arising from changes in state and federal tax laws.

- (5.7) Other Miscellaneous Payment These will reimburse AEPGR for any other costs not included in the payments defined in Sections 5.2 – 5.6, including any PJM charges, and to pay AEPGR "retirement costs" in the event of termination. Specifically, Section 5.7(B) of the Draft PPA Agreement requires AEP Ohio to pay AEPGR an amount equal to the sum of the entire undepreciated net book value of generating units plus the retirement-related costs expected in the event that AEP Ohio terminates the agreement early, as described in Section 2.3.[12] Section 8.2 of the Draft PPA Agreement states that early termination does not relieve AEP Ohio's obligations to make payments to AEPGR, irrespective of how much compensation AEPGR will be able to realize from alternative sales of the output of the generating plants.

If the amount that AEP Ohio pays AEPGR under the Draft PPA Agreement is greater than the revenue AEP Ohio receives from the resale of energy, capacity, and ancillary services in the wholesale market, then AEP Ohio proposes to raise all of its distribution customers' electric bills to collect the difference from retail customers through the nonbypassable rider. If the compensation that AEP Ohio pays AEPGR under the Draft PPA Agreement is less than the revenue AEP Ohio receives from the resale of the output of the affiliated plants, then AEP Ohio will credit the difference to AEP Ohio distribution customers through the nonbypassable rider.

[12] Section 2.4 states that the parties can mutually agree to remove a generating unit covered under the Draft PPA Agreement, but AEP Ohio is still obligated to make payments as specified in Section 5.7(C).

**Q10. DOES THE PROPOSED PPA INCLUDE ALL OF AEPGR'S COAL-FIRED PLANTS?**

A10. No. Schedule A of the Draft PPA Agreement specifies the generating units included are: Cardinal Unit 1, Conesville Units 4 – 6, Stuart Units 1 – 4, and Zimmer Unit 1.

The Gavin generating station, which consists of Units 1 and 2, with collectively 2,665 MW of capacity, is excluded and is the largest coal-fired facility owned by AEPGR.

Three other AEPGR generating facilities are also excluded: (1) Waterford, an 840 MW capacity gas-fired combined-cycle generating facility; (2) Darby, a 507 MW capacity gas-fired combustion turbine; and (3) Racine, a 48 MW hydroelectric facility.

**Q11. WHAT IS THE PROPOSED DURATION OF THE NONBYPASSABLE RIDER?**

A11. According to its responses to IEU INT-4-004 and IEU INT-4-005 (attached as Exhibit JAL-3), the current nonbypassable rider is authorized for the three-year term of ESP III. However, in its March 27, 2015, Application for Rehearing of the ESP III Order, AEP Ohio stated that "the Company's intention would then be to continue to include the OVEC contract in the PPA Rider beyond the term of this *ESP III*, to the same extent that the Commission is committed, up front, to this long-term hedging arrangement."[13] Furthermore, in its response to IEU INT-4-006 (attached as Exhibit JAL-4), AEP Ohio states, "While the Commission

[13] *In the Matter of the Application of Ohio Power Company for Authority to Establish a Standard Service Offer Pursuant to R.C. 4928.143, in the Form of an Electric Security Plan*, Case Nos. 13-2385-EL-SSO, *et al.*, Application for Rehearing of Ohio Power Company at 19 (March 27, 2015) (emphasis in original).

authorized the current PPA Rider for the term of the current ESP, that does not mean that all future PPA Rider authorizations would be so limited."

**Q12. IF AEP OHIO'S PROPOSAL IS APPROVED, HOW FAR INTO THE FUTURE COULD THE NONBYPASSABLE RIDER BE EXTENDED?**

A12. I am not offering an opinion as to the legality of the term the PUCO could authorize, i.e., whether it could authorize a rider with a term that extends beyond the term of an ESP. The term of the OVEC Inter-Company Power Agreement ("ICPA") extends to 2040. The "End Date" of the Draft PPA Agreement is defined in Section 2.2 of the Draft PPA Agreement as the "commercial operational life of the generation facilities listed on Schedule A, including any post-retirement period to complete all asset retirement obligations and any other removal projects ('End Date'), unless the Parties otherwise mutually agree in writing upon an alternative End Date."[14]

Page 7 of AEP Ohio witness Pearce's Exhibit KDP-1 shows that the Zimmer Plant, which is one of the generating units shown on Schedule A of the Draft PPA Agreement, has the latest retirement date for this group of generating plants with a retirement date of 2051. Therefore, the nonbypassable rider could extend beyond 2051 until all of the retirement costs of Zimmer are paid by AEP Ohio distribution customers.

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[14] Draft PPA Agreement (Exhibit JAL-2) at 9.

## B. <u>The Combination of the Draft PPA Agreement and the Nonbypassable Rider Shifts Operational and Financial Risks of the PPA Generating Units Onto AEP Ohio Distribution Customers.</u>

**Q13. DOES THE COMBINATION OF THE DRAFT PPA AGREEMENT AND PROPOSED NONBYPASSABLE PPA RIDER SHIFT RISK FROM AEPGR TO AEP OHIO DISTRIBUTION CUSTOMERS?**

A13. Yes. Furthermore, this risk shifting occurs regardless of whether the same electric distribution customers obtain a benefit as a result of the Draft PPA Agreement. In fact, the goal of providing a benefit for AEP Ohio's electric distribution customers is not mentioned in the Draft PPA Agreement.

Under the proposed wholesale formula rate, AEP Ohio will be obligated to pay compensation to AEPGR monthly sufficient to cover all of the identified costs in the Draft PPA Agreement, including a non-cost based return on a hypothetical capital structure that is 50% long-term debt and 50% common equity.

**Q14. DOES THE RETURN ON EQUITY SPECIFIED IN THE DRAFT PPA AGREEMENT REFLECT THE ALLOCATION OF RISK TO AEP OHIO DISTRIBUTION CUSTOMERS?**

A14. No. The level of return or earnings is not discounted to reflect the fact that the Draft PPA Agreement allocates all of AEPGR's financial and operating risks to AEP Ohio, which in turn proposes to allocate all of these risks to electric distribution customers through the proposed nonbypassable PPA Rider.

Furthermore, this risk transfer will occur regardless of how much electricity the units actually generate. Section 3.2 of the Draft PPA Agreement states the agreement is "unit contingent," that is, there is no obligation for AEPGR to make available to AEP Ohio a pre-specified quantity of output to AEP Ohio for resale into the wholesale market.[15] The formula rate includes compensation for future investment in the affiliated plants and a return on and of that additional investment. Thus, in the event of an affiliated generating plant failure (e.g., boiler tube failure) requiring a major capital investment by AEPGR, the proposed PPA Rider will require AEP Ohio electric distribution customers to pick up the tab for such incremental investment. This is another example of how the combination of the Draft PPA Agreement and the nonbypassable PPA Rider will shift all of the financial and operational risks of AEPGR to AEP Ohio distribution customers.

**Q15. WITHOUT THE NONBYPASSABLE PPA RIDER, COULD AEPGR UNILATERALLY SHIFT THE OPERATIONAL AND FINANCIAL RISKS OF THE GENERATING UNITS UNDER THE PPA TO AEP OHIO DISTRIBUTION CUSTOMERS?**

A15. No. AEPGR has no service relationship with the distribution customers of AEP Ohio. The Draft PPA Agreement shifts operational and financial risk to AEP Ohio. The nonbypassable rider allows AEP Ohio to shift that risk to its electric distribution customers, irrespective of whether those customers select CRES providers or take SSO service.

## III. AEP OHIO'S CLAIMS REGARDING THE FINANCIAL NEED OF THE GENERATING PLANTS UNDER THE PROPOSED PPA ARE UNWARRANTED

**Q16. DID THE PUCO ESTABLISH FACTORS WHICH AEP OHIO MUST ADDRESS BEFORE THE PROPOSED PPA RIDER COULD BE IMPLEMENTED AS AEP OHIO HAS PROPOSED?**

A16. Yes. In the ESP III Order, the PUCO analyzed cost recovery of the alleged "benefits" of AEP Ohio's interest under the ICPA, based on its review of

[15] Section 1.1 of the Draft PPA Agreement defines "unit contingent" and "unit contingency."

the requirements of R.C. 4928.143(B)(2)(d). The PUCO concluded that the record reflected that the rider may result in a net cost to customers, with little offsetting benefit from the rider's intended purpose as a hedge against market volatility.[16] Based on those findings, the PUCO was not persuaded that AEP Ohio's proposal would promote rate stability or was in the public interest.[17] The PUCO also directed AEP Ohio to address four factors if it sought authorization to begin billing the PPA Rider. One of those factors is the financial needs of the generating plants.

**Q17. DO AEP OHIO WITNESSES ADDRESS THE FINANCIAL NEEDS OF THE GENERATING PLANTS?**

A17. Yes, but not in any quantitative manner. AEP Ohio witness Thomas characterizes all of the generating units covered under the proposed Draft PPA Agreement and, therefore, benefited by the proposed nonbypassable rider, as being "marginal units with respect to their economic viability while operating in a deregulated market."[18] Page 16 of AEP Ohio witness Vegas's testimony states that the plants are on the "economic bubble" because of low natural gas prices and "the artificial nature" of the PJM capacity market that "has resulted in suppressed prices in the near term."[19]

[16] ESP III Order at 24.

[17] *Id*.

[18] Thomas Direct at 9, lines 5-6.

[19] Vegas Direct at 16, lines 14-18.

**Q18. DO YOU BELIEVE AEP OHIO HAS PROVIDED A COMPLETE AND ACCURATE PICTURE OF THE FINANCIAL NEED OF THE GENERATING PLANTS COVERED UNDER THE DRAFT PPA AGREEMENT?**

A18. No. Although I have not prepared an independent analysis of the likely revenue streams available to AEPGR for the operation of the plants listed in the Draft PPA Agreement, I have reviewed AEP Ohio's corporate parent's statements to the financial community regarding AEPGR's generating plants. I am also familiar with the operations of the PJM markets. I conclude that the statements of Mr. Thomas and Mr. Vegas are either inconsistent with those of AEP itself or do not reflect properly that the PJM capacity market is intended to signal a need for replacement generation where there is an economic justification for new plants.

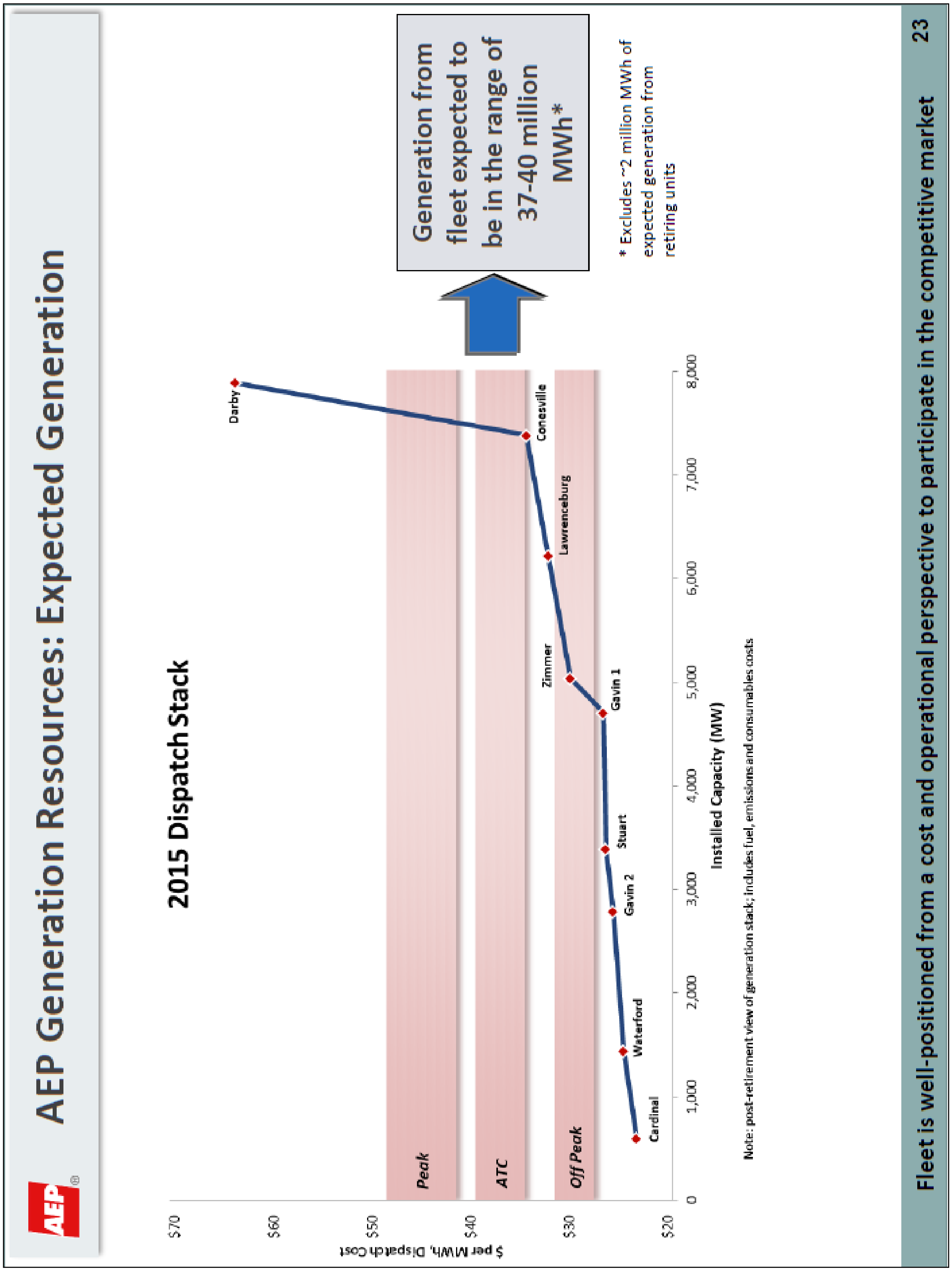
**Q19. IS MR. THOMAS'S CHARACTERIZATION CONSISTENT WITH AEP'S FINANCIAL GUIDANCE TO INVESTORS?**

A19. No. Exhibit JAL-5 is a copy of an April 1, 2015 presentation made by AEP representatives to the public, including the investment community.[20] Pages 22-25 of that presentation include a discussion of the company's competitive generation operations. On page 23, which is reproduced on the following page as Figure 1, AEP states that AEPGR's competitive generation fleet is "well-positioned from a cost and operational perspective to participate in the competitive market."[21]

[20] AEP, April 2015 Investor Meetings, April 1, 2015. A copy of the presentation is available at: http://www.aep.com/investors/eventspresentationsandwebcasts/documents/BrianChinInvestorsVisit4_1_2015.pdf (last visited September 7, 2015).

[21] *Id*. at 23.

**Figure 1: Slide 23 from AEP April 1 Investor Presentation**



**Q20. CAN YOU EXPLAIN YOUR UNDERSTANDING OF THE SIGNIFICANCE OF FIGURE 1?**

A20. Yes. Figure 1 shows the 2015 "dispatch stack" of AEPGR's generating units. The dispatch stack refers to the variable, or marginal, production cost of each generating unit. In economic terms, it is rational to operate a generating unit and generate electricity whenever the wholesale market price of electricity is greater than the variable production costs. The reason is that, absent consideration of revenue available to the same generating units from the separate PJM capacity or ancillary services markets, sales of electricity at prices in excess of variable production costs provide the owner with revenue that provides a contribution towards recovery of fixed costs, including a return of and on invested capital.

This particular chart in Figure 1 shows the variable cost of production of AEPGR's generating facilities with respect to PJM off-peak, around-the-clock ("ATC"), and on-peak prices in the 2015 PJM energy market. For example, the chart shows that AEPGR's Cardinal Unit, which is included in the Draft PPA Agreement, has the lowest variable production costs of all of AEPGR's fossil-fuel units. This chart indicates that AEP expects Cardinal to be competitive, even during off-peak hours when electricity demand and wholesale market prices are lowest.

Similarly, the chart shows that Stuart, which is also included in the Draft PPA Agreement, has a variable cost of production below the off-peak price range. Again, this chart indicates that AEP expects Stuart to be competitive, even during off-peak hours when electricity demand and wholesale market prices are lowest. In fact, Figure 1 shows that, based on the variable production costs of the generating plants covered under the Draft PPA Agreement, all of those plants are "well-positioned … to participate in the competitive market."[22]

**Q21. IS THIS CHART CONSISTENT WITH AEP OHIO WITNESS THOMAS'S TESTIMONY?**

A21. No. Rather than representing its merchant generating plants as marginal, AEP is telling investors and the financial community that the AEPGR "[f]leet is well-positioned from a cost and operational perspective to participate in the competitive market."[23] In other words, there is no indication that the Draft PPA Agreement is designed to satisfy a "financial need" that cannot be satisfied by AEPGR by its participation in the competitive wholesale market.

AEP Ohio witnesses Thomas and Vegas are telling the PUCO something quite different: that future investment in the generating units is not justified without a revenue guarantee. For example, Mr. Thomas states that the AEPGR plants are "on the economic 'bubble,' meaning the market conditions, as described by AEP Ohio witness Pearce, are not providing the necessary economic signals for incremental investment in these units."[24] Mr. Vegas points to low natural gas prices, which are reducing wholesale energy market prices, and distortions in the PJM capacity market as the reasons for the covered generating units under the Draft PPA Agreement being "on the bubble."[25] Both

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22 *Id*.

23 *Id*.

24 Thomas Direct at 11, lines 7-9.

25 Vegas Direct at 16, lines 14-18.

witnesses' testimony contradict AEP's public statements to the investor community because they claim there is a "financial need" that is not fully satisfied by the market.

**Q22. WHAT REASONS DOES AEP OHIO WITNESS VEGAS GIVE FOR CONCLUDING THAT THE CURRENT PJM MARKETS ARE DYSFUNCTIONAL?**

A22. Mr. Vegas' testimony states, "The current PJM capacity market structure does not support the continued long-term investment in existing units and has spurred very few plans for significant generation construction in Ohio.""[26] It also states, "The major flaw in the PJM capacity market is that it forces investors to make long-term investment decisions based on erratic short-term price signals."[27]

**Q23. IS MR. VEGAS'S TESTIMONY CONSISTENT WITH AEP'S INVESTOR PRESENTATION?**

A23. No. As already explained, Figure 1 indicates the AEPGR generating plants are "well-positioned" to compete in the PJM markets, yet Mr. Vegas's testimony claims that the PJM markets do not support continued investment in them. But the generating plants can be "well-positioned" to compete only if continued investment makes economic sense.

**Q24. DO ANY OF THE AEP OHIO WITNESSES DISCUSS OPPORTUNITIES FOR AEPGR TO ENTER INTO VOLUNTARY, LONG-TERM WHOLESALE BILATERAL CONTRACTS WITH OTHER BUYERS?**

A24. No, and this is an important point. If, as AEP Ohio claims in this proceeding, the Draft PPA Agreement will yield revenues in excess of the

[26] *Id*. at 20, lines 9-11

[27] *Id*. at 21, lines 16-17.

compensation it will pay AEPGR under the formula rate, AEP Ohio or some other willing buyer could act on the opportunity by entering into a long-term bilateral wholesale contract with AEPGR. If the generating plants included under the Draft PPA Agreement are well-positioned to compete in the competitive market, the risk of plant ownership also can be transferred to a willing buyer through a sale of the plants.

**Q25. HAS AEP OHIO PROVIDED ANY EVIDENCE THAT THE COMPANY'S AFFILIATE, AEPGR, HAS ATTEMPTED TO MAKE BILATERAL WHOLESALE SALES OR SELL THE GENERATING UNITS TO WILLING BUYERS?**

A25. No. AEP Ohio has offered no evidence that the bilateral contract or sale options presently available in the marketplace are not fully capable of accomplishing the goals that AEP Ohio is proposing to accomplish by the forced transfer of financial and operating risks from AEPGR to the electric distribution customers of AEP Ohio.

**Q26. DOES A HISTORIC LACK OF NEW GENERATION INVESTMENT WITHIN OHIO IMPLY THAT THE PJM MARKETS ARE FLAWED?**

A26. No. The PJM markets are designed to encourage new generation investment in areas where it is most valuable to do so. Historically, that has been in eastern PJM, which has had less surplus generating capacity than in western PJM. Not only does Mr. Vegas rely on a flawed standard for concluding that PJM's wholesale markets do not support long-term investment, but, as discussed below, there are at least three new large natural gas generating units either currently being constructed in Ohio or proposed to be constructed in Ohio.

**Q27. ON PAGE 21 OF HIS DIRECT TESTIMONY, MR. VEGAS STATES THAT IT IS EASIER TO BUILD NEW GENERATING FACILITIES IN NEIGHBORING REGULATED STATES. DOES HIS TESTIMONY SUPPORT IMPOSING A NONBYPASSABLE RIDER TO SUPPORT AEPGR'S GENERATING RESOURCES?**

A27. No. Mr. Vegas states, "Ohio's neighbors – Indiana, Michigan, Virginia, West Virginia, and Kentucky all provide regulated recovery of generation investments providing investors more clarity regarding the return on such large investments."[28] What Mr. Vegas fails to note is that one of the motivating factors for electric utility restructuring was that traditional cost-of-service regulation does not provide the same market discipline as competitive markets.

For example, it is perhaps no coincidence that Michigan has the highest average retail electric rates of the Great Lakes states, and that Michigan's retail electric rates have increased rapidly <u>after</u> retail competition was sharply curtailed there in 2008. In Illinois, by contrast, where there is retail competition, rates have decreased.[29] Furthermore, retail competition protects ratepayers from generating plant cost overruns. Mr. Vegas, for example, notes the ease of constructing new generation in Indiana. But he fails to note that one such "easily constructed" generating unit, Duke Energy's 618 MW Edwardsport integrated gas combined-cycle plant that began operation in 2013, had construction costs that ballooned to an estimated $3.5 billion, $900 million higher than the original $2.6 billion cost

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[28] *Id*. at 16, lines 12-14.

[29] For a discussion, *see* J. Lesser and P. O'Connor, "The Electricity Choice Debate: Conjectures and Refutations," *The Electricity Journal* 27 at 9-22, 19 (Figures 6 and 7) (Aug./Sept. 2014).

estimate.[30] Moreover, the Edwardsport plant has generated far less electricity than originally expected.[31]

The purpose of traditional cost-based, rate regulation, like any form of regulation, is to simulate the results that would occur in a competitive market. But what AEP Ohio is proposing is nothing like traditional cost-based regulation, which incorporates "prudent investment" requirements, management performance audits that test things like fuel and purchased power policies and practices, and "used and useful" requirements that protect consumers against being responsible for providing compensation before or without regard to whether an asset is actually providing service. Instead, AEP Ohio is proposing to insulate its competitive affiliate, AEPGR, from all competitive market risks associated with operating the coal plants included in the Draft PPA Agreement by transferring those risks to AEP Ohio's distribution customers.

**Q28. ON PAGE 24 OF HIS DIRECT TESTIMONY, MR. VEGAS STATES "OHIO SHOULD BE A PRIME LOCATION FOR NEW GAS-FIRED GENERATION INVESTMENT AS IT IS FORTUNATE TO SIT ON VAST RESERVES OF SHALE GAS," BUT THAT NEW GENERATING CAPACITY IS NOT BEING BUILT IN THE STATE IN A TIMELY MANNER.[32] IS THIS TRUE?**

A28. No. It is my understanding that new generation is being installed in Ohio. More specifically, it is my understanding that on August 20, 2015, Gemma Power

[30] *See* Duke Energy, IURC Cause No. 43114-IGCC4SI Phase I and Phase II, Settlement Agreement at 2 (April 30, 2012), available at: http://www.duke-energy.com/pdfs/Settlement-agreement-April-30-2012.pdf (last visited September 7, 2015).

[31] J. Russell, "Duke Energy or Indiana customers: Who should pay Edwardsport's climbing price tag?" Indianapolis Star-Tribune (February 4, 2015), available at: http://www.indystar.com/story/money/2015/02/03/edwardsports-climbing-price-tag-pay/22808045/ (last visited September 7, 2015).

[32] Vegas Direct at 24, lines 5-7.

Systems announced it will begin construction on a 475 MW gas-fired combined-cycle generating plant in Middletown, Ohio,[33] which is scheduled to be completed in the second quarter of 2018. In addition, it is my understanding that Clean Energy Future is building an 800 MW, gas-fired combined-cycle generating plant in Lordstown, Ohio. That plant is also scheduled to be on-line in the middle of 2018. It is my understanding that a third, 700 MW combined-cycle plant will be built in Carroll County by Advanced Power, and is scheduled to begin operating by the end of 2017. In its Application to the Ohio Power Siting Board, Carroll County Energy stated, "The Facility will help meet energy demand in the region, particularly in light of the retirement of aging generating capacity, with the retirement of 6.3 gigawatts (GW) of capacity announced for retirement in Ohio before 2016. The Facility will help meet this need by providing additional base load and peaking capacity via its natural gas-fired combined-cycle technology."[34]

It is my understanding that these three plants represent 2,000 MW of new generating capacity, all being built in Ohio by independent power companies, and all three of which will take advantage of vast natural gas reserves in or proximate to Ohio. Thus, despite the alleged lack of adequate long-term price signals, it appears that independent power generating companies <u>are</u> doing precisely what Mr. Vegas says cannot happen: investing in new generating plants in Ohio.

[33] "Gemma Power Systems to Build NTE Projects in Ohio and North Carolina," Business Wire, August 20, 2015.

[34] *In the Matter of the Application of Carroll County Energy, LLC for a Certificate of Environmental Compatibility and Public Need to Construct an Electric Generation Facility*, Case No. 13-1752-EL-BGN, Application at 1 (November 15, 2013). Carroll County Energy filed its Notice of Commencement of Construction on April 7, 2015.

**Q29. IS MR. VEGAS'S TESTIMONY CRITICIZING THE OPERATION OF THE PJM MARKETS ALSO CONTRARY TO PRIOR STATEMENTS MADE BY AEP OHIO TO THE PUCO?**

A29. Yes. For example, in its October 2007 Comments in Case Nos. 07-796-EL-ATA and 07-797-EL-AAM, AEP Ohio[35] discussed the benefits of competitive wholesale markets overseen by regional transmission organizations ("RTOs") such as PJM:

> These RTOs provide access to economically priced generation within their footprints to retail and wholesale customers. The organized markets operated by RTOs have resulted in greater price and cost transparency and have provided motivation for sound investments where needed. The Federal Energy Regulatory Commission (FERC) has given authority to independent market monitors to provide assessments of the state of the RTO markets, including PJM and MISO in Ohio, and generally examine the efficiency and efficacy of those markets. This oversight of the organized RTO markets, such as the function exercised by the PJM Market Monitoring Unit (MMU), helps ensure transparency, fair competition and an absence of the exercise of market power.[36]

As AEP Ohio recognized in its October 2007 Comments, PJM deliberately structured its markets to encourage new generation investment where it is most valuable: in transmission-constrained regions. Thus, the fact that wholesale prices in Ohio have been lower than in eastern PJM, and therefore there is less economic incentive to build new generating resources in Ohio, is not a market flaw. Rather, it is an economic reality that reflects constrained import capability into certain eastern PJM markets.

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[35] At the time these comments were filed, Columbus Southern Power Company and Ohio Power Company had not been combined into AEP Ohio.

[36] *In the Matter of the Application of Ohio Edison Company, The Cleveland Electric Illuminating Company, and The Toledo Edison Company For Approval of a Competitive Bidding Process For Standard Service Offer Electric Generation Supply, Accounting Modifications Associated With Reconciliation Mechanism and Phase In, And Tariffs for Generation Service*, Case Nos. 07-796-EL-ATA, *et al*., Reply Comments of Columbus Southern Power and Ohio Power Company at 4 (October 12, 2007) (emphasis added).

**Q30. HAVE OTHER AEP EMPLOYEES TESTIFIED ON THE BENEFITS OF THE PJM COMPETITIVE ELECTRIC MARKETS?**

A30. Yes. For example, in December 2007, Craig Baker, the former AEP Senior Vice President-Regulatory Services, testified before the House Public Utilities Committee, saying:

> Naysayers will tell you that competitive electric markets will be bad for the economy and that the market will never work - competitors will not appear and long-term contracts will be unavailable. They tell you that you will all be buying off the spot market from monopolist suppliers. Do the competitors show up when a well-structured market is created? Jersey Central provides 15 suppliers to industrials in a very small state. And they do offer long term contracts. Texas has 12 competitive suppliers offering 50 products, including long-term contracts and many other innovations that consumers - residential, commercial and industrial - are hungry for.
>
> * * *
>
> A cost-of-service protocol with a competition underlay does one thing and one thing only. It provides customers with the lowest possible short-term prices. It can not and will not facilitate innovation, infrastructure investment, or long-term low prices. It precludes any advanced energy innovations, except by mandate.[37]

Two months earlier, Mr. Baker testified on behalf of AEP Ohio before the Senate Energy and Public Utilities Committee. In that testimony, he stated, "Contrary to the rhetoric, AEP Ohio submits that Ohio is part of a robust regional wholesale power market. … The organized markets operated by RTOs have resulted in greater price and cost transparency, and provide motivation for sound investments where needed."[38]

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[37] Before the House Public Utilities Committee, Testimony of J. Craig Baker, Senior Vice President–Regulatory Services, American Electric Power at 3-4 (December 5, 2007).

[38] Before the Senate Energy and Public Utilities Committee, Testimony of J. Craig Baker, Senior Vice President–Regulatory Services, American Electric Power at 4-5 (October 2, 2007).

**Q31. IS THE DRAFT PPA AGREEMENT AND PROPOSED NONBYPASSABLE RIDER CONSISTENT WITH AEP OHIO'S COMMENTS AND TESTIMONY IN 2007?**

A31. No. As noted above, AEP Ohio stated in its October 2007 Reply Comments that PJM's market structure is designed to incent generation resource development where it is most needed, not in specific states. In this case, however, AEP Ohio witness Vegas states, "The current PJM capacity market structure does not support the continued long-term investment in existing units and has spurred very few plans for significant generation construction <u>in Ohio</u>."[39] In other words, Mr. Vegas is changing the standard by which the "success" of the PJM market is being measured, from whether the market incents new generation development where it is needed in PJM to whether the market incents new generation development in Ohio. That is clearly inconsistent with Mr. Baker's testimony in 2007.

**Q32. DO YOU BELIEVE IT IS IMPORTANT FOR THE PUCO TO ENSURE THERE IS BASELOAD GENERATING CAPACITY OPERATING WITHIN THE STATE, EVEN IF THAT GENERATING CAPACITY MUST BE SUBSIDIZED?**

A32. No. Ensuring overall PJM system reliability is the responsibility of PJM, and not the PUCO, AEP Ohio, or AEPGR. More importantly, the new baseload generating plants that are being built in Ohio by independent power generators are evidence that subsidies are <u>not</u> required to ensure baseload generating capacity operates in the state. The new generating capacity is being built in the state because it makes economic sense to do so. (A specific geographic location for generating capacity may become an important consideration to ensure overall

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[39] Vegas Direct at 20, lines 9-11 (emphasis added).

PJM system reliability, in cases where the specific location is dictated by a need for reliability-related purposes (e.g., local voltage support), or if generating capacity is needed because of transmission constraints into a specific geographic area.)

**Q33. IS PJM'S NEW CAPACITY PERFORMANCE MARKET DESIGNED TO ENCOURAGE GREATER GENERATOR RELIABILITY AND LOWER FORCED OUTAGE RATES?**

A33. Yes. The Capacity Performance ("CP") product PJM is now securing through transitional and base capacity auctions is designed to compensate generating units for improved performance and provide clearer market signals for long-term investment. This is important because, under the previous capacity market structure, the penalties for non-performance were nominal. PJM recently held the first auction for capacity under this new market design for the planning year 2018-19. The results of this auction were announced on August 21, 2015.[40] The market-clearing price for the CP product in the Rest-of-RTO is $164.77 and $149.98 for the Base Product. This represents a 25% increase from the 2017-18 planning year price of $120/megawatt-day ("MW-day") for Base Capacity Resources that do not qualify as CP resources. For generating capacity that does qualify, the increase in compensation will be 37%.

[40] See "2018/2019 RPM Base Residual Auction Results," August 21, 2015, available at: http://www.pjm.com/~/media/879A2FA2A1794C7887A98686A70336D2.ashx (last visited September 7, 2015).

**Q34. AEP OHIO'S TESTIMONY INDICATES THAT THE PUCO SHOULD APPROVE ITS PROPOSAL BECAUSE OF ALLEGED PROBLEMS WITH THE ORGANIZED MARKET STRUCTURE OF PJM. WAS AEP OHIO FORCED TO JOIN PJM?**

A34. No. As a condition of FERC's approval of the merger between AEP and Central & Southwest Corporation, FERC required AEP to sever ownership and control over the transmission function by joining a FERC-approved RTO. In AEP's case, this eventually meant joining either PJM or the Midcontinent Independent System Operator, Inc. ("MISO").

**Q35. WHAT IS YOUR UNDERSTANDING OF WHY AEP CHOOSE TO JOIN PJM?**

A35. According to its "AEP Integration Q&A" (attached as Exhibit JAL-6),[41] "AEP chose PJM over other RTOs because it is the most established and mature of the FERC-approved RTOs adjacent to AEP's eastern service territory and has a proven performance record."[42]

**Q36. DID THAT SAME Q&A EXPLAIN THE BENEFITS OF PJM MEMBERSHIP?**

A36. Yes. In response to the question, "How will AEP's membership in PJM benefit consumers and the competitive electricity marketplace?" the Q&A states:

> Retail customers will benefit from enhanced transmission service reliability. PJM also operates the largest competitive wholesale electricity market in the world. Membership in PJM will provide:
>
> - Greater access to low-cost generation for transmission owners and other load-serving entities within the PJM footprint. The PJM region has nearly 135,000 megawatts of generation.

[41] A copy of this fact sheet is also available at: http://www.aep.com/newsroom/resources/pjm/PJM_AEPintegrationQ&A.pdf (last visited September 7, 2015).

[42] *Id*. at 2.

- Efficient energy, capacity and ancillary services markets where all market participants can buy and sell.

- Attractive customer options, such as real-time spot market trading and day-ahead pricing, among others.

- Market monitoring to ensure the rules are followed.

- The certainty of supply that comes from a liquid spot market for electricity.

- Many market participants attracted by fair, visible pricing.[43]

The reasons for PJM membership listed in this Q&A are consistent with AEP Ohio's October 2007 Comments in Case Nos. 07-796-EL-ATA and 07-797-EL-AAM.

## IV. THE PROPOSED PPA AND NONBYPASSABLE RIDER EXPOSE AEP OHIO DISTRIBUTION CUSTOMERS TO ECONOMIC HARM

### A. <u>AEP Ohio's Claims of Benefits to Retail Consumers Are Unwarranted.</u>

**Q37. DOES AEP OHIO INDICATE THAT A BENEFIT OF THE NONBYPASSABLE RIDER IS THAT IT WILL REDUCE THE VOLATILITY OF PRICES FOR POWER?**

A37. Yes. AEP Ohio witness Pearce presents estimates of reduced price "volatility" associated with the Draft PPA Agreement and nonbypassable rider, which purport to show that the PPA will reduce the wholesale price spread faced by AEP Ohio distribution customers by an average of $6.80/MWh over the period October 2015 – December 2024.[44] I have placed the word "volatility" in quotation marks because, as I discuss below, what Dr. Pearce has calculated has nothing whatsoever to do with how volatility is actually calculated. Moreover, as I discuss

[43] *Id*.

[44] Pearce Direct at 16, Table II.

below, Dr. Pearce's incorrect "volatility" reduction estimates are themselves incorrect.

**Q38. HOW IS VOLATILITY ACTUALLY DEFINED?**

A38. As I discuss in *Principles of Utility Corporate Finance*, volatility is the standard deviation of a set of data over a discrete time period.[45] For example, suppose we want to calculate the volatility of PJM energy market prices using one year's worth of price data. The annual volatility of those prices equals the standard deviation of the daily prices for the year. Next, suppose we want to determine the monthly volatility. In that case, we would divide the annual volatility by the square root of 12, because there are 12 months in a year.

**Q39. CAN YOU DESCRIBE DR. PEARCE'S "VOLATILITY" ESTIMATES?**

A39. Yes. Dr. Pearce's "volatility" estimates are simply his estimated changes in annual average ATC energy prices. For example, in Table II of his testimony, Dr. Pearce shows a price spread between his "+5% Load ATC Price" and "-5% Load ATC Price" scenarios of $16.10/MWh in 2016 without the nonbypassable rider (line 4), and a spread of $8.10/MWh with the nonbypassable rider (line 8). Dr. Pearce concludes that this "PPA Impact on Spread" (i.e., the -$8.00/MWh value shown on line 9) is equivalent to a reduction in price volatility. He further states, "This volatility reduction will lead to more stable retail rates."[46] And, referring to AEP Ohio distribution customers, AEP Ohio witness Vegas states

[45] L. Giacchino and J. Lesser, *Principles of Utility Corporate Finance* at 51, (Reston, VA: Public Utilities Reports, Inc. 2011).

[46] Pearce Direct at 16, line 13.

that the nonbypassable rider "will protect them from the impacts of market volatility, especially during periods of extreme weather."[47]

**Q40. WILL THE PPA RIDER LEAD TO MORE STABLE RATES AND WILL IT PROTECT AEP OHIO DISTRIBUTION CUSTOMERS FROM THE IMPACTS OF MARKET VOLATILITY, ESPECIALLY DURING PERIODS OF EXTREME WEATHER?**

A40. No. First, the nonbypassable rider itself will not affect PJM ATC energy prices. Therefore, AEP Ohio distribution customers will be subject to the same hourly, daily, and monthly price volatility. As I discuss in Section V, *infra*, because the combination of the Draft PPA Agreement and nonbypassable rider will create a moral hazard by transferring financial and operational risk to captive AEP Ohio distribution customers, it will have a suppressive effect on the PJM wholesale energy and capacity markets. But, again, the nonbypassable rider itself will have no impact on price volatility.

Second, AEP Ohio witness Allen states, "The Company originally proposed an annual true-up of the PPA Rider in the ESP III filing. However, the Company indicated during those proceedings that it is open to updating the rider on a quarterly basis."[48] Therefore, an annual, or even quarterly, true-up process cannot "protect" distribution customers "from the impacts of market volatility, especially during periods of extreme weather,"[49] such as the 2014 Polar Vortex event.

[47] Vegas Direct at 3, lines 19-20.

[48] Allen Direct at 9, lines 10-12.

[49] Vegas Direct at 3, lines 19-20.

If energy market prices spike on a given day and a distribution customer is paying a spot market price for power, that ratepayer will not be "protected" by the nonbypassable rider. In fact, if an AEPGR unit covered under the Draft PPA Agreement has suffered a forced outage, because of, say, a frozen coal pile during extreme cold like the Polar Vortex conditions, then that distribution customer could be forced to pay penalty charges levied by PJM for the unit's lack of availability during an extreme weather event.

**Q41. ARE THE ANNUAL PRICE SPREADS DR. PEARCE CALCULATES BETWEEN HIS "+5% LOAD ATC PRICE" AND "-5% LOAD ATC PRICE" SCENARIOS CONSISTENT WITH THE DEFINITION OF PRICE VOLATILITY YOU DESCRIBED PREVIOUSLY?**

A41. No. Dr. Pearce has not calculated price volatility or reductions in price volatility. He is simply taking individual annual average ATC values and looking at how they differ under his high- and low-load growth scenarios. That has nothing to do with the actual definition of price volatility as the standard deviation of a price series over a defined period of time. Second, Dr. Pearce's calculations do not reflect the actual retail energy and capacity prices AEP Ohio distribution customers will pay. Those customers will pay energy and capacity prices based on SSO rates or, for shopping customers, whatever prices customers obtain from CRES providers.

**Q42. DOES DR. PEARCE EXPLAIN IN HIS TESTIMONY HOW HE ESTIMATED HIS "VOLATILITY" REDUCTION BENEFIT?**

A42. Not in his testimony. Dr. Pearce's confidential workpaper WP-3 provides some calculations. That workpaper presents forecasts of monthly off-peak, ATC, and on-peak energy prices for the weather normalized load, 5% higher load growth ("High Market"), and 5% lower load growth ("Low Market") scenarios. The workpaper also presents annual ATC values under these three load growth scenarios. And, the workpaper provides the calculations Dr. Pearce made to translate the annual costs or benefits of the nonbypassable rider into "changes" in ATC prices, even though, as I explained above, the rider itself will not affect PJM market prices.

**Q43. CAN YOU EXPLAIN HOW DR. PEARCE CALCULATES THE ATC PRICES WITH THE RIDER SHOWN IN TABLE II OF HIS TESTIMONY?**

A43. Yes. The "with rider" ATC price is calculated by taking the estimated annual rider cost or benefit shown in Dr. Pearce's Exhibit KDP-2 and dividing that value by the forecast AEP distribution load for each load growth scenario. For example, Exhibit KDP-2 asserts that, under the "-5% Load ATC Price" load growth scenario, the net cost of the nonbypassable rider to AEP Ohio distribution customers will be $137 million in 2016. Taking that amount and dividing by AEP Ohio's distribution forecast demand in 2016 of 43,644 gigawatt-hours ("GWh") yields an average price increase of $3.14/MWh.[50] Dr. Pearce adds this amount to the "Without PPA Rider" ATC value for 2016, $40.12/MWh, to derive his "With PPA Rider" ATC Price of $43.26/MWh ($43.3/MWh as shown in Table II).

[50] ($137 million) / (43,644 GWh) = ($137 million) / (43,644,000 MWh) = $3.14/MWh.

**Q44. IS THIS CALCULATED CHANGE IN THE AVERAGE ANNUAL ATC PRICE CORRECT?**

A44. No. First, as I have explained, the nonbypassable rider does not change ATC prices at all. Dr. Pearce simply averages out the nonbypassable rider benefit or cost in each year over AEP Ohio total distribution customer load and equates those average values with changes in ATC prices. It does not represent what AEP Ohio distribution customers actually will pay for electricity through the SSO or through agreements with CRES providers.

Second, Dr. Pearce's actual calculation is incorrect, because he assumes that total AEP Ohio customer demand in each year under the "-5% Load ATC Price" and "+5% Load ATC Price" load growth scenarios is the same. For example, he assumes that AEP Ohio customer demand in 2016 will be 43,644 GWh in both load growth scenarios. Presumably, however, if overall PJM load growth increases or decreases, total AEP Ohio customer demand would increase or decrease as well. Dr. Pearce does not explain why he uses the same load forecast for AEP Ohio distribution customers.

Third, Dr. Pearce's calculations ignore the <u>retail</u> prices AEP Ohio distribution customers will pay. Instead, he assumes there is a one-to-one correspondence between average wholesale prices and average retail prices in each year. That assumption ignores the multi-year laddering built into the SSO price and ignores price hedges that AEP Ohio shopping customers may enter into voluntarily with their CRES providers. By ignoring the hedging implicit in the SSO prices and ignoring shopping customers' own price hedging efforts, Dr. Pearce overestimates the price spread AEP Ohio distribution customers will experience in each year. As such, even using his incorrect definition of volatility, Dr. Pearce overestimates the "volatility reduction" benefits of the nonbypassable rider.

**Q45. DO DR. PEARCE'S CALCULATIONS OF THE CHANGE IN ATC VALUES INCLUDE THE CAPACITY COST THAT AEP OHIO DISTRIBUTION CUSTOMERS WILL BE REQUIRED TO PAY UNDER THE DRAFT PPA AGREEMENT?**

A45. No. The ATC prices in his workpaper WP-3 are energy prices only, and do not incorporate the cost of capacity. However, when Dr. Pearce estimates his ATC price "change," he includes the $500/MW-day average capacity cost of the covered generating units under the Draft PPA Agreement.[51] As I discussed previously, that average capacity cost is not only three times greater than the most recent, 2018-19 planning year PJM capacity auction clearing price, it is over 70% greater than the $288.95/MW-day net cost of new entry ("Net CONE") PJM determined for the AEP zone in this same 2018-19 planning year.

Thus, not only is Dr. Pearce wrongly attributing a change in ATC prices to the nonbypassable rider, he is making an "apples to oranges" comparison, by comparing a set of annual PJM energy market prices that exclude market-priced capacity with another set of prices that includes the above-market capacity cost of the AEPGR generating units included under the Draft PPA Agreement.

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[51] Pearce Direct at 31, Table III.

**Q46. DO YOU CONCLUDE THAT DR. PEARCE'S TESTIMONY "PROVES" THE NONBYPASSABLE RIDER IS GOOD FOR AEP OHIO'S SSO AND SHOPPING CUSTOMERS?**

A46. No. As I discussed previously, not only is Dr. Pearce's analysis flawed and incomplete, it does not measure PJM energy market volatility, and it makes "apples and oranges" comparisons. Furthermore, Dr. Pearce's analytical framework ignores the volatility induced by the nonbypassable rider itself. The nonbypassable rider will move up and down to reconcile the difference between the wholesale revenue that AEP Ohio is paying AEPGR and the wholesale revenue AEP Ohio obtains from reselling whatever output it obtains from AEPGR under the Draft PPA Agreement.

**Q47. WHAT IS YOUR UNDERSTANDING OF THE PUCO'S PRIOR DETERMINATION REGARDING THE AVAILABILITY OF PRICE HEDGING IN THE MARKETPLACE?**

A47. In its ESP III Order, the PUCO stated, "Also, as Staff and several intervenors point out, there are already existing means, such as the laddering and staggering of SSO auction products and the availability of fixed price contracts in the market, that provide a significant hedge against price volatility."[52]

**Q48. DO YOU AGREE?**

A48. Yes. Moreover, unlike AEP Ohio's nonbypassable rider, SSO laddering and fixed price market contracts do reduce customers' exposure to price and bill volatility that would otherwise exist absent the hedging strategy.

[52] ESP III Order at 24.

**Q49. AT PAGE 6 OF HIS DIRECT TESTIMONY, AEP OHIO WITNESS ALLEN STATES THAT SSO LADDERING AND CRES PROVIDERS CANNOT PROVIDE THE SAME DEGREE OF PRICE STABILITY AS UNDER THE DRAFT PPA AGREEMENT AND NONBYPASSABLE RIDER.[53] DO YOU AGREE?**

A49. No. Mr. Allen simply assumes that the Draft PPA Agreement and nonbypassable rider have a unique ability to provide price stability that cannot otherwise be accomplished through the use of wholesale supply contracts or retail supply contracts. Moreover, if Mr. Allen's statement was correct—that is, if the Draft PPA Agreement and nonbypassable rider have unique hedging properties not available through the competitive market—it would highlight the potential market distortion introduced by the affiliate transaction embedded in the Draft PPA Agreement and nonbypassable rider. As with Dr. Pearce's testimony, Mr. Allen's testimony indicates Mr. Allen has ignored the fact that actual wholesale energy price volatility in the PJM market will not be affected by the nonbypassable rider.

Mr. Allen's testimony points to the PUCO's ESP III Order language, but wrongly equates the Draft PPA Agreement and nonbypassable rider as providing the benefits identified by the PUCO.[54]

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[53] Allen Direct at 6, line 13 – 8, line 8.

[54] *Id*. at 7, lines 10-19.

For example, the ESP III Order states, "there may be value for consumers in a reasonable PPA rider proposal that provides for a significant financial hedge that truly stabilizes rates, particularly during periods of extreme weather."[55] However, AEP Ohio's proposed annual or quarterly adjustment of the nonbypassable rider could not "hedge" PJM energy market prices during extreme weather events lasting only a few days. If AEP Ohio distribution customers were paying spot market prices for electricity, they would still pay those same prices during extreme weather, with or without the nonbypassable rider. If those same customers were paying generation supply prices based on the SSO or fixed-price retail contracts, they would pay those same prices during extreme weather with or without the nonbypassable rider.

**Q50. AT PAGE 30 OF HIS DIRECT TESTIMOMY, DR. PEARCE STATES THAT THE DRAFT PPA AGREEMENT AND NONBYPASSABLE RIDER WILL SHIELD CUSTOMERS FROM HIGHER EXPECTED CAPACITY MARKET PRICES UNDER PJM'S NEW CP CAPACITY MARKET. DO YOU AGREE?**

A50. No. Referring to PJM's new CP capacity market, Dr. Pearce states:

> This activity underscores the benefits of the PPA Rider for AEP Ohio and its customers. I previously discussed the energy hedge benefits of the PPA Rider. Regarding capacity, if the PJM capacity market begins rising to more sustainable clearing prices due to all of this market reform activity, AEP Ohio customers will be partially shielded from these higher PJM market capacity prices. The long term expectation of the PJM capacity market is for capacity prices that clear at or near Net CONE. For 2018/19 this is approximately \$300/MW-day.[56]

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55 ESP III Order at 25.

56 Pearce Direct at 30, lines 1-7.

As I discussed previously, Table III of Dr. Pearce's testimony shows fixed capacity costs for the generating units covered under the Draft PPA Agreement to be $497.67/MW-day in 2016, and $507.46/MW-day in 2017.[57] These fixed capacity-related costs will be embedded in the formula rate which AEP Ohio proposes to use to determine the cost side of the "hedge." Even if, *arguendo*, these capacity cost values are accurate, based on the relevant accounting costs, forcing customers to pay approximately $500/MW-day for capacity when the most recent PJM Reliability Pricing Model ("RPM") auction results were approximately $164.77/MW-day for CP resources is no benefit or bargain.

The only reason AEP Ohio distribution customers will be "partially shielded from these higher PJM market capacity prices"[58] is because those customers will be forced to pay far higher prices—three times the market price in 2018-19—for that same capacity. Thus, the Draft PPA Agreement and nonbypassable rider are designed to insulate AEPGR from exposure to the risk that the market price of capacity will be less than the cost of capacity attributed to the generating plants covered by the Draft PPA Agreement and transfer that risk to AEP Ohio's distribution customers.

Moreover, as I discussed previously, AEP Ohio distribution customers will <u>still</u> pay market prices for generation supply, either as a result of the competitive bidding process used for SSO pricing or as a result of supply obtained from CRES providers. Based on the Draft PPA Agreement between AEPGR and AEP Ohio, the opportunity for the PPA proposal to provide customers with a

57 *Id*. at 16, Table III.

58 *Id*. at 30, lines 4-5.

"dividend" depends on AEP Ohio obtaining revenues from sales of energy, capacity, and ancillary services in the wholesale market that exceed all of AEPGR's accounting costs (including a guaranteed profit) that are attributed to the affiliated PPA generating units.

## B. The Draft PPA Agreement and Nonbypassable Rider Will Harm AEP Ohio Distribution Customers by Shifting Operational and Financial Risk to Them.

**Q51. PAGE 29 OF THE DIRECT TESTIMONY OF AEP OHIO WITNESS VEGAS STATES THAT THE PROPOSED PPA PROPERLY ALLOCATES RISK BETWEEN AEP OHIO AND CUSTOMERS. DO YOU AGREE?**

A51. No. Mr. Vegas states that, because AEP Ohio "is at risk of having recovery of the PPA Rider balance being disallowed in a future ESP proceeding or not having the Affiliated PPA renewed … the PPA Rider proposal properly allocates financial risk between the Company and its customers, as contemplated in the *ESP III Order*."[59] Mr. Vegas's argument is without merit.

Based on the advice of counsel and my own knowledge, I understand that, as an electric distribution company, AEP Ohio is subject to traditional utility regulation. All traditionally regulated utilities bear a financial risk that costs they incur in conjunction with providing the regulated service might be disallowed or excluded for ratemaking purposes. The fact that AEP Ohio proposes that the PUCO may be allowed to audit the mathematical accuracy of the costs and revenues under the PPA does not change the fact that the financial and operating risks of the covered competitive generating business units become the

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59 Vegas Direct at 29, lines 6-12.

responsibility of AEP Ohio distribution customers, rather than AEPGR or AEP Ohio.

It is also my understanding AEP Ohio is not proposing that the PUCO will have the full range of regulatory authority, as if the PUCO were using its traditional ratemaking authority. Furthermore, it is my understanding that the ESP law allows AEP Ohio to effectively veto a decision in an ESP context to the extent that the PUCO modifies an ESP proposed by AEP Ohio. In any event, the potential for the PUCO to eliminate the negative effects of a bad deal on customers at some point in the future has nothing to do with the impact of the bad deal on customers or on the risks that are allocated to customers in the interim. This is particularly true if the damage done to customers is not remedied fully through a refund or something that makes customers whole for their losses during the period that the bad deal was allowed to produce bad outcomes for the customers.

**Q52. DO WHOLESALE POWER SALES AGREEMENTS BETWEEN COMPETITIVE GENERATION AFFILIATES AND THEIR REGULATED LOCAL UTILITIES TYPICALLY PLACE ALL FINANCIAL AND OPERATING RISKS ON CAPTIVE CUSTOMERS?**

A52. No. Approval of PPAs between affiliates, such as the proposed PPA between AEPGR and AEP Ohio, has typically fallen under the auspices of FERC's so-called "*Edgar*" standard, which was established in 1991.[60] Under *Edgar*, it is my understanding that wholesale transactions between affiliates must demonstrate there is no anticompetitive affiliate abuse. In its 2004 *Mountainview*

[60] *Boston Edison Company re: Edgar Electric Energy Co.*, 55 FERC ¶ 61,382 (1991) ("*Edgar*").

order,[61] it is my understanding that FERC revised the *Edgar* standard and provided more specific requirements for affiliates in order to demonstrate there was no anticompetitive affiliate abuse involved in cost-based contracts, such as the proposed PPA.[62]

**Q53. HOW CAN THIS TYPE OF RISK SHIFTING LEAD TO POTENTIAL ANTICOMPETITIVE AFFILIATE ABUSE?**

A53. As I discuss in Section V, *infra*, risk-shifting such as will occur under the Draft PPA Agreement and nonbypassable rider can adversely affect competitive markets.

**Q54. TO YOUR KNOWLEDGE, HAS AEP OHIO IDENTIFIED HOW THE DRAFT PPA AGREEMENT COMBINED WITH THE NONBYPASSABLE RIDER MIGHT SATISFY THE FERC REQUIREMENTS UNDER *MOUNTAINVIEW*?**

A54. No. I am not aware that either AEP Ohio or AEPGR has attempted to demonstrate, or even address, any of the conditions set out in *Edgar* or *Mountainview*. Furthermore, given AEP Ohio's response to the Ohio Energy Group's ("OEG") INT-1-003 (attached as Exhibit JAL-7), it appears AEP Ohio has no intention of attempting to meet those conditions. If the Draft PPA Agreement between AEPGR and AEP Ohio will not be submitted to FERC and subjected to evaluation under the *Edgar* or *Mountainview* standards, then the PUCO must ensure that the affiliate transaction between AEP Ohio and AEPGR and involving a competitive service does not result in anticompetitive abuse.

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61 *Southern California Edison Company on behalf of Mountainview Power Company, L.L.C*., 106 FERC ¶ 61,183 (2004) ("*Mountainview*").

62 For a detailed discussion, see K. Strunk and K. Patel, "FERC Imposes New Constraints on Utility Procurement," *The Electricity Journal* 16 at 43-51 (October 2004), available at: http://www.nera.com/content/dam/nera/publications/archive1/Electricity%20Journal%20article_Strunk_Oct_2004.pdf (last visited September 7, 2015).

**C. <u>Shifting the Financial and Operational Risk of the Proposed PPA to AEP Ohio Distribution Customers Will Create a Moral Hazard.</u>**

**Q55. CAN YOU DESCRIBE A MORAL HAZARD FROM AN ECONOMIC PERSPECTIVE?**

A55. Yes. A moral hazard occurs when a party who creates or would otherwise carry risk does not bear the consequences of that risk, and instead shifts the risk onto a third party who has no control over the risk.

**Q56. FROM AN ECONOMIC PERSPECTIVE, IS SUCH A MORAL HAZARD PROBLEMATIC?**

A56. Yes. Such a moral hazard is problematic because it leads to inefficient outcomes. If I do not bear the risks of my actions, then I will take on greater risk than is economically efficient. In effect, moral hazard reduces the price of risk to the risk-shifting entity to an inefficient level. For example, one of the causes of the housing crisis in 2008 was that banks made mortgage loans to individuals who were at high risk of default because the banks were able to transfer the default risk of those loans to other parties.

**Q57. HOW DOES THE PROPOSED PPA AND NONBYPASSABLE RIDER CREATE A MORAL HAZARD?**

A57. The Draft PPA Agreement combined with the nonbypassable rider are a clear example of a voluntary risk transfer from AEPGR to AEP Ohio—and a subsequent involuntary transfer of risk to a third party: AEP Ohio distribution consumers. Those customers will have no control over that transferred financial and operational risk, yet they will be forced to bear all of it. As such, from an economic perspective the Draft PPA Agreement combined with the nonbypassable rider will create a classic moral hazard situation.

**Q58. FROM AN ECONOMIC PERSPECTIVE, IS EFFICIENT RISK ALLOCATION IMPORTANT?**

A58. Yes. In simple terms, those who reap the benefits of market transactions should also bear the associated risks because they are best positioned to evaluate and manage those risks.

## D. <u>The EPA Clean Power Plan Will Impose Additional Financial and Output Risk on AEP Ohio Distribution Customers if the Draft PPA Agreement and Nonbypassable Rider Are Approved.</u>

**Q59. CAN YOU BRIEFLY DESCRIBE THE EPA'S CLEAN POWER PLAN?**

A59. Yes. The EPA's Final Rule, "Electric Utility Generating Units Constructed on or Before January 8, 2014; Model Trading Rules; Amendments to Framework Regulations," is commonly referred to as the "Clean Power Plan."[63] The rule specifies limitations on the amount of carbon dioxide ("CO2") that may be emitted from existing coal-fired and combustion turbine generating plants. The Clean Power Plan also establishes individual state goals for average generating plant CO2 emissions rates and total CO2 emissions, based on what the EPA considers to be the "best system of emissions reduction … adequately demonstrated"[64] ("BSER") for generating plant CO2 emissions.

[63] A copy of the final rule is available at: http://www2.epa.gov/cleanpowerplan/clean-power-plan-existing-power-plants#CPP-final (last visited September 7, 2015).

[64] *Id*. at 9.

**Q60. WHY IS THE CLEAN POWER PLAN RELEVANT TO THE PROPOSED PPA AND NONBYPASSABLE CHARGE?**

A60. The relevance of the Clean Power Plan to the Draft PPA Agreement and nonbypassable rider stems from its likely impacts on the economics of operating the coal-fired plants identified in the Draft PPA Agreement, and the additional output volatility the Clean Power Plan will impose on retail customers if the nonbypassable rider is approved.

**Q61. HOW WILL THE CLEAN POWER PLAN INCREASE THE EXPOSURE OF AEP OHIO RATEPAYERS TO OUTPUT VOLATILITY RISK IF AEP OHIO'S PROPOSAL IS APPROVED?**

A61. Because the Clean Power Plan imposes hard constraints on emissions rates or emissions quantities, it is expected to lead to reductions in generation from coal-fired power plants. Reduced generation from the plants included under the Draft PPA Agreement because of the Clean Power Plan will lead to lower market-based wholesale revenues to offset the certain costs that customers must pay under the proposed PPA Rider. Therefore, the Clean Power Plan will increase the cost of the nonbypassable rider to consumers.

**Q62. HAS AEP OHIO PROVIDED ANY ANALYSIS OF THE LIKELY IMPACTS OF THE CLEAN POWER PLAN ON THE REVENUE AND COST ESTIMATES WHICH ARE REFLECTED IN THE TESTIMONY AND EXHIBITS OF AEP OHIO WITNESS PEARCE?**

A62. No. In its response to IEU INT-5-001 (attached as Exhibit JAL-8), AEP Ohio states it has not updated its analysis of revenues and costs to reflect the impacts of the Clean Power Plan.

## E. AEP Ohio Customers Will Be Forced to Subsidize Lower Market Prices and Reliability Benefits for All Other PJM Customers.

**Q63. HOW, IF AT ALL, WILL THE DRAFT PPA AGREEMENT COMBINED WITH THE NONBYPASSABLE PPA RIDER AFFECT GENERATION SUPPLY PRICES PAID BY OTHER CUSTOMERS IN THE PJM FOOTPRINT?**

A63. As explained previously, the output of the AEPGR plants subject to the Draft PPA Agreement will be resold into the wholesale market by AEP Ohio. To the extent the sale of this output works to reduce clearing prices in that wholesale market, the benefit of the lower clearing price will be distributed throughout the entire PJM footprint even though AEP Ohio's electric distribution customers pick up the tab for the difference in revenue streams. Second, to the extent the Draft PPA Agreement results in PJM reliability benefits, as claimed by AEP Ohio witness Bradish,[65] those reliability benefits will also accrue to all PJM customers. But again, it will be only AEP Ohio distribution customers bearing the financial and operational risk of the PPA generating units.

# V. THE DRAFT PPA AGREEMENT AND NONBYPASSABLE PPA RIDER WILL ADVERSELY AFFECT THE PJM WHOLESALE MARKETS AND OHIO'S RETAIL ELECTRIC MARKETS

## A. The Draft PPA Agreement Will Adversely Impact the PJM Wholesale Markets.

**Q64. DO ANY OF THE AEP OHIO WITNESSES DISCUSS THE POTENTIAL ADVERSE IMPACTS OF THE DRAFT PPA AGREEMENT AND NONBYPASSABLE RIDER ON THE PJM WHOLESALE CAPACITY AND ENERGY MARKETS?**

A64. No. Instead, AEP Ohio witness Vegas discusses the distortions of the PJM capacity and energy markets, such as "[a]rtificially depressed market

[65] Direct Testimony of Robert W. Bradish in Support of AEP Ohio's Amended Application at 4, line 18 – 5, line 4 ("Bradish Direct").

prices," that he asserts justify the combination of the Draft PPA Agreement and nonbypassable rider.[66] As discussed previously, Mr. Vegas ignores opportunities for AEPGR and willing buyers to enter into long-term bilateral agreements. Furthermore, the Draft PPA Agreement combined with the proposed PPA Rider will not remedy any of the distortions claimed by Mr. Vegas. Instead, the Draft PPA Agreement combined with the proposed PPA Rider will introduce an additional distortion of the PJM organized wholesale market for the unique benefit of AEPGR.

**Q65. WILL THE DRAFT PPA AGREEMENT AND NONBYPASSABLE RIDER DISTORT THE BROADER PJM CAPACITY AND ENERGY MARKETS AND, IF SO, HOW?**

A65. Yes. The transfer of AEPGR's operational and financial risk to AEP Ohio distribution customers will allow AEPGR to benefit uniquely from an anticompetitive subsidy that will artificially suppress market prices. As I described previously, the Draft PPA Agreement is unit contingent, but requires AEP Ohio to reimburse AEPGR fully for the costs of the PPA generating units, including a return on equity. Even if PJM market prices do not support those costs, AEPGR will be made whole on a monthly basis relative to a defined set of accounting costs plus a profit as a result of the Draft PPA Agreement.

Under normal economic circumstances, generators that are unable to recover all of their fixed costs and not expected to cover all of their fixed costs in the future will eventually be retired. But the combination of the Draft PPA Agreement and the nonbypassable rider is designed specifically to prevent that

[66] Vegas Direct at 13, lines 23.

outcome for AEPGR, by making the electric distribution customers of AEP Ohio responsible for AEPGR's financial and operational risk.

Cross-subsidies necessarily harm competitive markets because they tilt the competitive playing field towards firms that receive subsidies and against firms that do not. The Draft PPA Agreement and nonbypassable rider proposal is a clear example of a cross-subsidy that will transfer risk to AEP Ohio's captive distribution customers. That same risk transfer option is not available to other PJM market participants. As such, the wholesale competitive playing field will be tilted in AEPGR's favor.

While AEP Ohio may view its affiliate having a competitive advantage as a benefit, cross-subsidies always impose a net cost on markets. When subsidies are introduced into competitive markets, they ultimately make it impossible for unsubsidized firms to compete effectively. Thus, subsidies encourage existing, unsubsidized firms to leave the market and make it less likely that new firms will enter the market. The ultimate result is higher market prices that harm customers.[67]

**Q66. AEP OHIO FORECASTS THE DRAFT PPA AGREEMENT AND NONBYPASSABLE RIDER WILL BENEFIT AEP OHIO DISTRIBUTION CUSTOMERS BECAUSE THE PPA GENERATING PLANTS WILL BE ECONOMIC AFTER SEVERAL YEARS. DOES THIS PROVE THAT SUBSIDIZING THESE GENERATING PLANTS TODAY WILL PROVIDE BENEFITS TO AEP OHIO DISTRIBUTION CUSTOMERS IN THE FUTURE?**

A66. No. The "benefits" may never materialize: AEP Ohio's analysis is based on forecasts, and forecasts are never 100% accurate. The actual benefits that

[67] See J. Lesser, "Gresham's Law of Green Energy," *Regulation* at 12-18 (Winter 2010-2011).

AEP Ohio attributes to the Draft PPA Agreement and nonbypassable rider will depend on how the future unfolds during the life of the Draft PPA Agreement. If the future is exactly as AEP Ohio forecasts, then the cost of the “hedge” may turn out to be less than the market-based revenue AEP Ohio obtains from reselling the output of the affiliated generating units. If the realized outcome is worse than forecast, AEP Ohio wants its electric distribution customers to guarantee that AEP Ohio and AEPGR will be held harmless.

Questions about how the future will unfold are separate from the question of who should bear the risks that the future does not unfold as predicted by AEP Ohio. And the future is almost certain not to unfold as predicted by AEP Ohio.

For example, if actual loads through 2024 turn out to be the same as Dr. Pearce’s “-5% Load ATC Price” load growth scenario, then according to his Exhibit KDP-2, the Draft PPA Agreement will have an above-market cost of $927 million through 2024, which AEP Ohio distribution customers will be forced to pay through the nonbypassable rider. But Dr. Pearce offers no evidence that actual loads will be greater than this lower load growth scenario, or that this lower load growth scenario represents an absolute minimum of future loads. Yet, AEP Ohio’s proposal includes no downside protection for its distribution customers.

**B. <u>The Proposed PPA Rider Will Adversely Impact Ohio's Retail Electric Market.</u>**

**Q67. AT PAGE 6 OF AEP OHIO WITNESS ALLEN'S DIRECT TESTIMONY, HE STATES THAT, BECAUSE THE PROPOSED RIDER WILL BE NONBYPASSABLE, IT WILL NOT ADVERSELY AFFECT RETAIL COMPETITION.[68] DO YOU AGREE?**

A67. No. Mr. Allen's testimony states that, because the charge will be nonbypassable, it will preserve a "level playing field" for CRES providers.[69] However, by transferring AEPGR's generation-related financial and operational risks to AEP Ohio's captive distribution service customers, there no longer will be a "level playing field" for CRES providers. This is particularly true for CRES providers that have affiliated generation businesses or have entered into long-term generation supply contracts to support their retail service commitments.

**Q68. CAN YOU EXPLAIN WHY THERE WILL NO LONGER BE A LEVEL PLAYING FIELD?**

A68. Yes. The adverse impacts on retail competition stem from AEPGR's transfer of the financial and operational risk of the generating units covered under the Draft PPA Agreement to AEP Ohio distribution customers, through a cost recovery guarantee for those generating units. The Draft PPA Agreement is specifically designed to uniquely benefit AEPGR's competitive business operations. That unique benefit will, in turn, allow AEPGR to lower the price at which it sells wholesale sales of energy and capacity to CRES providers, or to its retail affiliate, AEP Energy, to the detriment of other retail competitors. Thus, Mr. Allen's claim of no adverse impact on retail competition is wrong.

68 Allen Direct at 6, lines 8-11.

69 *Id*.

**Q69. DOES THIS FINANCIAL RISK ADVANTAGE OCCUR REGARDLESS OF WHETHER MARKET PRICES ARE ABOVE OR BELOW THE ACCOUNTING COST THAT AEP OHIO PROMISES TO PAY AEPGR UNDER THE DRAFT PPA AGREEMENT?**

A69. Yes. Again, this is a consequence of the reduction in portfolio risk. Under the proposed formula rate, AEP Ohio will be obligated to pay AEPGR the identified costs and a return on capital investment, regardless of PJM market prices. Therefore, when market prices are below the PPA generating units' overall cost, AEPGR will be receiving an above-market subsidy payment from AEP Ohio. The resulting above-market revenues can then be used to subsidize its other generating units through sales into the PJM wholesale market, bids into the SSO auction, or sales to its retail affiliate, AEP Energy. Even if PJM market prices are above the cost of the PPA generating units, AEPGR still has lower exposure to market price volatility.

**Q70. IS IT POSSIBLE TO HAVE EFFECTIVE RETAIL ELECTRIC COMPETITION IN AEP OHIO'S SERVICE TERRITORY IF A SIGNIFICANT PERCENTAGE OF GENERATING CAPACITY IS OPERATED UNDER A LONG-TERM PPA AGREEMENT COUPLED WITH NONBYPASSABLE CHARGES TO ENSURE THE FINANCIAL VIABILITY OF THAT CAPACITY?**

A70. No. If significant utility generating capacity is under long-term contract, and the financial and operating risks of that generating capacity have been transferred to AEP Ohio distribution customers, then the competitive advantage transferred to AEPGR can transfer into artificially reduced SSO prices or lower prices of retail electricity sold by AEP Energy. In both cases, AEP Ohio distribution customers' demand for electricity supplied by non-affiliated CRES providers will be reduced and retail competition will suffer. At the same time, the majority of the benefits of lower wholesale market prices will be captured by customers and retail electric suppliers outside of Ohio.

## VI. IF THE PUCO DOES NOT REJECT THE NONBYPASSABLE RIDER OUTRIGHT, IT SHOULD ADOPT AN ALTERNATIVE STRUCTURE FOR THE RIDER

**Q71. WHY ARE YOU PROPOSING AN ALTERNATIVE STRUCTURE FOR THE PROPOSED NONBYPASSABLE RIDER?**

A71. Although I recommend the PUCO reject AEP Ohio's Amended Application outright, in the event the PUCO sees fit to authorize the Draft PPA Agreement and nonbypassable rider, and set the rider at a rate other than zero, then I recommend the rider be calculated to better align the ratemaking relationship between the costs and benefits and mitigate some of the problems resulting from the risk transfer I discussed earlier.

**Q72. CAN YOU EXPLAIN?**

A72. Yes. AEP Ohio witnesses assure the PUCO that the proposed rider will eventually benefit AEP Ohio retail customers even if, in the short-run, some of the generating units covered under the Draft PPA Agreement are not economic. Specifically, AEP Ohio asserts that, over the proposed term of the Draft PPA Agreement, the formula rate wholesale revenue requirement will be less than the wholesale revenue that AEP Ohio will collect by reselling the output of the AEPGR units into the wholesale market. For example, AEP Ohio witness Pearce's Exhibit KDP-2 shows the net PPA nonbypassable rider credit in each year for the average of his 5% higher load growth and 5% lower load growth scenarios, totaling $574 million if the additional revenues associated with the

PJM CP market are excluded and a carbon tax is assumed, and $1,537 million if the additional revenues from the PJM CP market are included but a carbon tax is not.

Similarly, under the weather-normalized case, AEP Ohio asserts that the net benefits to AEP Ohio customers will be $31 million with a carbon tax and excluding CP revenues, and $1,031 million excluding a carbon tax and including CP revenues. Furthermore, page 12 of AEP Ohio witness Fetter's direct testimony states that the PUCO can treat these weather-normalized case results as a "worst case" scenario, which I take to mean that AEP Ohio believes that its net customer benefit estimates are on the low side.[70]

However, the actual level of the proposed PPA Rider will not be tied to a reconciliation based on these long-term forecasts. Instead, the reconciliation will be based on the relationship between the two different revenue requirements, as measured periodically. As such, even if AEP Ohio could predict the future with perfect accuracy, the structure of the proposed PPA Rider defers the benefits to AEP Ohio distribution customers to later years, while imposing costs on those customers in the early years. And, because AEP Ohio seeks to allocate all of the financial and operational risk of the Draft PPA Agreement to its distribution customers, AEP Ohio will create a moral hazard, as I explained previously.

[70] Direct Testimony of Steven M. Fetter in Support of AEP Ohio's Amended Application at 12, lines 12-15 (May 15, 2015) ("Fetter Direct").

**Q73. WHAT DO YOU RECOMMEND?**

A73. I have three recommendations. First, given the long-term benefits to consumers forecast by AEP Ohio and the moral hazard created by the Draft PPA Agreement and the proposed PPA Rider, I recommend the PUCO not involve itself in AEP Ohio's decision to enter or not enter into a wholesale contract with AEPGR. Based on the advice of counsel and my own experience, it is my understanding that such a wholesale transaction is not subject to the PUCO's jurisdiction. Furthermore, the PUCO should make clear that, if AEP Ohio enters into the Draft PPA Agreement or any other wholesale power purchase agreement with AEPGR, then AEP Ohio: (i) assumes all business and financial risk associated with such agreements, and (ii) is prohibited from transferring any or all of that risk to AEP Ohio distribution customers.

Second, should AEP Ohio nevertheless decide to enter into the Draft PPA Agreement and desires to share immediately the benefits it attributes to this structure in the interest of "stabilizing or providing certainty regarding retail electric service"[71] or some other reason, I recommend the PUCO permit AEP Ohio to seek approval of a PPA Rider, <u>provided that it is a credit (and never a charge)</u>. Such a limitation respects AEP Ohio's views about the future its witnesses have forecast.

Third, in the event AEP Ohio does not wish to share immediately the benefits it attributes to the Draft PPA Agreement with AEPGR with its distribution

[71] R.C. 4928.143(B)(2)(d).

customers, then I recommend the PUCO maintain the current PPA Rider at zero and allow the rider to expire at the end of the term of the current ESP.

**Q74. IF AEP OHIO BENEFITS FROM ENTERING INTO THE DRAFT PPA AGREEMENT WITH AEPGR AND RESELLING THE OUTPUT OF THE GENERATING PLANTS INCLUDED UNDER THE DRAFT PPA AGREEMENT INTO THE WHOLESALE MARKET, THEN DO YOU RECOMMEND AEP OHIO BE REQUIRED TO SHARE THIS BENEFIT WITH ITS DISTRIBUTION CUSTOMERS?**

A74. No. Unless AEP Ohio elects to share the benefits it has attributed to the Draft PPA Agreement with its distribution customers, I recommend that any gains it may realize be treated as being "below the line" (excluded) for purposes of Ohio distribution service ratemaking. If AEP Ohio bears all of the risk associated with the Draft PPA Agreement and resale of the output of the AEPGR generating plants covered under that agreement, then AEP Ohio's distribution customers should have no right or entitlement to any such gains. Such a risk-reward allocation is consistent with basic economics.

**Q75. IF AEP OHIO DOES SEEK TO ESTABLISH A CREDIT PPA RIDER, DO YOU HAVE ANY RECOMMENDATIONS ON HOW THE LEVEL OF THE CREDIT SHOULD BE ESTABLISHED?**

A75. Yes. I recommend a levelization approach be used to identify the amount of the total credit and how the total credit might be shared with electric distribution customers through the PPA Rider. Under this approach, AEP Ohio's forecasted benefits would be spread out and averaged on a net basis over the entire term of the wholesale agreement between AEP Ohio and AEPGR. This approach would establish the initial level of the PPA Rider credit and establish the parameters for the reconciliation component of the PPA Rider. That way, a defined amount of the total credit will be shared with AEP Ohio distribution customers, no more and no less. For the reasons I have already mentioned, I recommend that the total credit and the amount shared with customers be determined based on the forecast that AEP Ohio supports in this proceeding (which shows, according to AEP Ohio, wholesale revenues in excess of wholesale costs) and that it not be tied to the contract for differences approach advanced by AEP Ohio in this proceeding.

**Q76. WHAT ARE THE BENEFITS OF YOUR RECOMMENDED APPROACH?**

A76. First, if AEP Ohio elects this approach, AEP Ohio distribution customers will enjoy immediate benefits, rather than an immediate increase in their electric bills. Second, the PUCO will not be entangled, explicitly or implicitly, in authorizing or supervising wholesale transactions or wholesale ratemaking. Third, this approach will eliminate the moral hazard problem created by the Draft PPA Agreement and nonbypassable PPA Rider.

**Q77. WOULD YOUR SUGGESTED MODIFICATION OF THE PROPOSED PPA RIDER ELIMINATE THE POTENTIAL ADVERSE IMPACTS ON WHOLESALE COMPETITION?**

A77. No. However, my recommendation would leave it up to FERC to identify and address adverse impacts on wholesale markets as well as how and when affiliate transaction standards and regulations affecting AEPGR's and AEP Ohio's use of wholesale market-based pricing authority may apply. Thus, any negative impacts on wholesale competition would not be the result of action by the PUCO.

**Q78. WOULD YOUR SUGGESTED MODIFICATION OF THE PROPOSED PPA RIDER ELIMINATE THE POTENTIAL ADVERSE IMPACTS ON RETAIL COMPETITION?**

A78. I believe the adverse impacts on retail competition would be reduced under my recommended approach because the moral hazard component would be eliminated. Nevertheless, my credit-only rider recommendation still may have adverse impacts on retail competition. These should be identified and addressed in the stakeholder process I recommend below, should AEP Ohio elect to move forward with a credit-only PPA Rider.

**Q79. DO YOU HAVE ANY RECOMMENDATIONS ON THE PROCESS BY WHICH THE INITIAL CREDIT AMOUNT FOR THE PPA RIDER WOULD BE ESTABLISHED?**

A79. Yes. Given the broad interests of stakeholders, and assuming AEP Ohio and AEPGR are willing to assume the financial and operational risks of the generating units included under the Draft PPA Agreement, I recommend that the PUCO initially task stakeholders with developing the details of this modified approach. If AEP Ohio is unwilling to assume the risk that the forecasted benefits of the Draft PPA Agreement and proposed nonbypassable rider will not materialize in the real world, I recommend that the current PPA Rider remain at zero and that the PPA Rider expire without change on the scheduled expiration date of the current ESP.

**Q80. BECAUSE SUCH A STAKEHOLDER PROCESS WOULD TAKE TIME, WHAT DO YOU RECOMMEND IN THE INTERIM?**

A80. I recommend the PUCO maintain the status quo (i.e., a zero dollar value for the nonbypassable rider) until the process described above is complete.

**Q81. COULD AEP OHIO REAP ADDITIONAL BENEFITS UNDER YOUR RECOMMENDED APPROACH?**

A81. Absolutely. AEPGR and AEP Ohio would have an incentive to both reduce costs and improve the operating efficiency of the generating units it operates covered under the Draft PPA Agreement and nonbypassable rider. For example, by reducing the forced outage rates of the covered generating units, AEP Ohio would be able to resell greater quantities of energy and capacity into the PJM market, thereby increasing sales revenues. Doing so would clearly benefit AEP Ohio and AEPGR. If AEP Ohio truly has been conservative in estimating the net benefits of the Draft PPA Agreement, then this conservative estimate would likewise suggest an opportunity for AEP Ohio to reap additional benefits.

**Q82. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

A82. Yes.

## CERTIFICATE OF SERVICE

In accordance with Rule 4901-1-05, Ohio Administrative Code, the PUCO's e-filing system will electronically serve notice of the filing of this document upon the following parties. In addition, I hereby certify that a service copy of the foregoing *Direct Testimony of Jonathan A. Lesser, Ph.D. on Behalf of Industrial Energy Users-Ohio,* was sent by, or on behalf of, the undersigned counsel for IEU-Ohio to the following parties of record this 11th day of September 2015, *via* electronic transmission.

*/s/ Frank P. Darr*
Frank P. Darr

Steven T. Nourse
Matthew J. Satterwhite
Matthew S. McKenzie
American Electric Power Service Corporation
1 Riverside Plaza, 29th Floor
Columbus, Ohio 43215
stnourse@aep.com
mjsatterwhite@aep.com
msmckenzie@aep.com

Daniel R. Conway
Porter Wright Morris & Arthur LLP
41 S. High Street, Suites 2800-3200
Columbus, Ohio 43215
dconway@porterwright.com

Christopher L. Miller
Ice Miller LLP
250 West Street
Columbus, Ohio 43215
Christopher.miller@icemiller.com

**On Behalf of Ohio Power Company**

Mark S. Yurick
Taft Stettinius & Hollister LLP
65 East State Street, Suite 1000
Columbus, Ohio 43215
myurick@taftlaw.com

**On Behalf of The Kroger Co.**

David F. Boehm
Michael L. Kurtz
Jody Kyler Cohn
BOEHM, KURTZ & LOWRY
36 East Seventh Street, Suite 1510
Cincinnati, Ohio 45202
dboehm@bkllawfirm.com
mkurtz@bkllawfirm.com
jkyler@BKLlawfirm.com

**On Behalf of the Ohio Energy Group**

Mark A. Hayden
Jacob A. McDermott
Scott J. Casto
FirstEnergy Service Company
76 South Main Street
Akron, Ohio 44308
haydenm@firstenergycorp.com
jmcdermott@firstenergycorp.com
scasto@firstenergycorp.com

James F. Lang
N. Trevor Alexander
Calfee, Halter & Griswold LLP
1405 East Sixth Street
Cleveland, Ohio 44114
jlang@calfee.com
talexander@calfee.com

**On Behalf of FirstEnergy Solutions Corp.**

Richard C. Sahli (0007360)
Richard Sahli Law Office, LLC
981 Pinewood Lane
Columbus, OH 43230-3662
rsahli@columbus.rr.com

Tony G. Mendoza
Kristin A. Henry
Counsel of Record
Sierra Club
Environmental Law Program
85 Second Street, Second Floor
San Francisco, CA 94105-3459
Tony.mendoza@sierraclub.org
Kristin.henry@sierraclub.org

Susan L. Williams
Sierra Club
50 F. Street, NW, 7th Floor
Washington, DC 20001
Laurie.williams@sierraclub.org

Christopher M. Bzdok
Olson Bzdok & Howard, P.C.
420 E. Front Street
Traverse City, MI 49686

Shannon Fisk
Earthjustice
1617 John F. Kennedy Blvd.
Suite 1675
Philadelphia, PA 19103
sfisk@earthjustice.org

Michael C. Soules
Earthjustice
1625 Massachusetts Ave. NW, Suite 702
Washington, DC 20036
msoules@earthjustice.org

**On Behalf of the Sierra Club**

Kurt P. Helfrich
Scott Campbell
Stephanie M. Chmiel
Thompson Hine LLP
41 South High Street, Suite 1700
Columbus, Ohio 43215
Kurt.helfrich@thompsonhine.com
Scott.campbell@thompsonhine.com
Stephanie.chmiel@thompsonhine.com

**On Behalf of Buckeye Power, Inc.**

Terrence O'Donnell
Dickinson Wright PLLC
150 East Gay Street, Suite 2400
Columbus, Ohio 43215
todonnell@dickinsonwright.com

**On Behalf of Mid-Atlantic Renewable Energy Coalition; and, Ohio Advanced Energy Economy**

Trent Dougherty
Ohio Environmental Council
1145 Chesapeake Ave., Suite 1
Columbus, Ohio 43212
tdougherty@theOEC.org

**On Behalf of the Ohio Environmental Council; and, Environmental Defense Fund**

Richard L. Sites
Ohio Hospital Association
155 E. Broad Street, 3rd Floor
Columbus, Ohio 43215-3620
ricks@ohanet.org

Thomas J. O'Brien
Bricker & Eckler LLP
100 South Third Street
Columbus, Ohio 43215
tobrien@bricker.com

**On Behalf of the Ohio Hospital Association**

Lisa M. Hawrot
Spillman Thomas & Battle PLLC
Century Centre Building
1233 Main Street, Suite 4000
Wheeling, West Virginia 26003
lhawrot@spilmanlaw.com

Derrick Price Williamson
Spillman Thomas & Battle PLLC
1100 Bent Creek Blvd., Suite 101
Mechanicsburg, Pennsylvania 17050
dwilliamson@spilmanlaw.com

Carrie M. Harris
Spillman Thomas & Battle, PLLC
310 First Street, Suite 1100
Roanoke, VA 24002
charris@spilmanlaw.com

**On Behalf of Wal-Mart Stores East, LP, and Sam's East, Inc.**

Kevin R. Schmidt
Energy Professionals of Ohio
88 East Broad Street, Suite 1770
Columbus, Ohio 43215
Schmidt@sppgrp.com

**On Behalf of Energy Professionals of Ohio**

Madeline Fleisher
Environmental Law & Policy Center
21 West Broad Street, Suite 500
Columbus, Ohio 43215
mfleisher@elpc.org

**On Behalf of Environmental Law & Policy Center**

Kimberly W. Bojko
Rebecca L. Hussey
Carpenter Lipps & Leland LLP
280 North High Street - Suite 1300
Columbus, Ohio 43215
Bojko@carpenterlipps.com
hussey@carpenterlipps.com

**On Behalf of the OMAEG**

Jeffrey W. Mayes
Monitoring Analytics, LLC
2621 Van Buren Avenue, Suite 160
Valley Forge Corporate Center
Eagleville, Pennsylvania 19403
Jeffrey.mayes@monitoringanalytics.com

Todd M. Williams
Shindler, Neff, Holmes, Worline & Mohler
300 Madison Avenue
1200 Edison Plaza
Toledo, Ohio 43604
twilliams@snhslaw.com

**On Behalf of Monitoring Analytics, LLC**

Howard Petricoff
Michael J. Settineri
Gretchen L. Petrucci
Vorys, Sater, Seymour and Pease LLP
52 East Gay Street
Columbus, Ohio 43215
Mhpetricoff@vorys.com
mjsetterini@vorys.com
glpetrucci@vorys.com

**On Behalf of Retail Energy Supply Association; PJM Power Providers Group and Electric Power Supply Association; and Constellation NewEnergy, Inc. and Exelon Generation Company, LLC**

Joseph Oliker
IGS Energy
6100 Emerald Parkway
Dublin, Ohio 43016
joliker@igsenergy.com

**On Behalf of IGS Energy**

Gerit F. Hull
Eckert Seamans Cherin & Mellott, LLC
1717 Pennsylvania Avenue, N.W. 12th Fl
Washington, DC 20006
ghull@eckertseamans.com

**On Behalf of Direct Energy Services, LLC, Direct Energy Business, LLC and Direct Energy Business Marketing, LLC**

William J. Michael
Counsel of Record
Jodi Bair
Kevin F. Moore
Assistant Consumers' Counsel
Office of the Ohio Consumers' Counsel
10 West Broad Street, Suite 1800
Columbus, Ohio 43215
William.michael@occ.ohio.gov
Jodi.bair@occ.ohio.gov
Kevin.moore@occ.ohio.gov

Dane Stinson
Bricker and Eckler LLP
100 South Third Street
Columbus, Ohio 43215
dstinson@bricker.com

**On Behalf of the Ohio Consumers' Counsel**

Joel E. Sechler
Carpenter Lipps & Leland
280 N. High St., Suite 1300
Columbus, Ohio 43215
sechler@carpenterlipps.com

Gregory J. Poulos
EnerNOC, Inc.
471 E. Broad St., Suite 1520
Columbus, Ohio 43054
gpoulos@enernoc.com

**On Behalf of EnerNoc, Inc.**

Michael R. Smalz
Ohio Poverty Law Center
555 Buttles Avenue
Columbus, Ohio 43215
msmalz@ohiopovertylaw.org

**On Behalf of the Appalachian Peace and Justice Network**

Werner L. Margard
Steven L. Beeler
Assistant Attorneys General
Chief, Public Utilities Section
180 East Broad Street, 6th Floor
Columbus, OH 43215-3793
werner.margard@puc.state.oh.us
steven.beeler@puc.state.oh.us

**On Behalf of the Staff of the Public Utilities Commission of Ohio**

Sarah Parrott
Greta See
Attorney Examiners
Public Utilities Commission of Ohio
180 E. Broad Street
Columbus, Ohio 43215
Sarah.parrott@puc.state.oh.us
Greta.see@puc.state.oh.us

**Attorney Examiners**